US Army Corps
of Engineers
Rock Island District

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

Archives Search Report

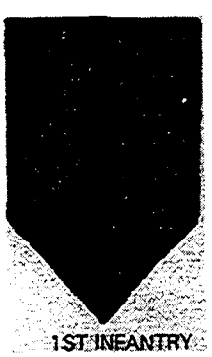
FINDINGS

for
the former

CAMP ESSEX

Essex, California
Project Number J09CA027801

September 1996



DEFENSE ENVIRONMENTAL RESTORATION PROGRAM
for
FORMERLY USED DEFENSE SITE

FINDINGS

ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR
FORMER CAMP ESSEX
ESSEX, CALIFORNIA
PROJECT NUMBER J09CA027801

September 1996

Prepared For

U.S. Army Corps of Engineers
Engineering and Support
Center, Huntsville
ATTN: CEHNC-OE
P.O. Box 1600
Huntsville, Alabama 35807-4301

Prepared By

U.S. Army Corps of Engineers
Rock Island District
ATTN: CENCR-ED-DO
P.O. Box 2004
Rock Island, Illinois 61204-2004

and

U.S. Army Defense Ammunition
Center and School
ATTN: SIOAC-ES
Savanna, Illinois 61074-9639

ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR
FORMER CAMP ESSEX
ESSEX, CALIFORNIA
PROJECT NUMBER J09CA027801

ACKNOWLEDGMENT

The following persons provided support as indicated.

Function	Name	Title	Organization	Telephone
On-Site Assessment	Jerry D. Russell *	UXO Safety Specialist	CENCR-ED-DO	(309)794-6008
	Greg Olson	Quality Assurance Specialist	CENCR-ED-DO	(309)794-6016
Engineering Support	Daniel J. Holmes	Professional Engineer	CENCR-ED-DO	(309)794-6080
Technical Library Search	Larry Dauphin	Quality Assurance Specialist	SIOAC-ESL	(815)273-8867
Geographic District Support	Greg Boghossian	Project Manager	CESPL-ED-MI	(213)452-3722
Industrial Hygiene	Bob Platt	Industrial Hygienist	MCXP-RIA	(309)782-0806
CADD	Kevin Marker	Technician	CENCR-ED-DO	(309)794-6026

*Team Leader

ORDNANCE AND EXPLOSIVES
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1. INTRODUCTION

a. Subject and Purpose

(1) This report presents the findings of a historical records search and site inspections for ordnance and explosives (OE) located at the former Camp Essex, Essex, California (See plate 1). The property boundary of Camp Essex encloses a temporary camp known as Camp Clipper and Camp Essex. Camp Clipper was a temporary camp that was used until the more permanent Camp Essex was built to the east. More recent official documents refer to the site as Camp Essex, but older documents, local residents and officials refer to the site as Camp Clipper. In this report, the entire site will be referred to as Camp Essex and only the specific area that was Camp Clipper will be referred to as Camp Clipper. The investigation was performed under the authority of the Defense Environmental Restoration Program for Formerly Used Defense Sites.

(2) The investigation focused on 30,536.5 acres that was used as a Camp Essex from December 1943 until March 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). The investigation was conducted by experienced ordnance experts through thorough evaluation of historical records, interviews, and 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 information to assess current day potential ordnance contamination where actual 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 that have been lost, abandoned, discarded, buried, fired, or thrown from demolition pits or burning pads. These items were either 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" that refers to any mixture in soil, sands, clays, etc., such that the mixture itself is explosive. Generally, 10 percent or more by weight of OE contamination in a soil mixture is considered explosive soil.

2. PREVIOUS INVESTIGATIONS

a. 1994 DERP FUDS Inventory Project Report

A DERP FUDS Inventory Project Report (INPR) for the former Camp Essex, Site No: J09CA027801, was conducted 11 February 1994 (See Table 2-1). At that time, the Findings and Determination Eligibility (FDE), dated 11 February 1994, found that the site had been formerly used by the Department of Defense and as such was eligible under the Defense Environmental Restoration Program (See document E-2). A Risk Assessment Code (RAC) of 4 was assigned to the former Camp Essex.

TABLE 2-1
DERP-FUDS PRELIMINARY ASSESSMENT PROJECTS

Project Number	DERP Category	Present Phase	Comments	Location
	HTRW		None Recommended	
	BD/DR		None Recommended	
J09CA027801	OE	SI	Ordnance or Explosive Contamination	Entire 30,536.5 acres

b. Other Investigations

No other pertinent investigations or inspections were discovered during the ASR process.

3. SITE DESCRIPTION

a. Existing Land Usage

The former Camp Essex is located west of Essex, California. The majority of the site is undeveloped desert. Interstate 40 runs east to west through the northern third of the site. A rest stop on Interstate 40 is located on the site of the Camp Essex Garrison Area.

TABLE 3-1
CURRENT LAND USAGE

Area	Former Usage	Present Owner	Present Usage	Size/ Acres	Comments
A-1	Clipper Mountains Impact Area	BLM, SF Pacific Properties Inc.	Public & Private Land	3,690	See Plates 3 & 4
A-2	Clipper Mountains Impact Area	BLM	Public Land	160*	See Plates 3 & 4
B	Small Arms Range South	BLM, SF Pacific Properties Inc.	Public & Private Land	3,245	See Plates 3 & 4
C	Small Arms Range North	BLM, SF Pacific Properties Inc.	Public & Private Land	650	See Plates 3 & 4
D	Grenade Pits West	BLM	Public Land	640	See Plates 3 & 4
E	Grenade Pits East	BLM	Public Land	640*	See Plates 3 & 4
F	Camp Essex Garrison Area	BLM, SF Pacific Properties Inc.	Public & Private Land	2,308	See Plates 3 & 4
G-1	Camp Essex Airstrip	SF Pacific Properties Inc.	Private Land	85	See Plates 3 & 4
G-2	Camp Essex Airstrip, Additional Acreage	BLM	Public Land	221*	See Plates 3 & 4
H	Remaining Lands	BLM, State of California, SF Pacific Properties Inc.	Highway, Residence, Public Land	19,919	See Plates 3 & 4
			Total Approximate FDE Acreage:	30,536.5	
			Additional Acreage:	861.0	
			Total Approximate Acreage:	31,397.5	

* Acreage Not Included in FDE

b. **Climatic Data**

(1) The desert area of southern California east of the mountains lie within the Great Basin. The Great Basin has a diverse effect on the climate of Southern California's deserts. It is an area of climatological extremes. The deserts of Southern California are Death Valley and the Mojave Desert, which are the biggest of the Southern California deserts. These areas are the hottest and driest parts of the State (reference B-18).

(2) The Summertime in the Needles area is one of unforgiving heat without shade. The intense summer temperatures general run from May to September with average daily maximums exceeding 95 degrees Fahrenheit, and highs sometimes reaching 120 degree plus. The summer months average 140 days of 90 degree plus temperatures. Nightfall within the desert community is one of complete opposite contrast. The daily minimums for nighttime temperatures in the desert are generally 40 to 60 degrees cooler, with extremes being between the upper 30's and lower 40's. As for rainfall, during the summer months, July and August normally get the most precipitation averaging between 0.5 to 0.75 inches of rainfall. The greatest monthly totals have occurred within these two months, with maximum monthly rainfalls over four inches and a daily maximum that exceeded two and one-half inches.

(3) Fall in the Needles area has somewhat less oppressive heat, with temperatures between the middle 80's and middle 70's. The average number of days with temperatures over 90 degrees is 15, with the nightly temperatures a little less than the summer nights. Rainfall for fall's monthly average is less than 0.5 inch, with the greatest daily maximum being a little over 1 inch.

(4) In the winter months, night temperatures slightly above freezing are tempered considerably by warming during the daytime. The daily maximum temperatures range from middle 60's to the upper 70's with the daily minimums ranging from the middle 40's to the upper 50's. The average number of days when temperatures fall below freezing is six days. Rainfall picks up a little from the fall phase and generally averages over 0.5 inches per month. The greatest monthly total of rainfall that did occur for the winter season happened in December 1965 when the rain gauge exceeded two inches.

(5) Springtime temperatures range from the lower 70's to the middle 80's. During this season, the temperature exceeds 90 degrees, (on an average of 10 days). Precipitation falls off somewhat compared to the previous five months, with the driest around the April-May time frame.

c. **Topography**

The eastern area of the San Bernardino County is located within the Great Basin with various mountain ranges separated by valleys. The former Camp Essex is located between the Clipper Mountains on the west and the Piute Mountains on the east. The Clipper Mountains are located partially within the western boundaries of the former Camp Essex (See Photographs J-1 & J-2) The east face of the mountains are steep and very rocky (See Photographs J-3 & J-4). Between the mountain ranges is a large alluvial plain with both east and west areas gradually sloping up to the respective mountain ranges (See Photograph J-19). Within this large alluvial plain are various washes. The major wash is called the Watson Wash which runs through the site of Camp Essex on the east of the site(See Photograph J-18).

d. **Geology and Soils**

The soils around this 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 up of granite. Due to both wind and water erosion, the volcanic formations slowly began chipping away, forming immature sandy soil. This immature sandy soil makes up the majority of the site's terrain.

e. **Hydrology**

Camp Essex is located in the Mojave Valley in the Needles Hydrologic sub-unit of the Needles Hydrologic Unit. The immature sandy soil has a high rate of hydraulic conductivity, but does not have a water table close to the surface do to limited rainfall. When rainfall does occur, the washes located in this area become areas of raging water that travel at high speeds resulting in heavy soil errosion and flash flooding.

f. **Natural Resources**

Federally listed or proposed threatened species that may exist at the former Camp Essex are listed in Table 3-1 below (See Document F-9). Although only listed species receive protection under the Endangered Species Act, candidate species should be considered for planning purposes in the event they become listed prior to project completion.

g. **Historical/Cultural Resources**

Eight historic and three prehistoric sites have been identified in the former Camp Essex area (See Document F-10). It is likely that more sites are present and are yet to be discovered. Before the beginning of any future remediation, contact should be made with the SHPO to obtain the current status of the site.

TABLE 3-2
NATURAL, HISTORICAL, & CULTURAL RESOURCES

Resource Classification	Type	Comment
Wildlife	Desert Tortoise	Threatened
	Pallid Bat	Candidate for Federal Listing
	California Leaf Nosed Bat	Candidate for Federal Listing
	Occult Little Brown Bat	Candidate for Federal Listing
	Southwestern Cave Myotis	Candidate for Federal Listing
	Spotted Bat	Candidate for Federal Listing
	Pacific Western Big-eared Bat	Candidate for Federal Listing
	Great Western Mastif-Bat	Candidate for Federal Listing
Vegetation	None Listed	
Historical	Eight Historic and three Pre-historic Sites	See Document F-10
Cultural	None Identified	

4. HISTORICAL ORDNANCE PRESENCE

a. **Chronological Site Summary**

(1) The Camp Essex site was established as one of the several divisional camps within the Desert Training Center (DTC). On 13 December 1943, the U.S. Department of the Interior transferred, by means of a use permit, 21,537.78 acres to the War Department in lieu of a formal real estate directive. An additional 8,998.72 acres was granted by permit. The dates and parties associated with these permit acquisitions cannot be determined. They were most likely secured from the Southern Pacific Company, the State of California, and private landowners between 1942 and 1943.

(2) Camp Clipper was established during 1942 and subsequently occupied by the 33rd Infantry Division (ID). Camp Clipper, a temporary camp, was located adjacent to and west of the encampment area on the site formally acquired for Camp Essex. The 33rd Infantry Division was stationed at Camp Clipper from 28 March to 17 July 1943. Camp Clipper was abandoned after the completion of Camp Essex.

(3) The 93rd Infantry Division arrived at Camp Essex on 21 June 1943. While at Camp Essex, the division conducted individual and unit training in preparation for maneuvers and combat operations (See Document F-2). The 93rd Infantry Division participated in its first exercise on 9 November 1943. The division departed Camp Essex on 5 January 1944.

(4) Temporary improvements constructed on the Camp Essex site consisted of 24 enlisted men's shower buildings, 12 officer's shower buildings, 191 latrines, 149 pyramidal tent frames, an outdoor theater, two 740-foot-deep wells, and a 50,000 gallon water storage tank. In addition, 19 firing ranges were prepared. The only permanent structure constructed on the site was a 50,000 gallon concrete reservoir located on the site of Camp Clipper.

(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, CAMA's mission was already scaling down. The major reason for the scale down of CAMA was the critical shortage of service personnel, particularly transportation and communications specialists, who were rapidly being shipped overseas in 1943. Due to this shortage

in service personnel, General McNair recommended the closing of the CAMA.

(6) In February 1944, the 827th Tank Destroyer Battalion was given responsibility for closing the ranges at Camp Essex and removal of salvageable materials. On March 30, 1944, CAMA was declared surplus by the War Department. All of the major commands were ordered to close the facilities down and clean up each camp.

(7) In May 1944, 350 Italian prisoners of war were brought to Camp Essex to clear artillery duds from the ranges.

(8) Between 1944 and 1949 all permits were canceled and the land were returned to the owners.

(9) In May of 1964, the 1st Infantry Division from Fort Riley Kansas occupied the former Camp Essex. The 1st Infantry Division was at Camp Essex during the Desert Strike Exercise. A news paper article indicates that the Division Headquarters was located at least temporarily at Camp Essex.

b. **Review of Ordnance Related Records**

(1) Research efforts began with a thorough review of all reports, historical documents, and reference material gathered during the ASR historical document search (See Appendix A). During this review, an effort was made to focus on areas of potential OE contamination.

(2) Several documents including drawings, maps, real estate documentation, correspondence, and various other records appropriate to the former Camp Essex were located as is seen throughout this report.

(3) A letter dated 6 August 1942, from Headquarters Army Ground Forces, provided a list of chemical ammunition authorized for the Desert Training Center (See Document F-1). The items authorized were as follows: Smoke Pot M1, Tear Gas Pot M1 CN, Land Mine Chemical empty with burster, and Tear Gas Solution CNB. There were no toxic chemical items listed.

(4) A document titled history of the 93rd Infantry Division stated that the 93rd Infantry Division had three 105mm and one 155mm battery assigned (See Document F-2). The document mentioned that the Division had moved to Camp Clipper and participated in its first exercise on 9 November 1943. No mention was made as to whether the assigned artillery batteries actually fired their guns while at Camp Essex. The Division departed Camp Clipper in early January 1944.

(5) A letter dated 8 February 1944, from Headquarters California Arizona Maneuver Area, charged Commanders of major units with the responsibility of closing of target ranges and the removal of salvageable materials (See Document F-3). The Camp Essex ranges were to be closed by the 827th Tank Destroyer Battalion on about 14 February 1944.

(6) A letter dated 17 February 1944, from Headquarters Army Service Forces assigned responsibility for disposition of excess ammunition and supplies (See Document F-4). The letter directed the Commanding General of the Ninth Service Command to assist the Commanding General of CAMA in expediting the return of excess ammunition to normal supply channels. The letter directed that the return of ammunition and supplies be speeded up to the maximum extent possible

(7) An extract from the 93rd Infantry Division Summary of Operations dated March 1946, briefly reviewed the divisions training at Camp Essex (See Document F-5). The 93rd completed courses in basic training, physical conditioning, and unit operations. In preparation for combat, they conducted maneuvers under overhead artillery and small arms fire and conducted training on an infiltration course. The trainees in the infiltration course had small arms fired over their heads and TNT charges were detonated to simulate grenades. The exact location of these maneuvers was not mentioned.

(8) A letter dated 1 June 1949, from the Bureau of Land Management to the District Land Office recommended that their tract book and plat maps be annotated to reflect ordnance contamination at the former Camp Essex (See Document F-6). The letter recommended that sections 17, 18, 19, 20, 29, and 30 of Township 8N, Range 16E be restricted to surface use only as a result of the land having been heavily impacted with mortar fire. This property is indicated as Area A-1 on Plate 3.

(9) A map dated October 1951, from the Office of the District Engineer in Los Angeles, indicated the areas that had been dedudded in the California - Arizona Maneuver Area (See Document L-1). This map indicated that all of Camp Essex, with the exception of the western six sections, had been "inspected and/or dedudded and certified clear for all uses". The western six sections were "inspected and/or dedudded and restricted for surface use only". These six sections are consistent with the sections mentioned in paragraph 4b.(8) above.

(10) An affidavit, dated 13 September 1954, from the Los Angeles District U.S. Army Corps of Engineers to the County of Los Angeles, also stated that sections 17, 18, 19, 20, 29, and 30 of Township 8N, Range 16E may contain unexploded ordnance and that these areas should be considered dangerous for any use below the surface (See Document F-7).

(11) A book by a local resident related his experiences with the 33rd and the 93 Infantry Divisions at Camp Essex during 1943 and 1944 (See Document F-8). The author mentions watching tracers during night artillery firing. The book states that the 93rd Infantry Division left Camp Clipper in January 1944. Then in May, 350 Italian prisoners of war were brought to Camp Essex to post the artillery duds remaining in the area.

(12) A plat map of San Bernardino County, dated 14 April 1924, was annotated in 1956 that 6 sections and 160 acres were contaminated with explosives (See Document G-1). This notation references the Corps of Engineers as the source of the restriction.

(13) A letter dated 21 September 1956, from the Los Angeles District, Army Corps of Engineers to BLM, provided a listing of lands contaminated by military operations at the DTC (See Document F-12). This letter lists 6 sections that are located within the Camp Essex boundary (T8N R16E, sections 17, 18, 19, 20, 29, & 30). These 6 sections are referred to in this report as Area A-1 (See Plate 3). The letter also lists 2 section that are adjacent to the Camp Essex boundary (T8N R16E, sections 31 & 32). These sections were not addressed in the two documents mentioned in paragraphs 4b.(8) and (9). These two sections show up as partial sections on a BLM plat map dated July 1995 (See Document G-2). These two partial sections have been included in this report as Area A-2 (See Plate 3).

(14) A news paper article in the Needles Desert Star, dated 7 May 1964, discussed the past and current military history at Camp Essex (See Document H-1). The article relates the 1942 visit by General Patton, to the town of Essex. The article mentions that the Clipper Mountains were used as an impact area by the 33rd and 93rd Infantry Divisions, and that local residents had seen tracers from the infiltration course and other firing ranges. The article further mentions that Italian POWs were used to clear the mountains and ranges around Camp Essex, of artillery duds. During May of 1964, it was stated that, Headquarters 1st Infantry Division was camped at the former Camp Essex during preparation for Exercise Desert Strike.

(15) A plat map from the Bureau of Land Management, dated 23 July 1995, indicates that 6 sections and 2 partial sections consisting of 80 acres each were restricted to surface use only (See Document G-2). This acreage is referred to in this report as Area A. This 160 acres is adjacent to but was not within the boundaries of the former Camp Essex.

c. Interviews With Site Related Personnel

(1) Mr. Wiley has been with the Needles Office of the Bureau of Land Management (BLM) for 10 years (See Document I-1). Prior to this, he worked for the Corps of Engineers in Portland Oregon, as a ranger. Mr. Wiley said he had heard of OE finds throughout the former Desert Training Center (DTC) but, none specifically at Camp Essex. Mr. Wiley stated that he believed that part of the Desert Strike exercise was held in the former Camp Essex area. The Desert Strike exercise took place over a large portion of the DTC in 1964. He also indicated that as far as he knew there had been no live artillery fire during Desert Strike. Mr. Wiley said that since most of the desert had been designated as a wilderness area, usage had increased 10 fold in the last 10 years. This has resulted in increased visitor pressure on the old camps. More visitors have meant more damage to the camps and more exposure to possible OE. Mr. Wiley said that the entire project area was habitat for the desert tortoise, an endangered species, and any excavation would require the presence of a wildlife biologist. He referred us to Jack Howard, who is the Postmaster in the town of Essex. Mr. Wiley indicated that Jack Howard was very familiar with the area and that he knew a lot of people in the area.

(2) Mr. Jack Howard is the Postmaster in Essex, California (See Document I-2). He has spent a great deal of time exploring the Camp Clipper/Essex area. Mr. Howard said that in the early 1970s he had found what he referred to as "grenade pits". He said they were located on the south west side of the camp south of Essex Road. He reported his find to the Sheriff and does not know what happened after that. He believes that most of the ordnance activity was located south of Essex Road. Mr. Howard said he had heard that artillery had been fired at the Clipper Mountains to the West. He said he had been in that area and had not found any OE. Mr. Howard said that he was not aware of any OE other than the "grenade pits" found in the Camp Essex area.

(3) Mr. Bob Lyons has been with the San Bernardino Sheriff's Office for 12 years (See Document I-3). He is currently assigned as a forensics specialist. He has been to

the Camp Essex area on four occasions. He said he did not find any evidence of OE during these visits. He also could not recall hearing of any OE being found in the area. He was aware of other finds in other camp areas but not Camp Essex. He referred us to his father who retired from the Sheriff's Office.

(4) Mr. Jerry Lyons was with the San Bernardino Sheriff's Office for 37 years (See Document I-4). He is currently retired but works as a reserve deputy sheriff. Mr. Lyons worked on the Search and Rescue team and in that capacity traveled all over the desert in San Bernardino County. He said he had been to the Camp Essex area but he had not seen any evidence of OE. He also could not remember hearing of any OE finds in the Essex area. He said that the Camp Essex area had been used as part of the Desert Strike Exercises in the 60s.

(5) Mr. John Bentley grew up in Essex, California, and said that he remembers seeing the tracers from Camp Essex during night firing. He said that he believed that the impact point was at the south east point of the Clipper Mountains. Mr. Bentley said that the firing point was two miles west on Essex Road on the left. He said there were mounds approximately two hundred yards off the road. He said he had not heard of any OE being found in the Camp Essex area, but he had heard stories of OE being found on the Clipper Mountains. He had not found anything other than small arms cartridge cases and bullets in the area.

(6) Mr. Bill Lewelling lives on Essex Road near the north west boundary of Camp Essex (See Document I-6). Mr. Lewelling said he had hiked up and down the front of the Clipper Mountains and had found ordnance fragments and small arms cartridge cases over a wide area. He had a small collection of fragments and cartridge cases he had found and he had collected fragments and mortar fins from 81mm mortars. The cartridge cases he had collected were 7.62 blanks with a 1960 headstamp. These cartridge cases are an indication that Desert Strike maneuvers were conducted in the Camp Essex area. Mr. Lewelling said the mortar fragments could be found localized in certain areas. He indicated that he thought that it was because they were shooting at targets in those locations.

(7) Mr. Butch Gates, who is now retired, had worked for the San Bernardino County Sheriff's Office from 1972 to recently (See Document I-7). During his career with the Sheriff's office, he was assigned to the Search and Rescue Team. This required Mr. Gates to travel extensively

throughout the former camps of the Desert Training Center (DTC). Mr. Gates indicated that when Interstate 40 was constructed in 1972, it cut through the northern portion of the former Camp Essex. He said that debris from the camp was found during excavation, but no OE was discovered. Mr. Gates said he recalled that some grenade pits had been found in sections 34 and 35 ,T8N, R16E. He said they were found in 1972 and were cleaned out by EOD. He could not pinpoint the exact spot, but he knew it was in that area because he had marked it on his map at the time. He did not know what type of OE was involved (practice or high explosive) since he did not actually visit the site. Mr. Gates said that Italian POWs were used to clear duds in late 1944. He mentioned a newspaper article that discussed the POWs (See Document H-1). He said that, a portion of Desert Strike had taken place in the former Camp Essex area. Mr. Gates also said that he was not aware of any live OE associated with exercise Desert Strike that was held in 1964. As far as he knew no high explosives were used during that exercise.

5. SITE ELIGIBILITY

a. **Confirmed Formerly Used Defense Sites**

Former land usage and ownership by the Department of Defense was previously confirmed for Camp Essex (See Document E-2). The Findings and Determination of Eligibility for this site, dated 11 February 1994, defined 30,536.5 acres as eligible under the DERP FUDS Program.

b. **Potential Formerly Used Defense Sites**

(1) A records review indicated that a portion of Area A, the Clipper Mountains Impact Area, is located outside the camp boundaries (See Documents F-12, G-1 & G-2, Plate 3 & Table 5-1). Area A has been subdivided into two areas, A-1 and A-2, in order to differentiate between the original FDE acreage and the additional acreage. Area A-2 is the additional acreage discovered during this ASR.

(2) Through a review of mapping and aerial photographs, it was determined that Area G, the Camp Essex Airstrip, is partially located outside the camp boundaries (See Plate 3, Photograph K-1 & Table 5-1). Area G has been subdivided into two areas, G-1 and G-2, in order to differentiate between the original FDE acreage and the additional acreage. Area G-2 is the additional acreage discovered during this ASR.

(3) As a result of interviews conducted during the SI an additional 640 acres were found to be associated with Camp Essex (See Documents I-2 & I-7, Plate 3 & Table 5-1). Area E has been identified as the possible site of grenade pits that were associated with Camp Essex.

(4) The additional acreage associated with Areas A, E and G increases the site to a total of 31,557.5 acres.

TABLE 5-1
Potential FUDS Sites

Area	Former Usage	Present Owner	Present Usage	Size/ Acres	Comments
A-2	Clipper Mountain Impact Area Additional Acreage	BLM	Public Land	160	See Plate 3
E	Grenade Pits East	BLM	Public Land	640	See Plate 3
G-2	Camp Essex Airstrip, Additional Acreage	BLM	Public Land	221	See Plate 3
			Approximate Additional Acreage	1021	
			Approximate Acreage (FDE)	30,536	
			Total Approximate Acreage	31,557	

6. VISUAL SITE INSPECTION

a. General Procedures and Safety

(1) On 7, 12, and 13 February 1996, members of the Site Investigation (SI) Team traveled to the former Camp Essex located at Essex, California. The primary purpose of the SI Team was to assess the OE presence or potential of the former Camp Essex. The inspection was limited to non-intrusive methods, e.g., subsurface sampling was not authorized nor performed.

(2) A site safety plan was developed and utilized by the SI team to assure safety from injury during the inspection of this site (See Reference B-3). A safety briefing which stressed safety and that OE should only be handled by military EOD personnel was conducted prior to the inspection for all personnel attending the on-site inspection. Site safety was maintained at all times by the inspection team during the on-site inspection.

(3) 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 of the ASR was made to ensure awareness of potential ordnance types and hazards.

(4) The site inspection consisted of a vehicle, and foot search of the site. The primary focus of the site visit was to locate evidence of OE surface contamination or a potential OE burial site.

b. **Area A: Clipper Mountains Impact Area**

(1) On 13 February 1996 a site inspection of the Clipper Mountains Impact Area was conducted (See Photograph J-1). This area is accessed by taking the Essex Road northwest from the town of Essex for approximately one and a half miles, turning left on the telephone pole access road. After approximately a mile, turn right in the direction of Hummingbird Spring. The eastern face of the Clipper Mountains is approximately 3 miles over an unimproved road, after the right turn. This is a very rough road and it requires a four wheel drive vehicle. There are no roads beyond this point except to Hummingbird Spring. Access to the mountains is by foot only. The majority of Area A is within the Clipper Mountain Wilderness Area, and vehicle access is not permitted except on established roads (See Document E-4 & Plate 1).

(2) The Clipper Mountains are very rocky, and because of the loose rock on the surface very difficult to climb (See Photographs J-2, J-3 & J-4). The SI team found that climbing the mountain face was unsafe due to the loose rocks and numerous snakes that were encountered. For these reasons the search was limited to the east face of the mountains.

(3) A search of the area located both fragments and 81mm mortar fins (See Photographs J-5 & J-6). All fragments appeared to be from mortars. Also found in the area were .50 caliber bullets (See Photograph J-7). There was no evidence of other types OE in this area. Since both the 33rd and 93rd Infantry Division had 105mm and 155mm batteries assigned, it is possible that these guns were also fired at the Clipper Mountains. These guns may have fired at targets higher and much further west into the mountains than the SI team could access. The location of the firing points could not be determined by review of historical documents or by interviews.

(4) Area A has been subdivided into Areas A-1 and A-2 based on additional acreage discovered during the ASR (See Paragraph 5b(1)).

c. **Area B: Small Arms Range South**

(1) Area B is located southwest of Essex Road (See Plate 3). There are three small arms ranges facing to the southwest. Each range is comprised of two large berms separated by approximately 100 yards (See Photographs J-8, J-9 & J-10).

(2) At each range, varying quantities of .30 caliber rifle, and .30 caliber carbine bullets and cartridge cases were found.

(3) These three ranges may be ranges 17, 18, and 19 that were indicated on Document F-11. Document F-11 indicated that 12 additional small arms ranges (ranges 5 through 16) were located adjacent to these 3 ranges. No evidence of these other ranges was found. The Clipper Valley Wash passes through this area and as a result during heavy rains this area is susceptible to flash flooding. This area has been subject to heavy erosion over the years and any evidence of these other temporary ranges has probably been obliterated.

d. **Area C: Small Arms Range North**

This area is located West of the Camp Essex Garrison Area as indicated on Document F-11 and Plate 3. The four ranges that were indicated as being in this area were 22 cal. rifle, .30 caliber carbine and 45 cal. pistol. This area has been heavily eroded and no evidence of a small arms range could be found. There were no cartridge cases or bullets found in this area.

e. **Area D: Grenade Pits West**

During a search of this area, the exact location of the "grenade pits" could not be determined. The "grenade pits" were mentioned in interviews with Mr. Howard and Mr. Gates (See Documents I-2 & I-7). The "grenade pits" are reported to be in sections 34 and 35 , of township T8N, range R16E. Area D is located in section 34. This area has been badly eroded and any surface features present during 1944 have probably been erased. The SI team was unable to locate the "grenade pits" or any ordnance related debris during the SI.

f. **Area E: Grenade Pits East**

Area E is located in Section 35 of township T8N, range R16E. As with Area D, this area has been badly eroded and any surface features present during 1944 have probably been erased. The SI team was unable to locate the "grenade" pits or any ordnance related debris during the SI.

g. **Area F: Camp Essex Garrison Area**

(1) The former Camp Essex Garrison Area is the portion of former Camp Essex where the camp headquarters was located and the troops were quartered (See Plate 3). The garrison area is accessible by dirt road from Goffs Road (See Photograph J-17). Interstate 40 cuts across the northern portion of this area and the Fenner Rest Stop is located on the site of the former Camp Essex (See Plate 3 & Photographs J-11 & J-12). The majority of the camp area is not accessible by vehicle and can only be inspected by foot.

(2) Woods and Watson Washes runs down the length of the Camp Essex Garrison Area (See Plates 1 & 3). The wash is dry most of the year, but during heavy rains this area is subject to flash flooding (See Photograph J-18). These occasional floods have resulted in heavy errosion throughout the camp area. Most of the streets in the main camp have been washed away and are no longer visible.

(3) During the SI, there was no evidence of OE found in the former Camp Essex Garrison Area. Scrap metal and debris from the camp were found, but nothing OE related was found.

h. **Area G Camp Essex Airstrip**

(1) The Camp Essex airstrip is located on the east side of the garrison area (See Plates 2 & 3, & Photographs J-13 & J-14). Area G has been subdivided into Areas G-1 and G-2 based on additional acreage discovered during the ASR (See Paragraph 5b(2)).

(2) The airstrip is still used occasionally by small aircraft. It has not been maintained and is overgrown in places. No evidence of an OE presence was found during the site inspection.

i. **Area H: Remaining Lands**

(1) This area includes the former Camp Clipper and all other land not identified as a specific area above.

(2) The former Camp Clipper area is in the best condition of the two camp areas. Many of the rock lined streets are still visible (See Photograph J-20). There is still a large amount of scrap metal and debris in the former Camp Clipper area. There was no OE or OE related debris found in this area. There is a 500,000 gallon concrete reservoir and an abandoned well located west of the former Camp Clipper (See Plate 2 & Photographs J-15, & J-16).

(3) The nine sections of land at the north end of the former Camp Essex are located on an alluvial fan (See Photograph J-19). This area has very soft and sandy soil. There are no roads in this area and passage even by four wheel drive vehicles would be extremely difficult. This area has been badly eroded and except for the two former camp areas there is no indications of past activities.

(4) The remainder of the lands have limited access by dirt roads and traveling down dry washes. In these areas there were no indications of past usage other than an occasional C rations can.

(5) No indication of an OE presence was found in any of these locations during the SI.

7. EVALUATION OF ORDNANCE HAZARDS

a. **General Procedures**

(1) Each area 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 and documented by local bomb squads, Army Explosive Ordnance Disposal Teams, newspaper articles, correspondence, current findings, etc. Direct witness of ordnance items consists of the inspection team directly locating ordnance items by visual inspection. Additional field data is not needed to identify a confirmed area.

(2) Potential ordnance contamination is based on a lack of confirmed ordnance. Potential ordnance contamination is inferred from records or indirect witness. Inference from historical records would include common practice in production, storage, usage, 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 areas.

(3) Uncontaminated ordnance areas are based on a lack of confirmed or potential ordnance evidence. All historical records, evidence, and present day site inspections do not indicate confirmed or potential ordnance contamination. There is no reasonable evidence, either direct or inferred, to suggest present day ordnance contamination. Additional field data is not needed to assess uncontaminated ordnance areas.

(4) No evidence was developed during the records search or the site visit that indicated that Chemical Warfare Material (CWM) was used or was present at the former Camp Essex. Other ASRs conducted within the former CAMMA have also failed to associate CWM with CAMMA. Document F-1 lists the chemical ammunition authorized in August of 1942. It consisted of smoke and various types of tear gas, with no mention of CWM.

(5) Although it is known that a portion of Operation Desert Strike took place in 1964, at the former Camp Essex, there is no indication that any high explosives were used during this exercise. No records located mentioned the use of high explosives during Desert Strike. The only physical evidence found at Camp Essex of Desert Strike was fired 7.62 mm blank cartridges. For the above reasons, it is believed that Operation Desert Strike has no bearing on the potential for OE contamination at this site.

b. **Area A: Clipper Mountains Impact Area**

(1) The boundary of Area A is based on the mortar fragments found during the SI, historical documents, and a real estate map that restricted usage to surface use only (See Documents F-6, F-7, F-12, G-2, and L-1). The direction of fire on to the Clipper Mountains is unknown. No maps were located that indicated the firing points or the boundary of the impact area.

(2) Due to the mortar fragments found in this area, the Clipper Mountains Impact Area is considered to have **confirmed ordnance contamination.**

c. **Area B: Small Arms Range South**

(1) Various small arms cartridge cases and bullets were found in this area. No other ordnance debris was found during the SI. The records reviewed that pertain to this area, indicate that it was used only as small arms range.

There were no complete rounds found and expended small arms is not considered to be OE.

(2) For the above reasons this area is considered to be **uncontaminated.**

d. **Area C: Small Arms Range North**

No physical evidence of the four small arms ranges located in this area was found during the SI. There was no evidence found that indicated that other than small arms was used in this area. Area C is considered to be **uncontaminated.**

e. **Area D: Grenade Pits West**

(1) The presence of "grenade pits" in this area is based on personal interviews (See Documents I-2 & I-7). There were no records located that confirmed their existence. Additionally, there was no physical evidence of an OE presence found during the SI.

(2) Based on information obtained from two personal interviews, Area D is considered to have **potential OE contamination.**

f. **Area E: Grenade Pits East**

(1) The presence of "grenade pits" in this area is based on personal interviews (See Documents I-2 & I-7). There were no records located that confirmed their existence. Additionally there was no physical evidence of an OE presence was found during the SI.

(2) Based on information obtained from two personal interviews, Area E is considered to have **potential OE contamination.**

g. **Area F: Camp Essex Garrison Area**

The site visit and records search showed no indication of an ordnance presence at the Camp Essex Garrison Area. Due to this fact and the former usage of Area F as a garrison area, Area F is considered to be **uncontaminated**

h. **Area G Camp Essex Airstrip**

The Camp Essex Airstrip was used as a landing strip for the divisions spotter planes and for routine flight operations. It was not used as a base for fighter or bomber

operations and as such an OE presence would be unlikely. No evidence of an OE presence was found during the site inspection, and there have been no reports of OE at the Camp Essex Airstrip since closure. For the above reasons Area G is considered to be **uncontaminated.**

i. **Area H: Remaining Lands**

(1) This area includes the former Camp Clipper and all other land not identified as a specific areas above. There were no records indicating an ordnance presence in this area. Additionally, there was no evidence of an ordnance presence found during the SI. Interstate 40 runs from east to west in this area. During its construction, debris from the camps was found but no OE was found (See Document I-7).

(2) As has been seen in other sites in the Desert Training Center (DTC), training and ordnance use was not limited to ranges only. It is possible that training with live ordnance may have occurred anywhere within the site boundary. Troops at the DTC were known to train extensively in land mine warfare. There may well have been practice land mine fields placed in this area.

(3) A more thorough investigation is required to determine the true status of ordnance contamination in Area H. For the above reasons Area H is considered to have **potential ordnance contamination.**

8. SITE ORDNANCE TECHNICAL DATA

a. **End Item Data**

Table 8-1, is a listing of ammunition and explosive fillers that may have been at Camp Essex. It is based on the standard armaments of a WWII era Infantry Division. Table 8-2, is a summary of site ordnance fillers that have been developed based on Table 8-1. These tables are based on review of historical documentation and specifications stated at appendix D-1 through D-7. Tables 8-1 and 8-2 do not indicate a current presence but is only a listing of ordnance that may have been present at the Camp Essex and is included for reference purposes only.

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

Item	Type/Model	Filler Weight
Cartridge, Ball .22 Cal, Long Rifle	None	40 gr lead bullet Brass or gilding metal cartridge case
Propellant powder		2.86 gr smokeless
*Small Arms Ammo .30 Cal	M2 Ball M2 AP	Lead Antimony Tungsten Chrome Steel with gilding metal jacket
	M1 Tracer T10 Tracer	Tracer Composition
	M1 Incendiary	Incendiary Composition
Propellant		Single base or Double-base (DB) powder
Small Arms Ammo .45 Cal M1911 Ball		230 gr lead core hardened with antimony covered by gilding metal jacket
Primer Composition	F.A. 70	0.37 gr
Propellant		5 gr smokeless powder
*Small Arms Ammo .50 Cal	M2 Ball M2 AP	Soft Steel Tungsten Chrome Steel with gilding metal jacket
	M1 Tracer M10 Tracer	Tracer Composition
	M17 Tracer M21 Tracer	Tracer Composition
	M1 Incendiary M23 Incendiary	Incendiary Mixture
Propelling Charge		Single base or Double- base (DB) powder
		Lead azide

TABLE 8-1
AMMUNITION USED/FOUND AND EXPLOSIVES/CHEMICAL FILLER
Continued

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

TABLE 8-1
AMMUNITION USED/FOUND AND EXPLOSIVES/CHEMICAL FILLER
Continued

Item	Type/Model	Filler Weight
Shell, Practice 60mm	M50A2	0.05# Black Powder
Fuze, PD	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, PD	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
AMMUNITION USED/FOUND AND EXPLOSIVES/CHEMICAL FILLER
Continued

Item	Type/Model	Filler Weight
*Shell, H.E.	M43A1	1.22# TNT
81mm		
Fuze, PD	M52	
Detonator		Priming Mixture (Mercury Fulminate)
		Lead Azide
Booster		Tetryl
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	M57	4.04# White Phosphorus
81mm		
Fuze, PD	M52	See above
Ignition Cartridge	M3 (old)	See above
	M6 (new)	See above
Percussion Primer	M34	See above
Propellant Increments	M2	820 gr DB powder
Shell, H.E.	M56	4.31# TNT
81mm		
Fuze, PD	M53	
Primer		UNKNOWN
Delay Pellet		Black Powder
Relay		Lead Azide
Detonator		Tetryl
		Lead Azide
Lead Charge		Tetryl
Booster		Tetryl
Fuze, TSQ	M77	
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)	See above
	M6 (new)	See above
Propellant Increments	M2	820 gr DB powder

TABLE 8-1
AMMUNITION USED/FOUND AND EXPLOSIVES/CHEMICAL FILLER
Continued

Item	Type/Model	Filler Weight
Shell, H.E.,	M1	4.8# TNT
105mm, semi-fixed		
Fuze, PD	M48A2	
Detonator		
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		3.04# FNH powder, M1
Primer	M1B1A2	See above
Shell, H.E.,	M38A1	3.63# TNT or 50-50 amatol
105mm, fixed		
Fuze, MT	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	M38A1	8 oz. black powder
105mm, fixed		
Fuze, MT	M43	
Primer, percussion		UNKNOWN
Pellet		Compressed black powder

TABLE 8-1
AMMUNITION USED/FOUND AND EXPLOSIVES/CHEMICAL FILLER
Continued

Item	Type/Model	Filler Weight
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, BD	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
Shell, H.E. 155mm	M107	15.13# TNT
Fuze, PD	M51A4	
Detonator		
Superquick		Lead azide
Delay		Compressed black powder pellet
Relay		Lead azide pellet
Booster	M21A4	
Detonator		Lead azide over tetryl
Closing cup		Tetryl
Booster pellet		Tetryl
Propelling Charges	M3	5.94# FNH powder, M1
Primer, percussion	Mk. IIA4	Priming composition 17 gr black powder
Rocket, HEAT 2.36-inch	M6, M6A1, M6A3	0.5# 50/50 Pentolite
Fuze	None	
Detonator		Priming Mixture Lead Azide Tetryl

TABLE 8-1
AMMUNITION USED/FOUND AND EXPLOSIVES/CHEMICAL FILLER
Continued

Item	Type/Model	Filler Weight
Booster		Tetryl
Propellant		Sticks of DB powder
Squib		Black powder
Rocket, HEAT 2.36-inch	M6A3D	0.5# 50/50 Pentolite
Fuze	None	See above
Propellant		T1E1 salted powder
Rocket, HEAT 2.36-inch	M6A3F	0.5# 50/50 Pentolite
Fuze	None	See above
Propellant		M7 (T4) powder
Rocket, HEAT 2.36-inch	M6A4	0.5# 50/50 Pentolite
Fuze, BD	M400	
Propellant		M7 (T4) powder
Rocket, HEAT 2.36-inch	M6A5	0.5# 50/50 Pentolite
Fuze, BD	M401	
Propellant		M7 (T4) powder
Rocket, Practice 2.36-inch	M7, M7A1, M7A3, M7A4	INERT
Propellant		Sticks of DB powder
Squib		Black powder
Rocket, Practice 2.36-inch	M7A5	INERT
Propellant		T1E1 salted powder
Rocket, Practice 2.36-inch	M7A6	INERT
Propellant		M7 (T4) powder
Rocket, WP Smoke Phosphorus 2.36-inch	M10	0.9# White
Fuze	None	
Detonator		Priming Mixture
		Lead Azide
		Tetryl
Detonator-Burster		UNKNOWN
Propellant		Sticks of DB powder
Squib		Black powder

TABLE 8-1
AMMUNITION USED/FOUND AND EXPLOSIVES/CHEMICAL FILLER
Continued

Item	Type/Model	Filler Weight
Rocket, WP Smoke	M10A3	0.9# White Phosphorus
2.36-inch		
Fuze, BD	M401	
Propellant		M7 powder
Rocket, HC Smoke	T27E1	1# HC
2.36-inch		
Fuze	None	
Detonator		Priming Mixture Lead Azide Tetryl
Igniter		UNKNOWN
Propellant		Sticks of DB powder
Squib		Black powder
Rocket, Incendiary	T31	1.1# Thermate
2.36-inch		
Fuze	None	
Detonator		Priming Mixture Lead Azide Tetryl
Igniter		UNKNOWN
Propellant		Sticks of DB powder
Squib		Black powder
Grenade, Hand,	MK II	Bursting Charge
Fragmentation		0.74oz E.C. Blank
Powder		
Fuze, detonating	M10	
Primer	MK V	0.4 gr Primer Mixture
Delay - Time Fuse		2" Black Powder train
Detonator		7 gr loose Black Powder
Grenade, Hand,	MK IIIA2	Bursting Charge
Offensive		.5# Pressed TNT
Fuze, detonating	M6A2	UNKNOWN
Primer		UNKNOWN
Detonator		UNKNOWN
Grenade, Hand,	M7	CN
CN Tear		
Fuze, igniting	M200A1	Similar to M10 above
Grenade, HC Smoke	M8	HC
Fuze, igniting	M200A1	See above

TABLE 8-1
AMMUNITION USED/FOUND AND EXPLOSIVES/CHEMICAL FILLER
Continued

Item	Type/Model	Filler Weight
Grenade, Colored Smoke	M16	UNKNOWN
Fuze	None	See above
Grenade, Colored Smoke	M18	.72# Smoke Mixture
Fuze, igniting	M200A1	See above
Grenade, Red Smoke	AN-M3	Red Smoke Mixture
Fuze, igniting	M200A1	See above
Grenade, White Phosphorus, Smoke	M15	0.9# White Phosphorus
Fuze, detonating	M6A3	See above
Grenade, Rifle, Phosphorus	M19	8.5 oz. White
WP Smoke		
Detonator	None	UNKNOWN
Grenade, Rifle, colored	M22	6.5 oz. standard
Colored Smoke		smoke fillings
Detonator	None	UNKNOWN
Grenade, Rifle, Antitank	M9A1	4 oz. 50/50 Pentolite
Fuze	None	Priming Mixture Lead Azide Tetryl
Booster		Tetryl
Grenade, Rifle, HC	None	10.75 oz. HC
Grenade, Rifle, Practice	M11A3	INERT
Smokepot	M1	9.5 to 11 pounds, HC

* Indicates Items verified on site

b. Chemical Data of Ordnance Fillers

TABLE 8-2
CHEMICAL DATA OF ORDNANCE FILLERS

Filler	Synonym(s)	Chemical Formula
Amatol (50-50) or (80-20)		
Ammonium Nitrate		NH_4NO_3
TNT	2,4,6-trinitrotoluene	$CH_3C_6H_2(NO_2)_3$
Ammonium Nitrate		NH_4NO_3
Black Powder		
74% Potassium Nitrate	Saltpeter; Niter	KNO_3
11% Sulfur		S
16% Charcoal		C
Charcoal		C
CN	Chloroacetophenone	$C_6H_5CO-CH_2Cl$
Dinitrotoluene	DNT	$C_6H_3CH_3(NO_2)_2$
Double-base Powder	Ballistite	
60% Nitrocellulose	Guncotton; Pyroxylin	$C_6H_8O_5(NO_2)_3]_n$
39% Nitroglycerin		$CH_2NO_3CHNO_3CH_2NO$
0.75% Diphenylamine	Stabilizer DPA	$(C_6H_5)_2NH$
E. C. Blank Powder	(single-based compound)	
80.4% Nitrocellulose	Guncotton; Pyroxylin	$[C_6H_8O_5(NO_2)_3]_n$
8% Potassium Nitrate	Saltpeter	KNO_3
8% Barium Nitrate		$Ba(NO_3)_2$
3% Starch		
0.6% Diphenylamine	Stabilizer DPA	$(C_6H_5)_2NH$
Explosive D	Ammonium Picrate; Ammonium Carbazoate;	$C_6H_2(NO_2)_3ONH_4$
FNH Powder, Type II		
Nitrocellulose	Guncotton; Pyroxylin	$[C_6H_8O_5(NO_2)_3]_n$
Dibutylphthalate	Gelling agent	$C_6H_4(CO_2C_4H_9)_2$
Dinitrotoluene	DNT	$C_6H_3CH_3(NO_2)_2$
Diphenylamine	Stabilizer DPA	$(C_6H_5)_2NH$
Guncotton	(see nitrocellulose)	
13% nitrogen		N_2
Hexachlorethane-Zinc	HC	$Zn+C_2Cl_6$
Lead Azide	Azide	$Pb(N_3)_2$
Mercury Fulminate	Mercuric Cyanate	$Hg(CNO)_2$

TABLE 8-2
CHEMICAL DATA OF ORDNANCE FILLERS
Continued

Filler	Synonym(s)	Chemical Formula
Nitrocellulose	Guncotton; Pyroxylin Nitrocotton; Cellulose Nitrate	$[C_6H_8O_5(NO_2)_3]_n$
Nitroglycerin		$CH_2NO_3CHNO_3CH_2NO$
Pentolite (50/50)		
TNT	2,4,6-trinitrotoluene	$CH_3C_6H_2(NO_2)_3$
PETN		$C(CH_2ONO_2)_4$
PETN	Pentaerythrite Tetranitrate; Pentaerythritol Tetranitrate	$C(CH_2ONO_2)_4$
Potassium Chlorate		$KClO_3$
Potassium Nitrate	Saltpeter; Niter	KNO_3
RDX	Cyclonite, Hexagen	$C_3H_6N_6O_6$
Red Phosphorus		P
Smokeless Powder	(see nitrocellulose)	
Flashless-nonhygroscopic	(FNH)	
Nonhygroscopic	(NH)	
Sulfur		S
Tetryl $(NO_2)_3C_6H_2N(NO_2)CH_3$	Trinitrophenyl-methylnitramine	
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	$CH_3C_6H_2(NO_2)_3$
White Phosphorus		P

9. OTHER SITE ENVIRONMENTAL HAZARDS

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

No potential Hazardous, Toxic, and Radiological Waste projects were found during this Archive Search Report.

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

No potential Building Demolition/Debris Removal projects were found during this Archive Search Report.

ORDNANCE AND EXPLOSIVES ARCHIVES SEARCH REPORT FOR FORMER CAMP ESSEX ESSEX, CALIFORNIA PROJECT NUMBER J09CA027801

APPENDIX A

REFERENCE SOURCES

REFERENCE SOURCES

The following organizations and personnel are acknowledged for their support

Organization	Name	Telephone	Nature of 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 Obtained
(DDESB) Historical Accident Data Base USATCES, SIOAC-ESM Savanna, IL 61074-9639	Computer Search	(815) 273-8730	No Information Obtained
(DLSIE) Defense Logistic Studies Information Exchange US Army Logistics Management College Ft. Lee, VA 23801	Computer Search	(804) 734-4007	No Information Obtained
(DTIC) Defense Technical Information Center Cameron Station Alexandria, VA 22304-6145	Computer Search	(202) 274-7633	No Information Obtained
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

REFERENCE SOURCES (Continued)

The following organizations and personnel are acknowledged for their support

Organization	Name	Telephone	Nature of Support
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
U.S. Military History Institute Photo Archives Carlisle Barracks, Bldg. Carlisle, PA 17013	Mr. Mike Winey	(717) 245-3434	No Information Obtained
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. ARMY			
Army Safety Management Information System Ft. Rucker, AL 36322	Computer Search	(205) 255-6485	No Information Obtained
AMCCOM Historical Office AMSIO-EAH, Bldg. 390 Rock Island Arsenal Rock Island, IL	Mr. Tom Slattery	(309) 794-1450	No Information Obtained

REFERENCE SOURCES (Continued)

The following organizations and personnel are acknowledged for their support

Organization	Name	Telephone	Nature of Support
Explosive Ordnance Disposal 259th EOD Fort Irwin Barstow, CA	SPC Knoelesard CPT Tooller	(619) 380-4092	Information
Rock Island Arsenal Museum Rock Island Arsenal Rock Island, IL	Mr. Chris Leinicke	(309) 794-3518	Technical Manuals
Patton's 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	Information
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 Obtained
USACE, Los Angeles District 300 North Los Angeles St. Room 6003 Los Angeles, CA 90024	Ms. Debrah Castens	(213) 894-2865	Information

REFERENCE SOURCES (Continued)

The following organizations and personnel are acknowledged for their support

Organization	Name	Telephone	Nature of Support
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	Delores Henderson	(213) 894-5583	Real Estate Documents
USACE, Office of History 7701 Telegraph Road Alexandria, VA 22310-3865	Contractor	(703) 355-3558	See Appendix B Section II Parts A & B
USACE, Sacramento District 1325 J Street Sacramento, CA 95814-2922	Mr. Marvin Fisher	(916) 557-6800	No Information Obtained
USACE, Sacramento District 1325 J Street Sacramento, CA 95814-2922	Mr. Dan Fodrini	(916) 557-6857	No Information Obtained
USACE, St. Louis District ATTN: CELMS-PD 1222 Spruce St. St. Louis, MO 63103	Mr. Jim Lubbert Mr. Hank Counts	(314) 331-8840 (314) 331-8762	Historical Documents

REFERENCE SOURCES (Continued)

The following organizations and personnel are acknowledged for their support

Organization	Name	Telephone	Nature of Support
U.S. AIR FORCE			
Environmental Technical Applications Center 151 Patton Ave., Rm. 210 Ashville, NC 28801	Ms. Janet Wall	(704) 271-4404	Climatological Data
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 Yard Washington, DC 20374	Contractor	(202) 433-3171	See Appendix B Section II Parts A & 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 MCAGCC 29 Palms, CA	GYSGT Wheeler	(619) 830-7215	Information

REFERENCE SOURCES (Continued)

The following organizations and personnel are acknowledged for their support

Organization	Name	Telephone	Nature of Support
DEPARTMENT OF AGRICULTURE			
Natural Resources Conservation Service 200 East Murphy St. Blythe, CA 92226	Mr. Raul Alvardo	(619) 922-3446	No Information Obtained
Natural Resources Conservation Service 2121 C 2nd St. Davis, CA 95616	Mr. Donald Storm	(916) 757-8270	No Information Obtained
Natural Resources Conservation Service P.O. Box 788115 Twenty-Nine Palms, CA 92278	Mr. John Rule	(619) 830-7011	No Information Obtained
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 Dr. Redland, CA 92374	Mr. Jim Earson	(909) 799-7407	No Information Obtained

REFERENCE SOURCES (Continued)

The following organizations and personnel are acknowledged for their support

Organization	Name	Telephone	Nature of Support
DEPARTMENT OF INTERIOR			
Bureau of Land Management 101 West Spikes Road Needles, CA 92363	Mr. Bill Wiley	(619) 326-3896	See Interview I-1
Bureau of Land Management 6221 Box Springs Blvd. CA Desert District Riverside, CA 92507-0714	Mr. Larry Foreman Ms. Rolla Queen Mr. Manuela Johnson Mr. John Keyes	(909) 697-5221 (909) 697-5386 (909) 697-5220 (909) 697-5383	Endangered Species Archeological Info. Maps Information
Bureau of Land Management Palm Springs Resource Center 63500 Garnet Ave. North Palm Springs, CA	Mr. Mike Mitchell	(619) 251-4800	Archeological Info.
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

REFERENCE SOURCES (Continued)

The following organizations and personnel are acknowledged for their support

Organization	Name	Telephone	Nature of Support
Geological Survey Reston, VA 22092	Dave Keys	(703) 648-5956	Information
DEPARTMENT OF COMMERCE			
NOAA National Climatic Data Cntr. Federal Bldg. Ashville, NC 28801	Ms. Yolanda Goosch Mr. Sam McCowan	(704) 271-4272	Climatological Data
NATIONAL ARCHIVES REFERENCE 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

REFERENCE SOURCES (Continued)

The following organizations and personnel are acknowledged for their support

Organization	Name	Telephone	Nature of Support
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
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
National Personnel Records Center, 9700 Page Ave. St. Louis, MO	Mr. Bill Siebert	(314) 538-4085	See Appendix B Section III Parts A & B

REFERENCE SOURCES (Continued)

The following organizations and personnel are acknowledged for their support

Organization	Name	Telephone	Nature of Support
Library of Congress Washington, DC 20536	Contractor	(202) 707-5522	See Appendix B Section II Parts A & B
Smithsonian Institution Historical Research Division Washington, DC 20560	Contractor	(202) 357-3133	See Appendix B Section II Parts A & B
NATIONAL ARCHIVES REGIONAL			
NARA, Federal Records Center 1000 Commodore Drive San Bruno, CA 94066	Ms. Barbara Bepler	(415) 876-9001	See Appendix B Section III Parts A & B
NARA, Federal Records Center 2400 Alvia Road Laguna Niguel, CA 92607	Mr. Greg Pearman	(714) 643-4220	See Appendix B Section III Parts A & B
NARA, Pacific Sierra Region 1000 Commodore Drive San Bruno, CA 94066	Ms. Lisa Miller	(415) 876-9009	See Appendix B Section III Parts A & B
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

REFERENCE SOURCES (Continued)

The following organizations and personnel are acknowledged for their support

Organization	Name	Telephone	Nature of Support
STATE AGENCIES			
STATE OF CALIFORNIA			
California State Archives 1020 East O Street Sacramento, CA 92415-0795	Melody	(916) 653-2246	Reference Leads
California State Library 914 Capital Mall Library & Courts Bldg. Sacramento, CA 94237-0001	Mr. John Gonzales Mr. Brent Murphy	(916) 654-0176 (916) 654-0069	Information Information
California State University San Bernardino Library 5500 University PKWY San Bernardino, CA	Reference Librarian	(909) 880-5084	No Information Obtained
SHPO, San Bernardino Archeological Info Center 2024 Orange Tree Lane Redland, CA 92374	Ms. Robin Laska	(909) 792-1497	Archeological Information.
University of California Riverside Library 900 University Drive Riverside, CA 92521	Ms. Gladys Murphy	(909) 792-3221	Reference Leads

REFERENCE SOURCES (Continued)

The following organizations and personnel are acknowledged for their support

Organization	Name	Telephone	Nature of Support
COUNTY AGENCIES			
San Bernardino County Archives 777 East Railto Ave San Bernardino, CA 92415	Mr. Jim Hoffer	(909) 387-2232	Information
Metropolitan Water District of Southern California P.O. Box 38 Parker Dam, CA 92267	Mr. Allen Prestion	(619) 663-3521	No Information Obtained
San Bernardino County Assessor's Office 172 West 3rd St. San Bernardino, CA 92415	Ms. Maureen Swanson	(909) 387-8307	Plat maps/owners
San Bernardino County Bomb Squad 655 East 3rd Street San Bernardino, CA, 92415	Mr. Bill Abernathy Mr. Harry Hatch	(909) 387-3607	Information
San Bernardino County Library 104 West 4th Street San Bernardino, CA 92415	Phil	(909) 387-5718	Information

REFERENCE SOURCES (Continued)

The following organizations and personnel are acknowledged for their support

Organization	Name	Telephone	Nature of Support
San Bernardino County Museum 2024 Orange Tree Lane Redlands, CA 92374	Ms. Robin Laska Ms. Noella Benvenuti	(909) 798-8570	Photos
San Bernardino County Recorder 222 W Hospitality Lane San Bernardino, CA 92415	Sharon	(909) 387-8306	Ownership Information
San Bernardino County Sheriff's Department Colorado River Station 1111 Bailey Ave. Needles, CA 92363	Mr. Bob Lyons Mr. Jerry Lyons	(619) 326-9200	See Interview I-3 See Interview I-4
CITY OF SAN BERNARDINO			
San Bernardino Public Library 555 West 6th Street San Bernardino, CA	Mr. Chris Shovey	(909) 381-8208	New Articles
City of Needles			
Needles Public Library 111 Bailey Needles, CA 92363	Ms. Barbara Guhin	(619) 326-9255	Information/photos

REFERENCE SOURCES (Continued)

The following organizations and personnel are acknowledged for their support

Organization	Name	Telephone	Nature of Support
OTHER SOURCES			
Northern Illinois Library System 4034 East State Street Rockford, IL 61108	Computer Search	(815) 229-0330	No Information Obtained
Knight-Ridder Information Inc. (DIALOG) 2440 El Camino Real Mountain View, CA 94040	Computer Search	(800) 334-2564	No Information Obtained
SIRSI Corporation 689 Discovery Dr. Huntsville, Al 35806	Computer Search	(205) 922-9820	No Information Obtained
Council on America's Past 518 Why Worry Lane Phoenix, AZ 85021	Heliogram Publication	(800) 396-4693	Information
On-line Computer Library Center 6565 Franz Road Dublin, Oh 43017-3395	Computer Search	(800) 848-5873	No Information Obtained
Patton Museum No. 2 Chiriaco Summit, CA 92201	Mr. John Hoffman	(619) 227-3483	Information/photos

REFERENCE SOURCES (Continued)

The following organizations and personnel are acknowledged for their support

Organization	Name	Telephone	Nature of Support
SITE RELATED PERSONNEL			
Jack Howard U.S. Post Office Essex, CA	Private Individual	619-733-4259	Interview I-2
John Bentley Essex, CA	Private Individual	619-733-4401	Interview I-5
Bill Lewelling P.O. Box 2 Essex, CA	Private Individual	Not Available	Interview I-6
Dennis G. Casebier P.O. Box 7 Essex, CA 92332-0007	Author/Historian	(619) 733-4482	Information
Fred Croziern 250 Paseo De Granda Redondo Beach, CA 90277	Historian	(310) 378-8875	No Information Obtained
John Lynch 518 Why Worry Lane Phoenix, AZ 85012	Historian/Author	(602) 249-3974	Information

REFERENCE SOURCES (Continued)

The following organizations and personnel are acknowledged for their support

Organization	Name	Telephone	Nature of Support
Justin Ruhge P.O. Box 2216 Goleta, CA 93118	Author/Historian	(805) 737-9536	Information
Mark Wetmore Rt. 4 Box 318 Needles, CA 92363	Local Military Historian	(619) 326-2546	Information
Walter Acuna Needles, CA	Retired San Bernardino County Sheriff	(619) 326-1255	Information
Butch Gates P.O. Box 1609 Idaho Falls, ID	Former Search & Rescue San Bernardino Co. Sheriff	(208) 529-5313	See Interview I-7

ORDNANCE AND EXPLOSIVES ARCHIVES SEARCH REPORT FOR FORMER CAMP ESSEX ESSEX, CALIFORNIA PROJECT NUMBER J09CA027801

APPENDIX B

REFERENCES AND ABSTRACTS

APPENDIX B

REFERENCES AND ABSTRACTS

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APPENDIX B

SECTION I: BIBLIOGRAPHY

B-1 Army Regulation (AR) 200-1, Environmental Quality, Environmental Protection and Enhancement, DA, 23 April 1990 (not enclosed in this ASR)

B-2 Management Plan for ORDNANCE AND EXPLOSIVES (OEW) Mandatory Center of Expertise (MCX) and Design Center, CEHND 1105-3-9, U.S. Army Corps of Engineers, Huntsville Division, 10 August 1992.

B-3 Site Safety Plan for OEW Investigations, U.S. Army Corps of Engineers, Rock Island District, dated 25 June 92, W/ Appendix A-123.

B-4 Inventory Project Report, DERP FUDS, OEW Site No. J09CA027801, dated 29 July 1992.

B-5 "Essex Relives Military Days or World War II", Needles Desert Star, dated 7 May 1964. (H-1)

B-6 Letter, Headquarters Army Ground Forces, "Chemical Ammunition for Desert Training Center", dated 4 August 1942. (F-1)

B-7 93rd Infantry Division, "History of the 93rd Infantry Division", dated unknown. (F-2)

B-8 Letter, Headquarters California-Arizona Maneuver Area, "Target Ranges", dated 8 February 1944. (F-3)

B-9 Letter, Headquarters Army Service Forces, "Evacuation of the California-Arizona Maneuver Area, dated 17 February 1944. (F-4)

B-10 93rd Infantry Division, "Summary of Operations in World War II, dated March 1946. (F-5)

B-11 Letter, Department of the Interior, "Notation of Tract Book and other records of possible danger because of Army use of certain lands", dated 1949. (F-6)

B-12 Affidavit, State of California, County of Los Angeles, dated 13 September 1954. (F-7)

B-13 Jack Mitchell, Caveman, 1964. (F-8)

B-14 TM 9-1904, Ammunition Inspection Guide, War Department, dated 2 March 1944. (D-1, D-3, D-6 & Table 8-1)

B-15 Letter, Department of Interior, "Species List for Former Camps Essex, Iron Mountain, Ibis, and Needles Division, San Bernardino and Riverside Counties", California, dated 22 November 1995. (F-9)

B-16 Letter, Archaeological Information Center, "California Archaeological Inventory", dated 5 October 1995. (F-10)

B-17 TM 750-5-15, Chemical Weapons and Defense Equipment, Department of the Army, February 1967. (D-7)

B-18 TM 43-0001-29, Army Ammunition Data Sheets for Grenades, Department of the Army, 15 December 1992. (D-1)

B-19 TM 9-1904, Ammunition Inspection Guide, War Department, 2 March 1944. (D-1, D-2, D-5, D-6)

B-20 TM 9-1900, Ammunition General, Department of Army, June 1956. (D-2, D-4)

B-21 TM 9-1901, Artillery Ammunition, War Department, 29 June 1944. (D-2)

B-22 Shelby L Stanton, World War II Order of Battle, Galahad Books, 1984.

B-23 BLM Wilderness Areas, National Parks and Preserve, U.S. Department of the Interior, Bureau of Land Management, October 1994.

B-24 Camp Essex Description and Map, Facilities and Firing Ranges, National Archives, date unknown. (F-11)

B-25 Plat map of San Bernardino County, dated 14 April 1924. (G-1)

B-26 Plat map from the Bureau of Land Management, dated 23 July 1995. (G-2)

B-27 Letter, U.S. Army Corps of Engineers, Los Angeles District, "CAMA Dedudding", dated 21 September 1956. (F-12)

SECTION II
NATIONAL CAPITOL REGION ARCHIVES FINDINGS
PART A
POSITIVE FINDINGS

CAMP ESSEX, CA

CENTER OF MILITARY HISTORY
WASHINGTON, DC

Historical Research Branch

228.01 HRC 331, Posts - Desert Training Center
Background Data and Map, Desert Training Center, California - Arizona Maneuver Area, 1942-1944

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

Posts, Camps, and Stations - WWII, Vol. V (E-G)
Data Sheet, Camp Essex, 1943

NARA - ARCHIVES I
WASHINGTON, DC

RG 337 (Records of the Headquarters, Army Ground Forces)

Entry 29C: General Staff, G-3 Section, Training Group, Troop Training Division, Maneuvers, Special Projects & Ammo Branch, Desert Training Center, 1942-1947
Box 112
Short History and Description, California - Arizona Maneuver Area, 1942-1943

Entry 29C: General Staff, G-3 Section, Training Group, Troop Training Division, Maneuvers, Special Projects and Ammo Branch, Desert Training Center, 1942-1947
Box 112
Rolled Map, Desert Training Center, 14 June 1943

Entry 55A: Project Decimal Files, 1942-1947
Box 1272
Photographs, Camp Essex Facilities

Entry 55A: Project Decimal Files, 1942-1947
Box 1272
Map, Camp Essex, Desert Training Center

Entry 55A: Project Decimal Files, 1942-1947
Box 1272
Description and Map, Camp Essex Facilities, Including Firing Range

Entry 55A: Project Decimal Files, 1942-1947
Box 1272
Rolled Map, California - Arizona Maneuver Area Firing and Bombing Ranges, 1942-1943

Entry 55A: Project Decimal Files, 1942-1947
Box 1275
Correspondence Relative to Training and Test Ammunition, Desert Training Center, May 1944

Entry 55A: Project Decimal Files, 1942-1947
Box 1277
Memorandum Relative to Discontinuation of California - Arizona Maneuver Area, 24 February 1944

NARA - ARCHIVES II
COLLEGE PARK, MD

RG 77 (Records of the Office of the Chief of Engineers)

Entry 1011: Security Classified Subject Files, 1940-1945
Box 218
Memorandum Relative to Status of Construction, California - Arizona Maneuver Area, October 1943

Entry 1011: Security Classified Subject Files, 1940-1945
Box 218
Memorandum Relative to Evacuation of California - Arizona Maneuver Area, 17 February 1944

Entry 1011: Security Classified Subject Files, 1940-1945
Box 218

Memorandum Relative to Evacuation of California - Arizona Maneuver Area, 7 March 1944

Entry 1011: Security Classified Subject Files, 1940-1945
Box 218

Memorandum Relative to Surplus Installations, California - Arizona Maneuver Area, April 1944

Entry 1011: Security Classified Subject Files, 1940-1945
Box 219

Memorandum Relative to Use of Portion of California - Arizona Maneuver Area for Bombing and Gunnery Range, 20 May 1944

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

Entry: Historical Unit, Medical Detachment - Records Used for Preparing World War II Era Medical Histories
Box 365

Plan for Chemical Warfare Service Evacuation, California - Arizona Maneuver Area, 7 February 1944

Entry: Historical Unit, Medical Detachment - Records Used for Preparing World War II Era Medical Histories
Box 365

Memorandum Relative to Closure of Target Ranges, Camp Essex, 8 February 1944

Entry: Historical Unit, Medical Detachment - Records Used for Preparing World War II Era Medical Histories
Box 365

Ordnance Material Evacuation Plan, California - Arizona Maneuver Area, 9 February 1944

RG 160 (Records of the Army Service Forces)

Entry 25: Director of Plans and Operations, Liaison and Control Branch, Subject File, 1942-1944
Box 4

Letter Relative to Land Acquisition, California - Arizona Maneuver Area, 9 March 1942

NARA - CARTOGRAPHIC BRANCH
COLLEGE PARK, MD

AMS

V-V95-M
Rolled Map - Desert Training Center Maneuver Area

NARA - MOTION PICTURE BRANCH
COLLEGE PARK, MD

RG 111

File ADC/111LC,
Box 177, Desert
Catalog Cards, Films, "Desert Training Center, IX Corps Maneuvers"

File ADC/111LC
Box 259, Maneuvers
Catalog Cards, Films, "Desert Training Center, IX Corps Maneuvers"

NARA - STILL PICTURES BRANCH
COLLEGE PARK, MD

RG 111-SC

Box 22
Signal Corps (6) Photos, Desert Training Center, Including Training Facilities, Roads, and Utilities, 1942

NARA - SUITLAND REFERENCE BRANCH
SUITLAND, MD

RG 175 (Records of the Chemical Warfare Service)

Entry 1: Central Correspondence, 1936-1942
Box 274
Memorandum Relative to Chemical Ammunition Requirements, Desert Training Center, August 1, 1942

RG 407 (Records of the Adjutant General's Office, 1917-)

Entry 427: World War II Operations Reports
Box 13696
93rd Infantry Division Training, California - Arizona Maneuver Area, 1943

Entry 427: World War II Operations Reports
Box 13697
Training Operations, 93rd Infantry Division, Camp Essex, California - Arizona Maneuver Area, 1943

USACE OFFICE OF HISTORY
ALEXANDRIA, VA

HQ Heliogram, Council on Abandoned Military Posts, No. 166, Nov-Dec 1984

Article
California - Arizona Maneuver Area, 1984

Military Files

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

I-10A-8
Bureau of Land Management Interpretive Plan, Including Site History, for the Former Desert Training Center - California - Arizona Maneuver Area, 1986

Real Estate Records

Realty Control File Summary
Camp Essex

SECTION II
NATIONAL CAITOL REGION ARCHIVES FINDINGS
PART B
NEGATIVE FINDINGS

CAMP ESSEX, CA

LIBRARY OF CONGRESS
WASHINGTON, DC

Geography and Map Division

NARA - ARCHIVES I
WASHINGTON, DC

RG 49 (Records of the Bureau of Land Management)
- Entry 1515: Central Files (Division of Technical Programs - Range Staff), 1937-1955
- Entry 1519: Records Relating to District Grazing Boundaries, 1935-1961

RG 69 (Records of the Work Progress Administration)
- Entry: Central Files, 1935-1944
- Entry: Civil Works Administration Central Files, 1931-1954
- Entry: General Subject Series, National Defense Program, 1940-1946
- Entry: FERA, New General Subject Series
- Entry: WPA General Series, National Defense, 1940-1942

RG 135 (Records of the Public Works Administration)
- Entry: Project Files

RG 153 (Records of the Office of the Judge Advocate General)
- Entry: Reservations File, 1800-1950

RG 162 (Records of the Federal Works Agency)
- Entry 7: Central Decimal Files, 1941-1949
- Entry 21: Records of the War Public Works Program, 1941-1949

RG 407 (Records of the Adjutant General's Office, 1917-)
- Entry: Army - AG Decimal File, 1940-1945

NARA - ARCHIVES II
COLLEGE PARK, MD

RG 22 (Records of the Bureau of Fish and Wildlife)
- Entry 243: Cooperative Agreements with the Corps of Engineers, 1943-1962

RG 30 (Records of the Bureau of Public Roads)
Entry 54: Correspondence, 1941-1945

RG 48 (Records of the Department of the Interior)
Entry 749B: Central Classified Files, 1937-1953

RG 57 (Records of US Geological Survey)
Entry 27: Correspondence and Related Records, 1906-1948

RG 70 (Records of the Bureau of Mines)
Entry 66: General Classified Files: General Correspondence, 1926-1952

RG 77 (Records of the Office of the Chief of Engineers)
Accession 51A-277: District Files, 1945
Accession 52A-40: Division Files, 1945
Accession 53A-132: Miscellaneous Files, 1945
Accession 58A-1076: Real Estate Files
Entry 18: Correspondence, 1789-1942
Entry 106B: General Correspondence, 1918-1945
Entry 1019: General Correspondence with Service Commands, 1918-1949

RG 92 (Records of the Office of the Quartermaster General)
Entry 1890: General Correspondence (Subject File), 1936-1961
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 the 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

SMITHSONIAN NATIONAL AIR AND SPACE MUSEUM
WASHINGTON, DC

Collections Specified in Project Work Plan

WASHINGTON NATIONAL RECORDS CENTER
SUITLAND, MD

RG 77 (Records of the Office of the Chief of Engineers)
- Accession A52-117
- Accession A52-259
- Accession A52-434
- Accession 68A-1932

SECTION III
REGIONAL NATIONAL ARCHIVES FINDINGS
PART A
POSITIVE FINDINGS

CAMP ESSEX
AKA
CAMP CLIPPER

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 B
NEGATIVE FINDINGS

CAMP ESSEX
AKA
CAMP CLIPPER

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

ORDNANCE AND EXPLOSIVES ARCHIVES SEARCH REPORT FOR FORMER CAMP ESSEX ESSEX, CALIFORNIA PROJECT NUMBER J09CA027801

APPENDIX C

GLOSSARY

APPENDIX C

GLOSSARY

AA	Anti Aircraft
AR	Army Regulation
BD	Base Detonating
BD/DR	Building Demolition/Debris Removal
BLM	Bureau of Land Management
CAMA	California-Arizona Maneuver Area
CEHND	U.S. Army Engineer, Huntsville Division
CENCD	U.S. Army Engineer, North Central Division
CENCR	U.S. Army Engineer, Rock Island District
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CWM	Chemical Warfare Material
CWO	Chief Warrant Officer
DA	Department of Army
DERA	Defense Environmental Restoration Account
DERP	Defense Environmental Restoration Program
DOD	Department of Defense
DOI	Department of Interior
DTC	Desert Training Center
EOD	Explosive Ordnance Disposal
EPA	Environmental Protection Agency
FDE	Findings and Determination of Eligibility
FNH	Flashless-nonhygroscopic
FS	Feasibility Study
FUDS	Formerly Used Defense Site(s)
GSA	General Services Administration
HTRW	Hazardous, Toxic and Radiological Waste
INPR	Inventory Project Report
ID	Infantry Division
IRP	Installation Restoration Program
M	Model Number
MM or mm	Millimeter
MT	Mechanical Time
MWSF	Mixed Waste Storage Facility
NARA	National Archives Records Administration
NC	Nitrocellulose
NH	Nonhygroscopic
NPS	National Parks Service
OE	Ordnance and Explosive
PA	Preliminary Assessment
PD	Point Detonating
PN	Project Number

POW	Prisoner of War
PPM	Parts Per Million
PRP	Privately Responsible Party
PTT	Powder Train Time
RA	Remedial Action
RAC	Risk Assessment Code
RD	Remedial Design
RD/RA	Remedial Design/Remedial Action
RG	Record Group
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
SARA	Superfund Amendments and Reauthorization Act
SI	Site Investigation or Site Inspection
TD	Tank Destroyer
TM	Technical Manual
USA	U.S. Army
USACE	U.S. Army Corps of Engineers
USACERL	U.S. Army Construction Engineering Research Laboratory
USADACS	U.S. Army Defense Ammunition Center and School
USATCES	U.S. Army Technical Center for Explosives Safety
UXO	Unexploded Ordnance
WAA	War Assets Administration
WD	War Department
WPA	Works Progress Administration

ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR
FORMER CAMP ESSEX
ESSEX, CALIFORNIA
PROJECT NUMBER J09CA027801

APPENDIX D

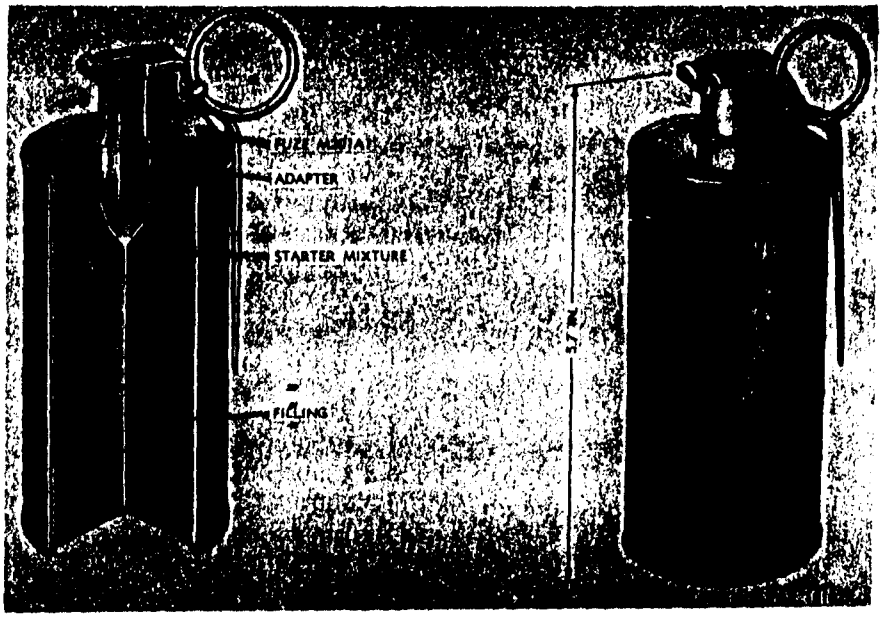
TEXTS/MANUALS

APPENDIX D

TEXT/MANUALS

TABLE OF CONTENTS

GRENADE, HAND, SMOKE, HC, AN-M8



Type Classification:

Std. LCC-A, AMCTC 3408

Use:

The HC Smoke Hand Grenade AN-M8 is a burning type grenade used to generate white smoke for screening activities of small units. It is also used for ground-to-air signaling.

Description:

The grenade body is a cylinder of thin sheet metal. It is filled with HC smoke mixture topped with a starter mixture directly under the fuze opening. The duration of smoke screen or signal is 105 to 150 seconds.

Hand grenade fuze M201A1 is a pyrotechnic delay-igniting fuze. The body contains a primer, first-fire mixture, pyrotechnic delay column, and ignition mixture. Assembled to the body are a striker, striker spring, safety lever and safety pin with pull ring. The split end of the safety pin has an angular spread.

Safety clips are not required with these grenades.

Tabulated Data:

Grenade (with fuze):

Model(s)	AN-M8
Body	Sheet metal
Weight	24 oz
Length	5.7 in.
Diameter	2.5 in.
Color	Light green w/black markings
Packing	1 per container; 16 per packing box

Filler:

Type	HC (type C)
Weight	19 oz

Fuze:

Model(s)	M201A1
Type	Pyrotechnic delay-igniting
Primer	M39A1
Ignition mixture	Iron oxide, titanium, zirconium
Delay time	0.7-2 sec
Weight	1.5 oz
Length	3.9 in.
Color (safety lever)	Gray or olive drab w/ black markings
Packing	Not separately issued
Safety device	Pull ring and safety pin

Federal Supply Code:

NSN	1330-00-219-8511
DODAC	1330-G930

See DOD Consolidated Ammunition Catalog for additional information.

Unit of Issue:

Each Grenade

Packed	1 per container; 16 per packing box

Packing Data:

Packing box:
Weight (with contents)-- 41.0 lb
Dimensions ---------- 14.0 in. x 14.0 in. x 8.0 in.
Cube ----------0.90 cu ft

Shipping and Storage Data:

Hazard class/division and storage compatability group ---------- 1.3 G
UNO serial number ------ 0016
DOT class ---------- Class C explosive
DOT marking ---------- SMOKE GRENADES, HANDLE CAREFULLY - KEEP FIRE AWAY

Functioning:

Removal of the safety pin permits release of the safety lever. When the safety lever is released, it is forced away from the grenade body by a striker acting under the force of a striker spring. The striker rotates on its own axis and strikes the percussion primer. The primer initiates the first fire mixture. The fuze delay element, ignition mixture, and grenade starter mixture and filler are initiated in turn by the preceding component. The pressure sensitive tape is blown off the emission holes and smoke is emitted for 105 to 150 seconds.

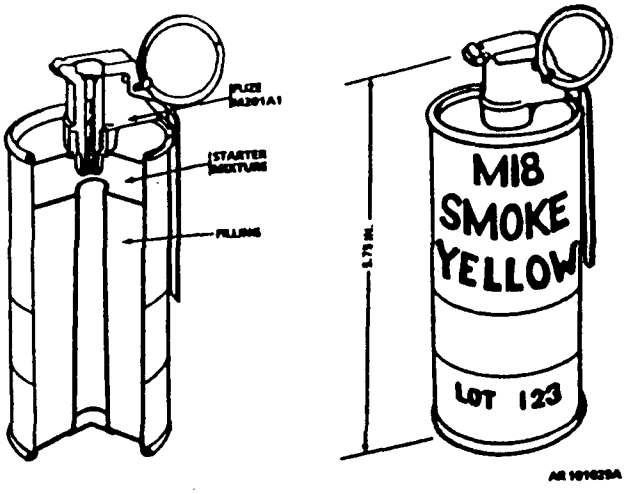
References:

TM 9-1330-200
TM 9-1330-200-12
TM 9-1330-200-34
FM 23-30
DOD Consolidated Ammo Catalog

Drawings:

Assembly ----------	13-19-32
Fuze ----------	13-10-22
Packing (inner) ----------	13-9-44
Packing (outer) ----------	13-19-83

GRENADE, HAND: SMOKE, M18



Type Classification:

Std. LCC-A, AMCTC 3450

Use:

Colored Smoke Hand Grenade M18 is used for ground-to-air or ground-to-ground signaling.

Description:

The grenades may be filled with any one of four smoke colors: red, green, yellow or violet. Each grenade will emit smoke for 50 to 90 seconds. The grenade body is of thin sheet metal and is filled with red, green, yellow or violet smoke composition. The filler is topped with a starter mixture.

The hand grenade fuze M201A1 is a pyrotechnic delay-igniting fuze. The body contains a primer, first-fire mixture, pyrotechnic delay column, and ignition mixture. Assembled to the body are a striker, striker spring, safety lever, and safety pin with pull ring. The split end of the safety pin has an angular spread.

Safety clips are not required with these grenades.

Tabulated Data:

Grenade (with fuze):

Model(s)	M18
Body	Sheet metal
Weight	19 oz
Length	5.75 in.
Diameter	2.5 in.
Color	Light green w/black markings
Packing	1 per container; 16 per packing box.

Filler:

Type	Smoke composition
Weight	11-1/2 oz

Fuze:

Model(s)	M201A1
Type	Pyrotechnic delay-igniting
Primer	M39A1
Ignition mixture	Iron oxide, titanium, zirconium
Delay time	0.7 - 2 sec
Weight	1.5 oz
Length	3.9 in.
Color	Gray or olive drab w/ black markings
Packing	Not separately issued
Safety device	Pull ring and safety pin

Federal Supply Code:

NSN's:

Red	1330-00-289-6852
Green	1330-00-289-6851
Yellow	1330-00-289-6854
Violet	1330-00-289-6853

DODAC's:

Red	1330-G950
Green	1330-G940
Yellow	1330-G945
Violet	1330-G955

Unit of Issue:

Each
Grenades packed ---------- 1 per container; 16 per packing box.

Packing Data:

Packing box:
Weight (with contents)- 34.0 lb
Dimensions ---------- 15.5 in. x 14.0 in. x 9.0 in.
Cube ----------1.1 cu ft

Shipping and Storage Data:

Hazard class/division and storage compatibility group -----	1.4 G
UNO serial number -	0303
DOT Class ----------	Class C explosive
DOT marking --------	SMOKE GRENADES, HANDLE CAREFULLY - KEEP FIRE AWAY

Functioning:

Removal of the safety pin permits release of the safety lever. When the safety lever is released, it is forced away from the grenade body by a striker acting under the force of a striker spring. The striker rotates on its own axis and strikes the percussion primer. The primer initiates the first fire mixture. The fuze delay element, ignition mixture, and grenade starter mixture and filler are initiated in turn by the preceding component. The pressure sensitive tape is blown off the emmision holes and the colored smoke emits from these holes.

References:

TM 9-1330-200
TM 9-1330-200-12
TM 9-1330-200-34
FM 23-30

Drawings:

Assembly ----------	13-19-37
Fuze ----------	13-10-22
Packing (inner) --------	13-9-44
Packing (outer) --------	13-19-83

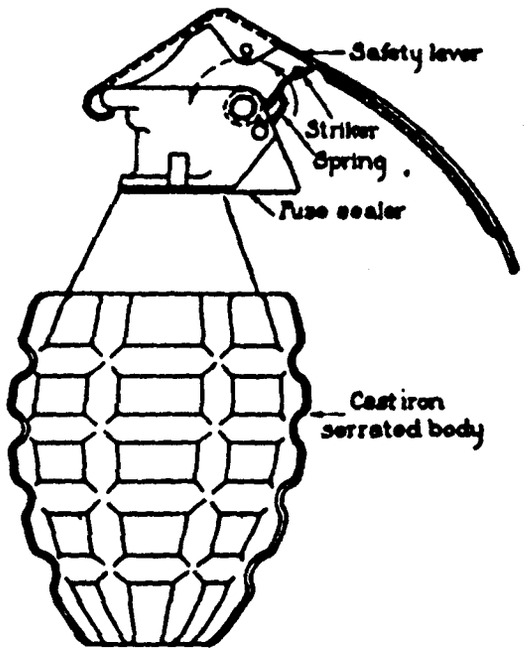


Figure 91 — GRENADE, Hand, Fragmentation, Mk. II

The igniting charge consists of 7 grains of loose black powder contained in a copper case (4, fig. 90). The open end of the case extends inside the stem of the fuze body and is crimped in place, the joint being waterproofed by an application of green colored N.R.C. compound. The primer end of the fuze is protected against the entrance of moisture by a tin foil disc (14, fig. 90) which is sealed in place with shellac varnish. Other components of the fuze are the fuze sealer

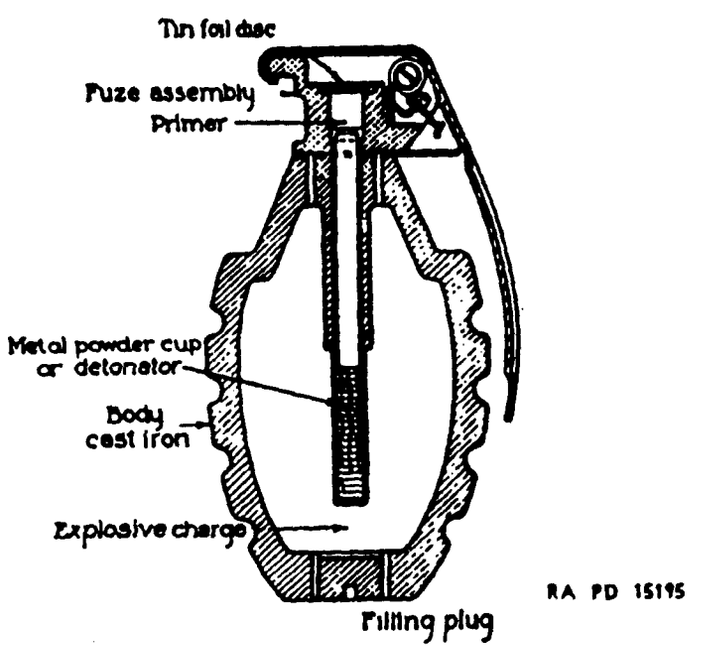


Figure 92 — Grenade — Section View

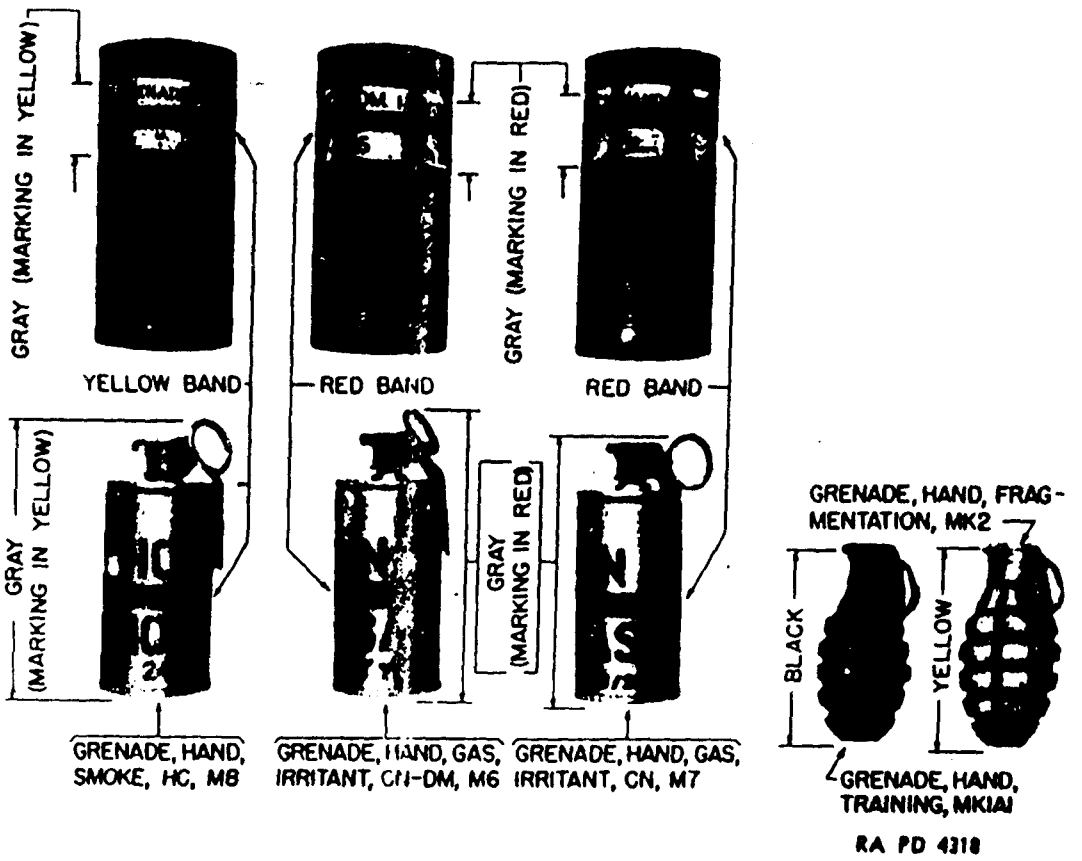
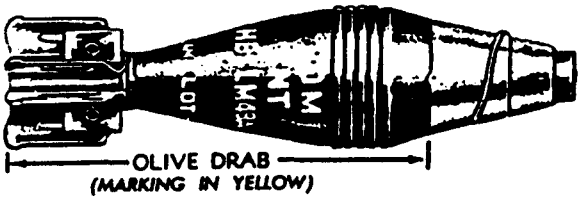


Figure 89 — Hand Grenades

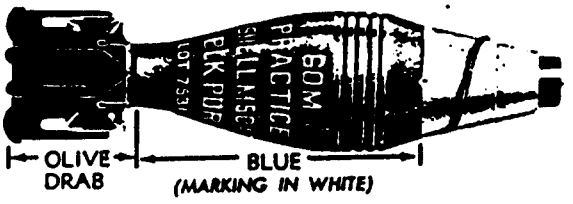
Body. The Fragmentation Hand Grenade Body Mk. II, is made of cast iron. It is about the size and shape of a large lemon and is designed to fit comfortably in the hand. The outside surface is deeply serrated, horizontally and vertically, to assist in forming uniform fragments of effective size when the grenade explodes. The opening in the top is threaded for assembly of the fuze. The body weighs approximately 1 pound, empty.

Bursting Charge. The explosive filler or bursting charge consists of 0.74 ounce of E. C. Blank smokeless powder. This is a commercial type of semicolloided nitrocellulose, granulated into small shot-like grains. It is generally pink or yellow in color and is associated with the words "blank fire" in that its principal use has been for loading blank ammunition for small arms.

FUZE, Igniting, Hand Grenade, M10. This is a mechanical device assembled to the grenade body which functions the grenade at the time and under the circumstances desired. (For details, see figure 90.) The fuze body (16, fig. 90) is threaded and screwed into the opening in the top of the grenade body. A lever (10, fig. 90) covers the top of the fuze body, one end being bent over to hook under a protruding lip. The other end of lever extends downward and is curved to follow the contour of the grenade body. A cotter pin (11, fig. 90) with a ring (20, fig. 90) in the eye extends through

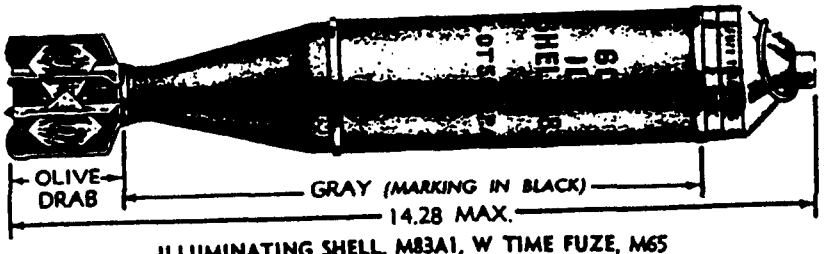


HE SHELL, M49A2, W/PD FUZE, M52

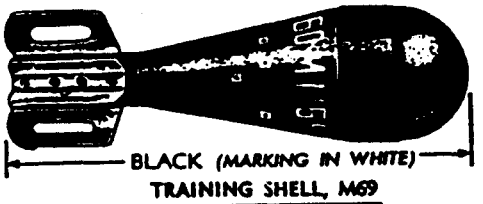


PRACTICE SHELL, M50A2, W PD FUZE, M52

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



ILLUMINATING SHELL, M83A1, W TIME FUZE, M65



TRAINING SHELL, M69

RA PD 644488

Figure 50 — 60-mm Mortar Ammunition

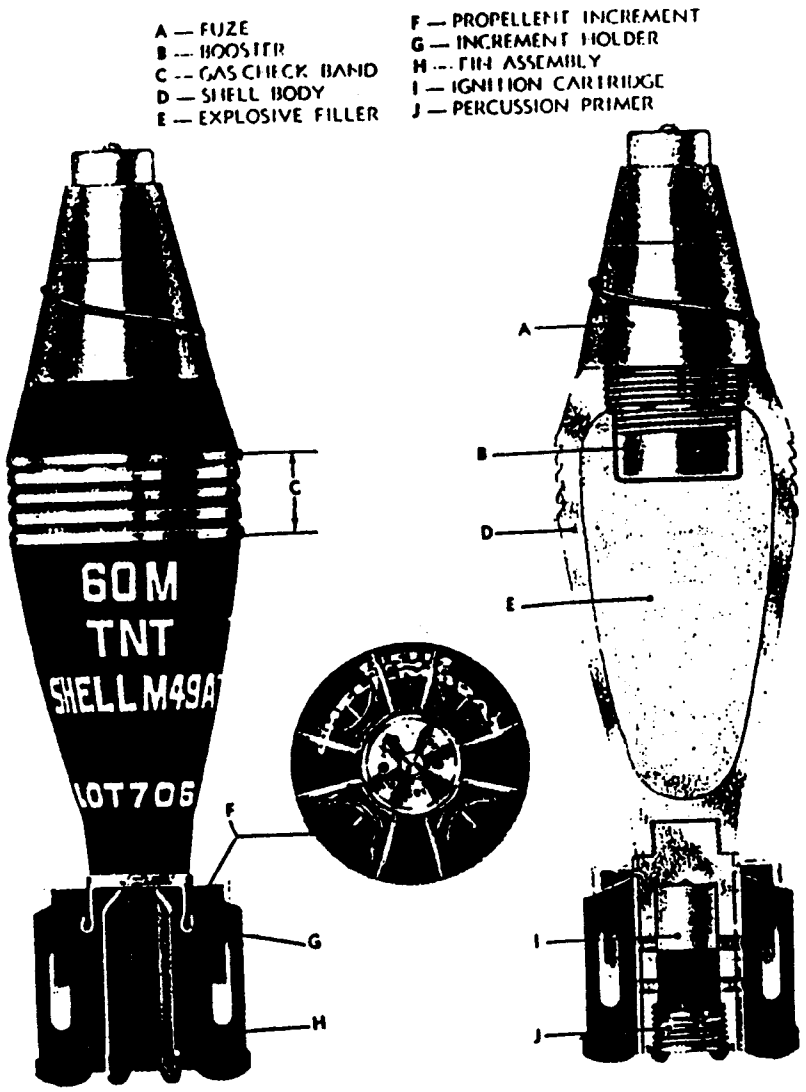


Figure — SHELL, H.E., M49A2, w/FUZE, P.D., M52, 60-mm Mortars, M1 and M2, Complete Round

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 ⅝ 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:

	Muzzle Velocity		Maximum Range	
	w/M52 or M52B2	w/M52B1	w/M52 or M52B2	w/M52B1
Charge 0 (Ignition Cartridge M5A1 only)	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	1,630

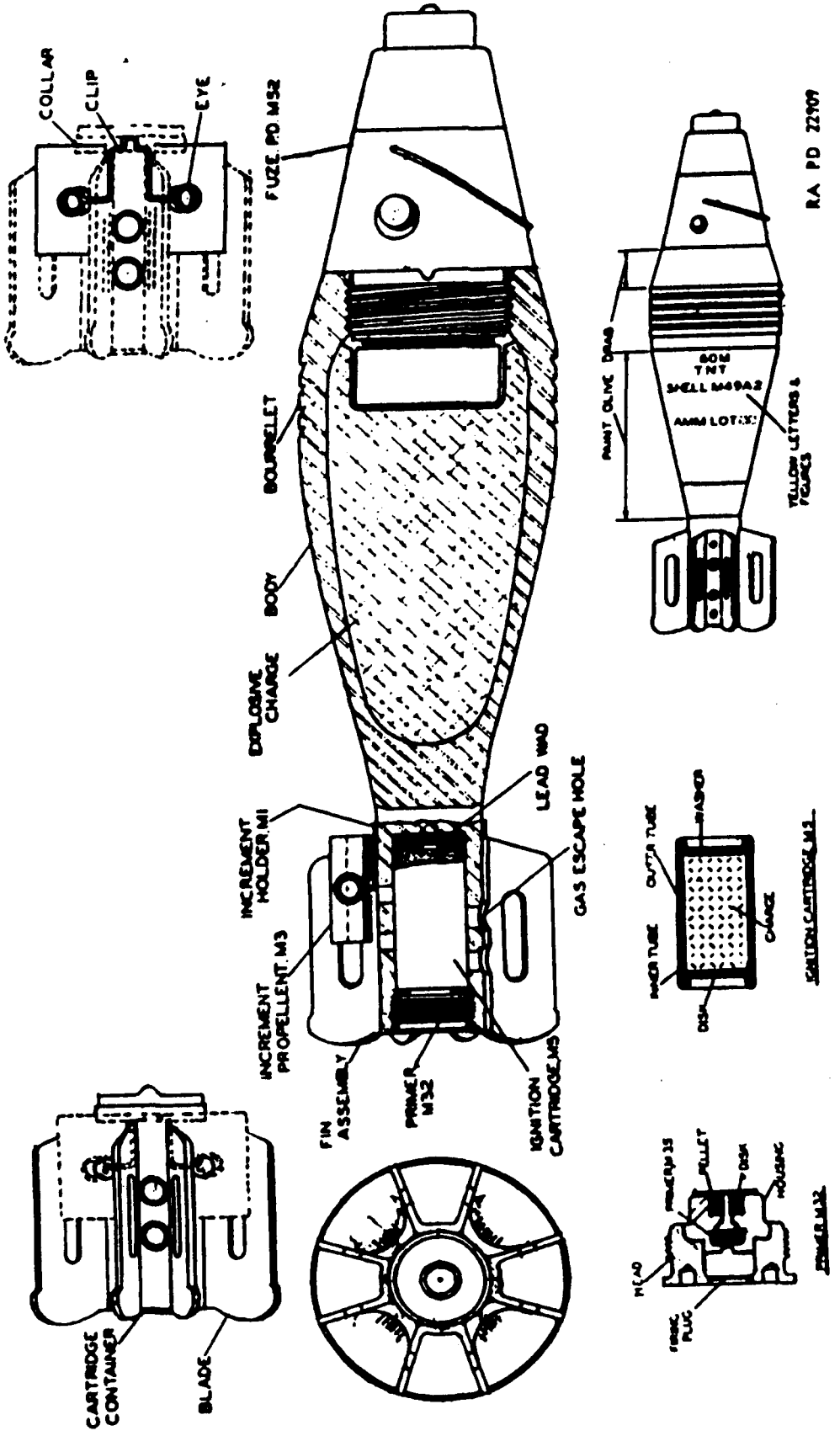
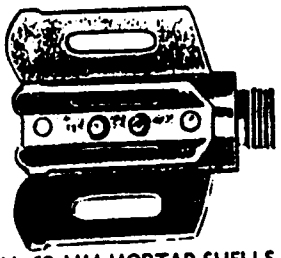


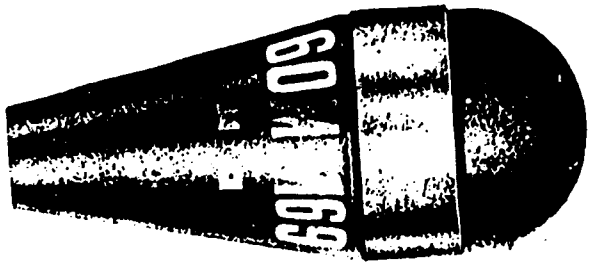
Figure 121 — SHELL, H.E., M49A2

CARTRIDGE, IGNITION, M4
OR

PRIMER, PERCUSSION, M32
AND
CARTRIDGE, IGNITION, M5A1

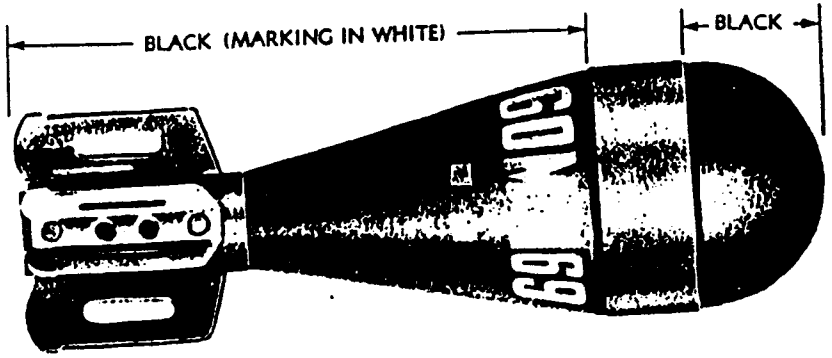


FIN, 60-MM MORTAR SHELLS, M49A2, M50A2, AND M69



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

A—COMPONENTS



B—ASSEMBLED

RA PD 26817

Figure 1—SHELL, Training, M69, 60-mm Mortars, M1 and M2

D-2

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

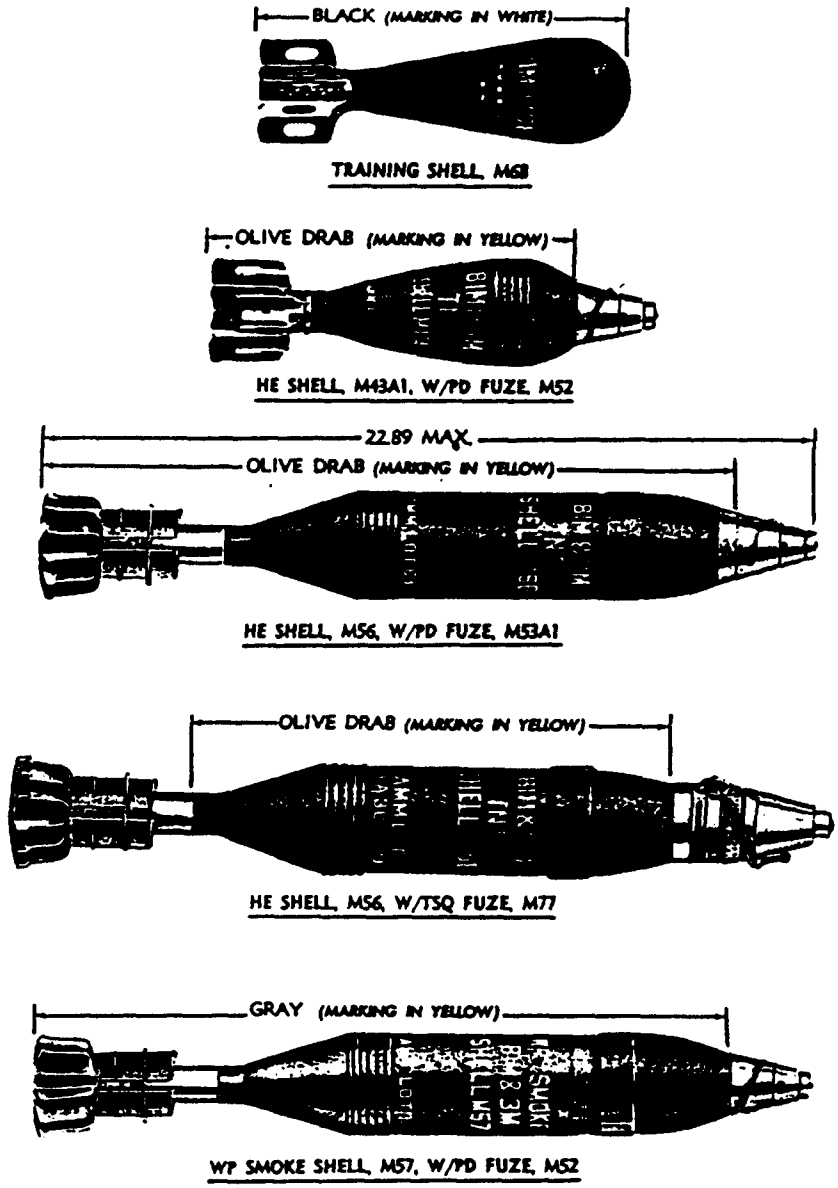


Figure 51 — 81-mm Mortar Ammunition

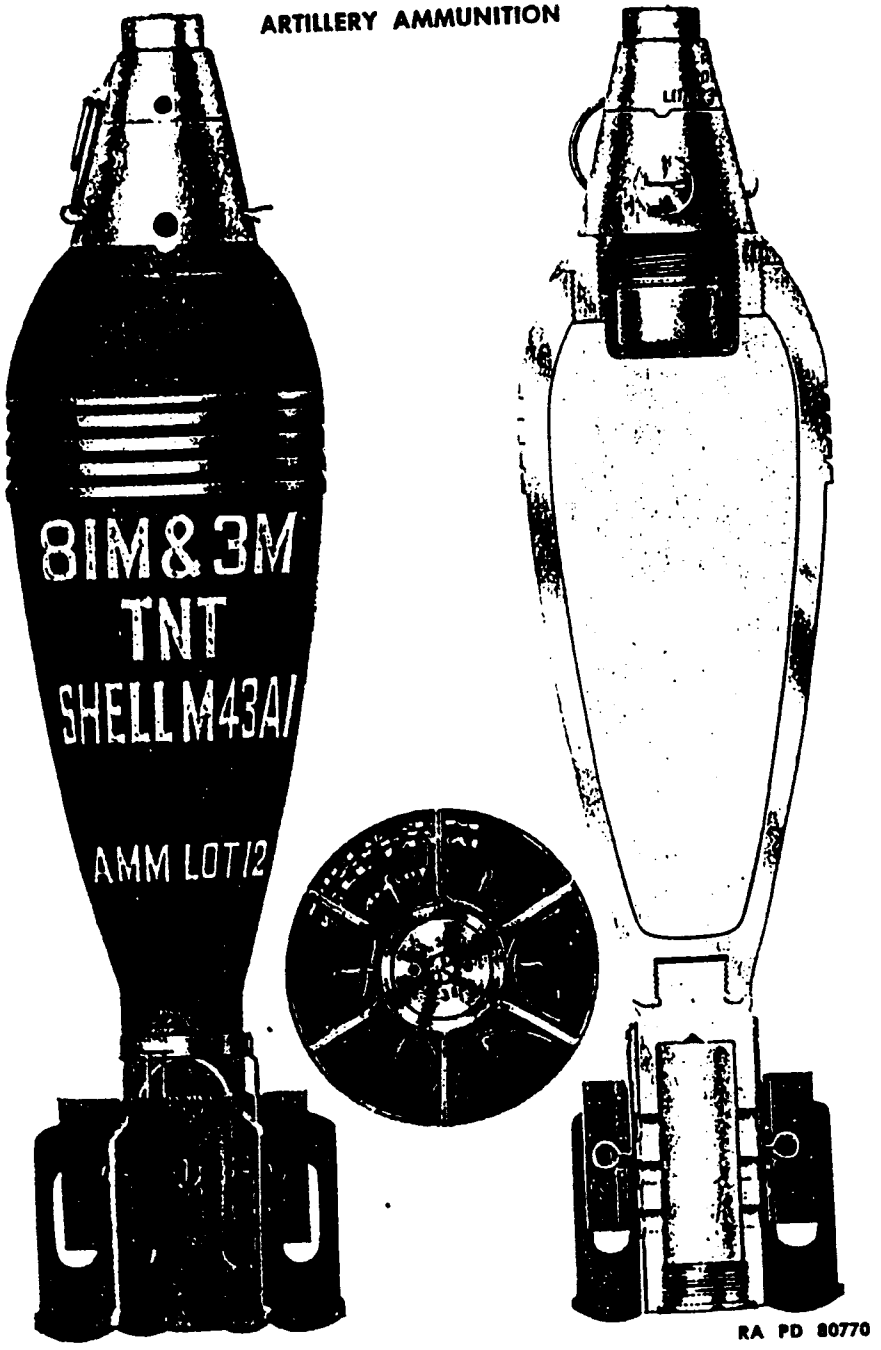


Figure 99 — SHELL, H.E., M43A1, w/FUZE, P.D., M52, 81-mm Mortar, Complete Round

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 Propellent 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 propellent increments and facilitate burning and disintegration of the cartridge and case. The propellent 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

as the SHELL, H.E., M43, is standard for issue (S).

Shell b 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 propellent 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.

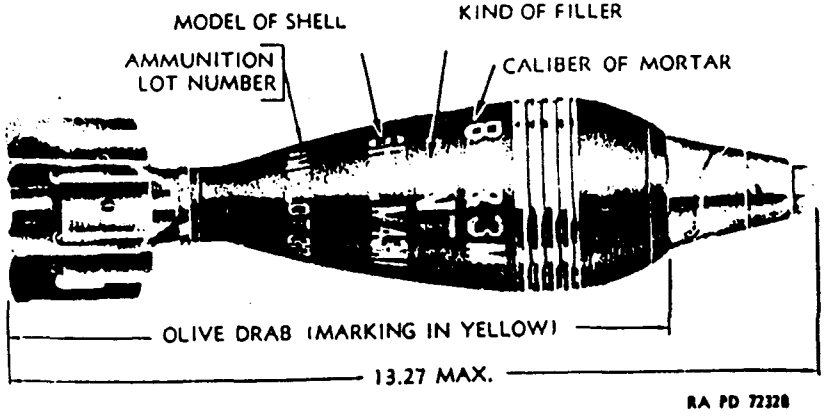


Figure 110a — SHELL, H.E., M43A1, 81-mm Mortar

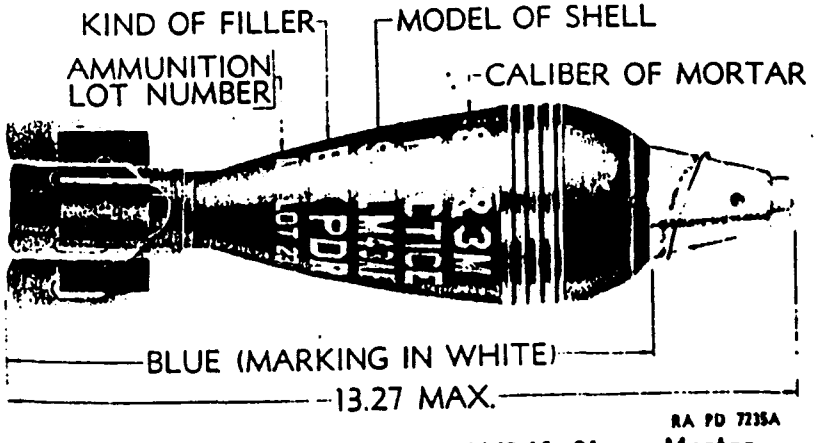


Figure 110b — SHELL, Practice, M43A1, 81-mm Mortar

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.

Propellent increments. The Propellent 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.

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, propellent 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 nonpersistant screening smoke filler. Shell loaded with H are painted a blue-gray base color with green stencil and two green bands indicate a persistant toxic filler.

Packing is same as for M56 High-explosive Shell.

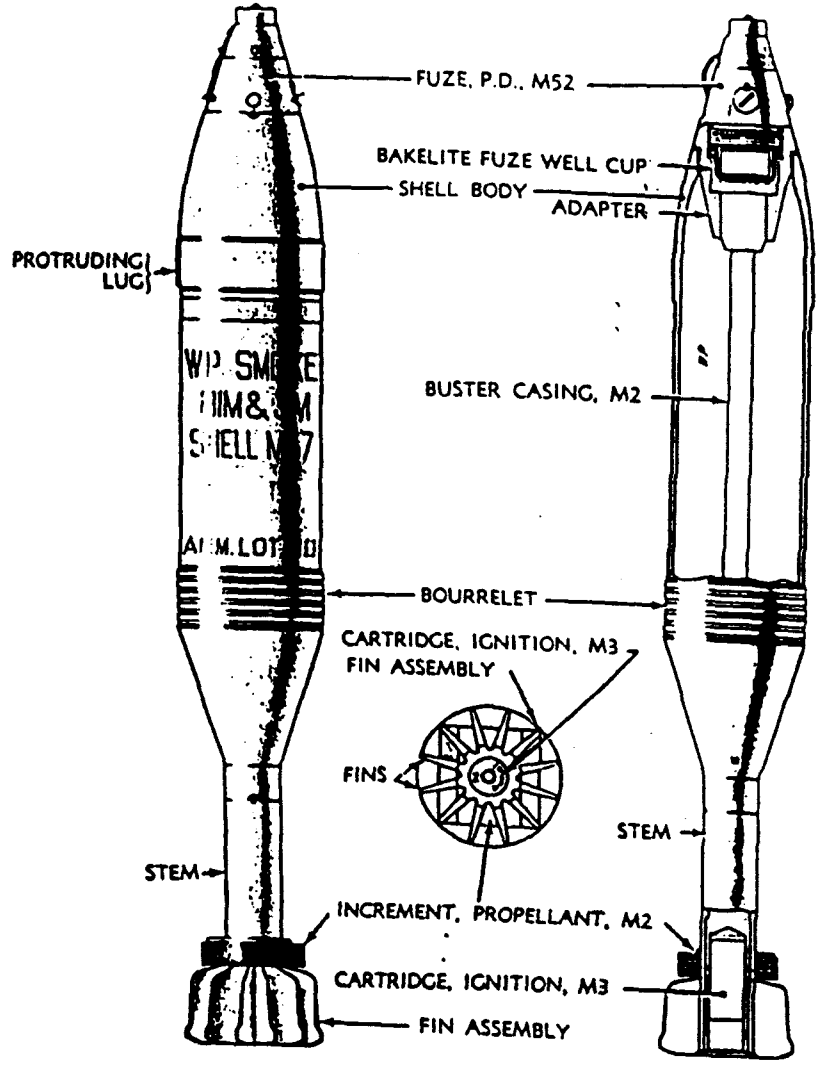


Figure 114 — SHELL, Chemical, M57, 81-mm Mortar

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

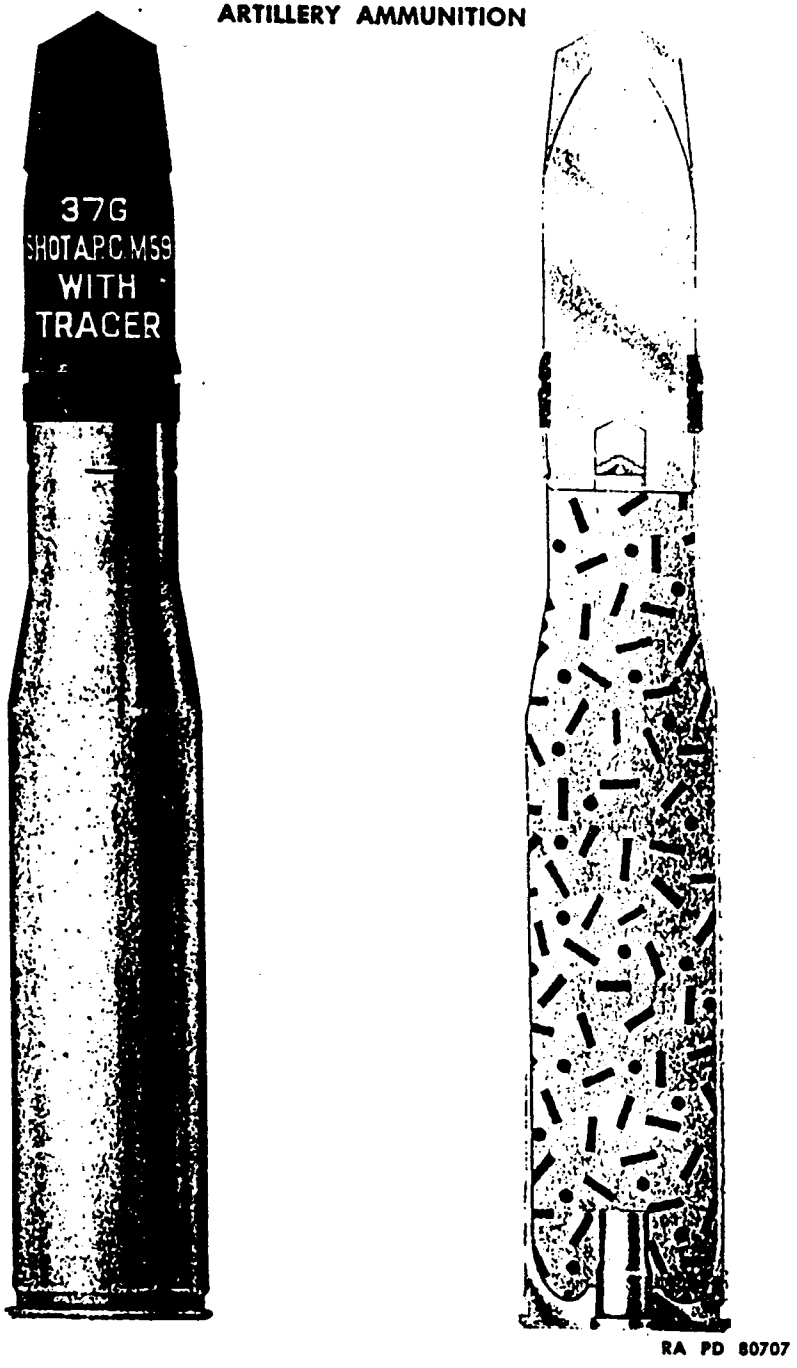


Figure 35 – SHOT, Fixed, A.P.C., M59, w/TRACER, 37-mm Auto. Gun, M1A2

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

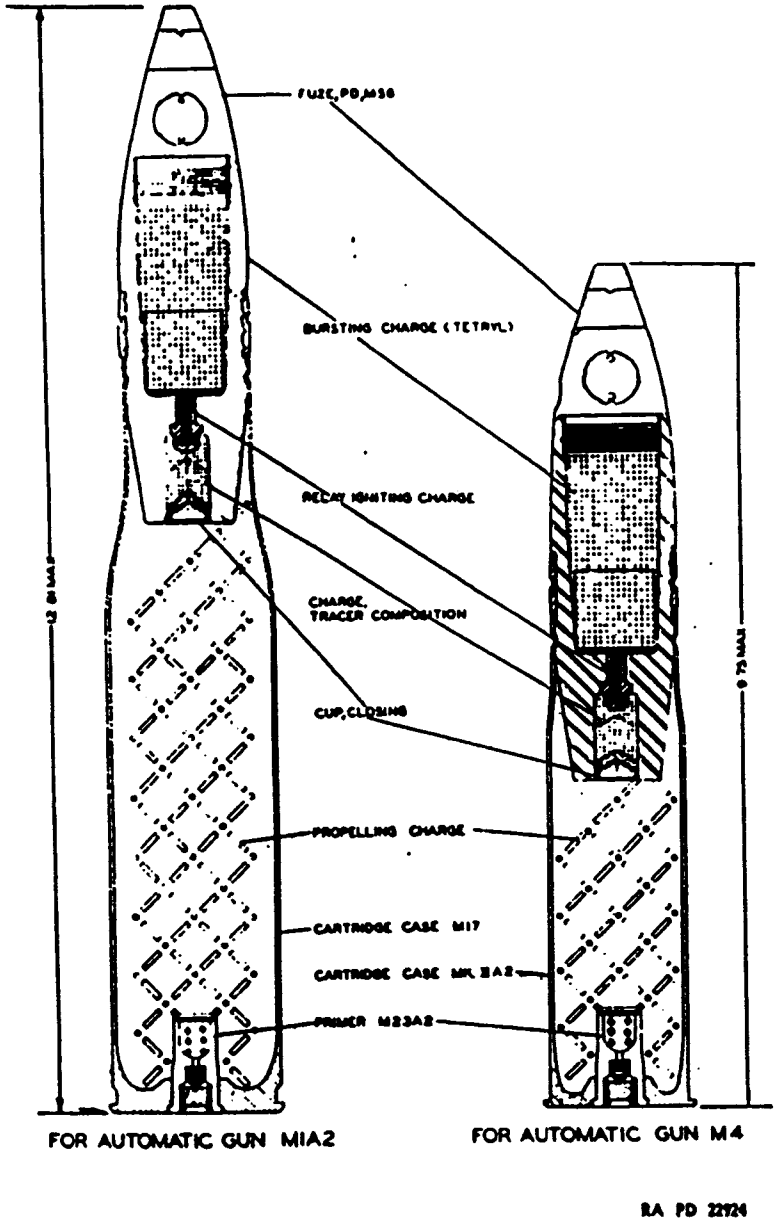


Figure 138 — SHELL, H.E., M54, for 37-mm Guns M1A2 and M4

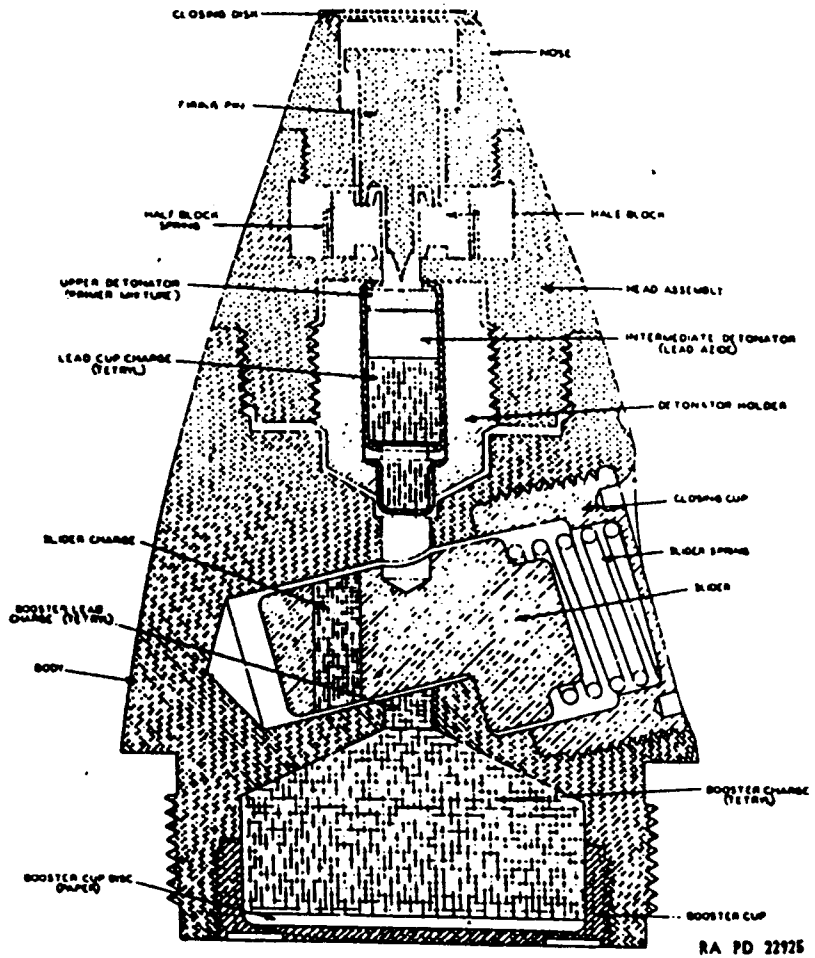


Figure 139 — FUZE, P.D., M56

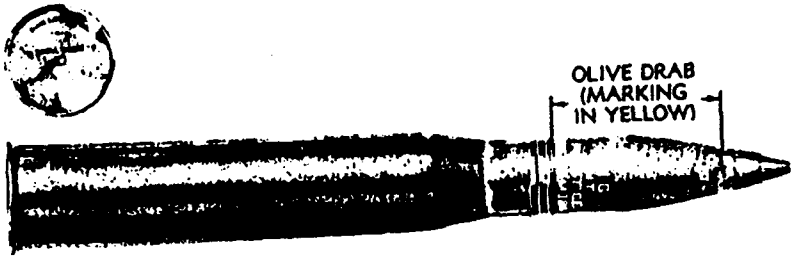


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Figure 119 — SHELL, Fixed, H.E., M38A1, w/FUZE, Time, Mechanical, M43 (All Modifications), 105-mm Gun, M3

227. SHELL, FIXED, H. E., M38A1, W/FUZE, TIME, MECHANICAL, M43 (ALL MODIFICATIONS), 105-MM GUN, M3 (fig. 119), is intended for fragmentation and blast effect against aircraft targets. Components consist of: the M6 Cartridge Case; the M28 type primer; a loosely loaded propelling charge held in position by a distance wad and igniter assembly; and a fuzed M38A1 Projectile. The M38A1 Shell is similar to other modern high-explosive shell, the body being a thin-walled forged-steel casing with tapered (boat-tailed) base and a long ogival nose. Standard bursting charge is TNT but 50-50 amatol also may be used, as an alternative. Both charges are shaped at the front end to provide a booster well; when 50-50 amatol is loaded in the shell a booster surround of TNT is used. BOOSTER, M20A1, is a standard manufacturing component of the shell, being inserted and locked permanently in position by a set screw after the

D-3

shell is loaded. FUZE, time, mechanical, M43 (all modifications), adapts the round for antiaircraft fire; it provides time setting up to 30 seconds but has no impact element, thereby minimizing danger to friendly personnel and materiel on ground impact in the event of time train failure.

DATA

Weight of complete round	63.73 lb	Degree of taper	7 deg 15 min
Length of complete round	45.31 in.	Radius of ogive	8.37 cal.
Length of fuzed projectile	18.00 in.	Muzzle velocity	2,800 ft per sec
Length of cartridge case	30.37 in.	Maximum range (at 45 deg):	
Width of rotating band	1.42 in.	Horizontal range	20,000 yd*
Type of base	Boat-tailed	Vertical height	14,000 yd*

*—Actual maximum range as limited by time setting of fuze is: horizontal, 13,000 yards; vertical, 12,000 yards.

228. SHELL, FIXED, H. E., M38, FLASHLESS, W/FUZE, TIME, MECHANICAL, M2, 105-MM GUN, M3, is essentially the same as the M38A1 Round with M43 Fuze. The chief difference is in the shell loading which does not require a provision for the booster in the M38 Shell since the Mechanical Time Fuze M2 has the booster as an integral part. The round is limited standard for the M3 Gun, for the same purposes as the standard M38A1, and will be issued only to the extent of stocks on hand.

229. SHELL, FIXED, PRACTICE, M38A1, W/FUZE, TIME, MECHANICAL, M43 (ALL MODIFICATIONS), 105-MM GUN, M3 is provided for the 105-mm gun by adapting the service round for the purpose. Service components are used with the exception of the shell loading. For the practice ammunition, a small charge of black powder (0.80 lb) is loaded in the bursting charge cavity adjacent to the booster well cup. The remainder of the cavity is filled with an inert material (plaster of paris and stearic acid). The black powder charge is used in conjunction with the M20A1 Booster to provide a spotting charge for observation purposes when firing in target practice. Ballistic data are the same as that given for the service round in paragraph 227.

230. SHELL, FIXED, PRACTICE, M38, W/FUZE, TIME, MECHANICAL, M2, 105-MM GUN, M3, is an adaptation of the M38 Service Round for practice purposes. The loading is essentially the same as that for the practice M38A1 Round described in paragraph 229 except that the booster is an integral part of the M2 Fuze whereas in the M38A1, the booster is a manufacturing component of the shell. The round is limited standard, having been superseded for manufacture by the M38A1.

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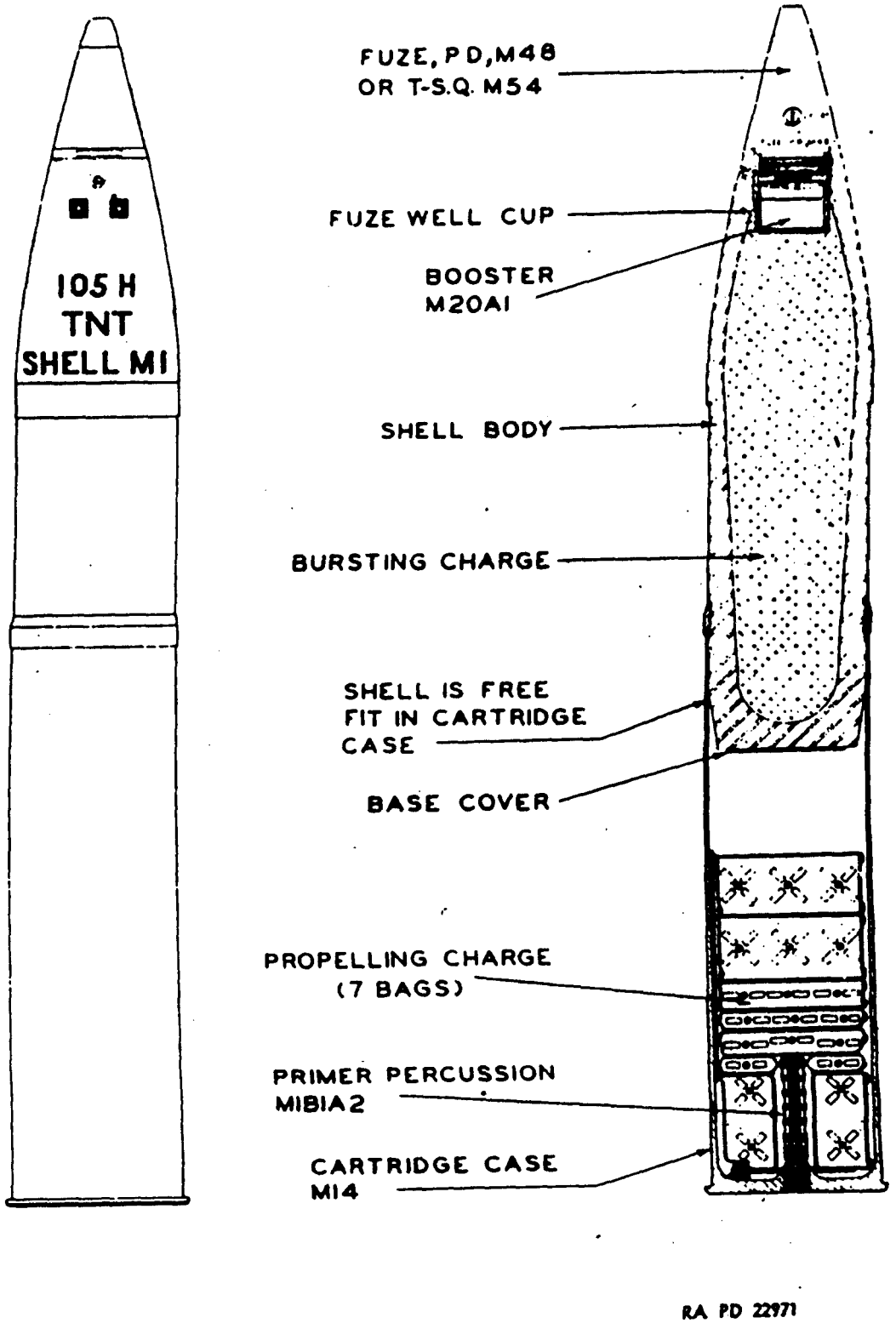


Figure 188 — SHELL, H.E., 105-mm, M1

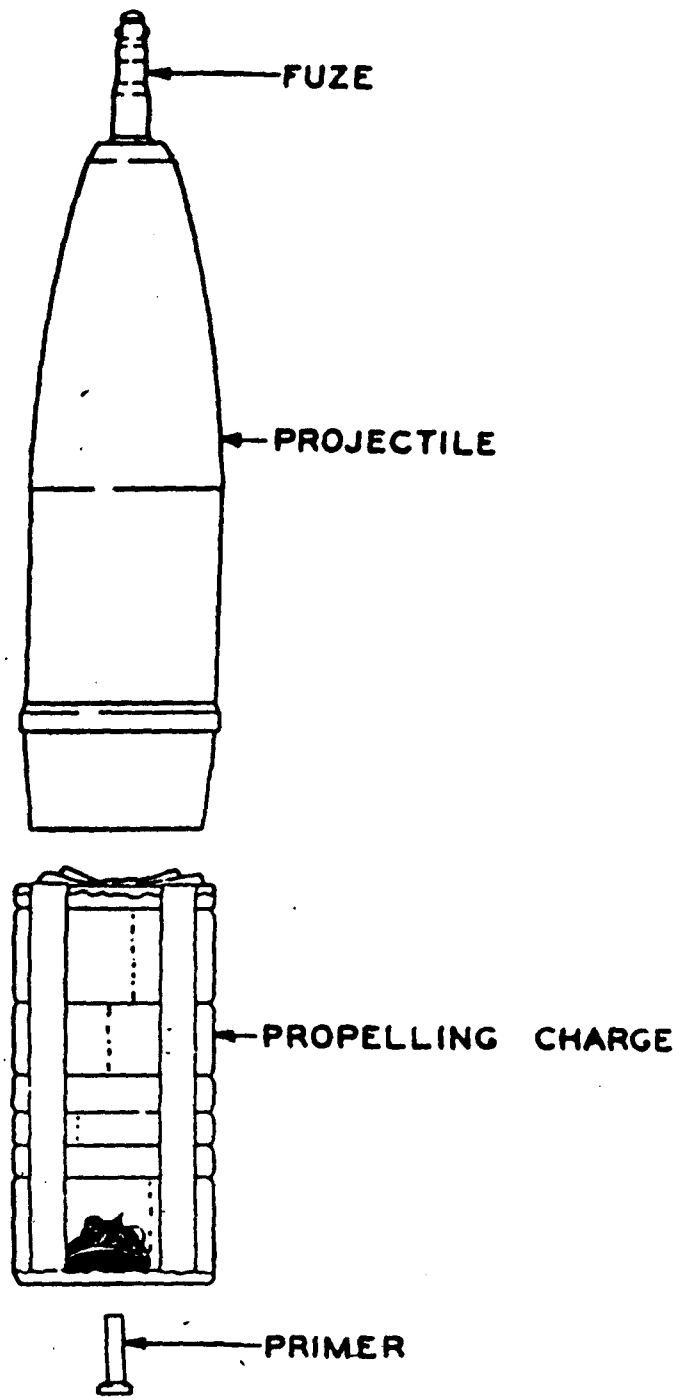


Figure 194 — Complete Round, Separate-loading Ammunition (155-mm Howitzer Shell)

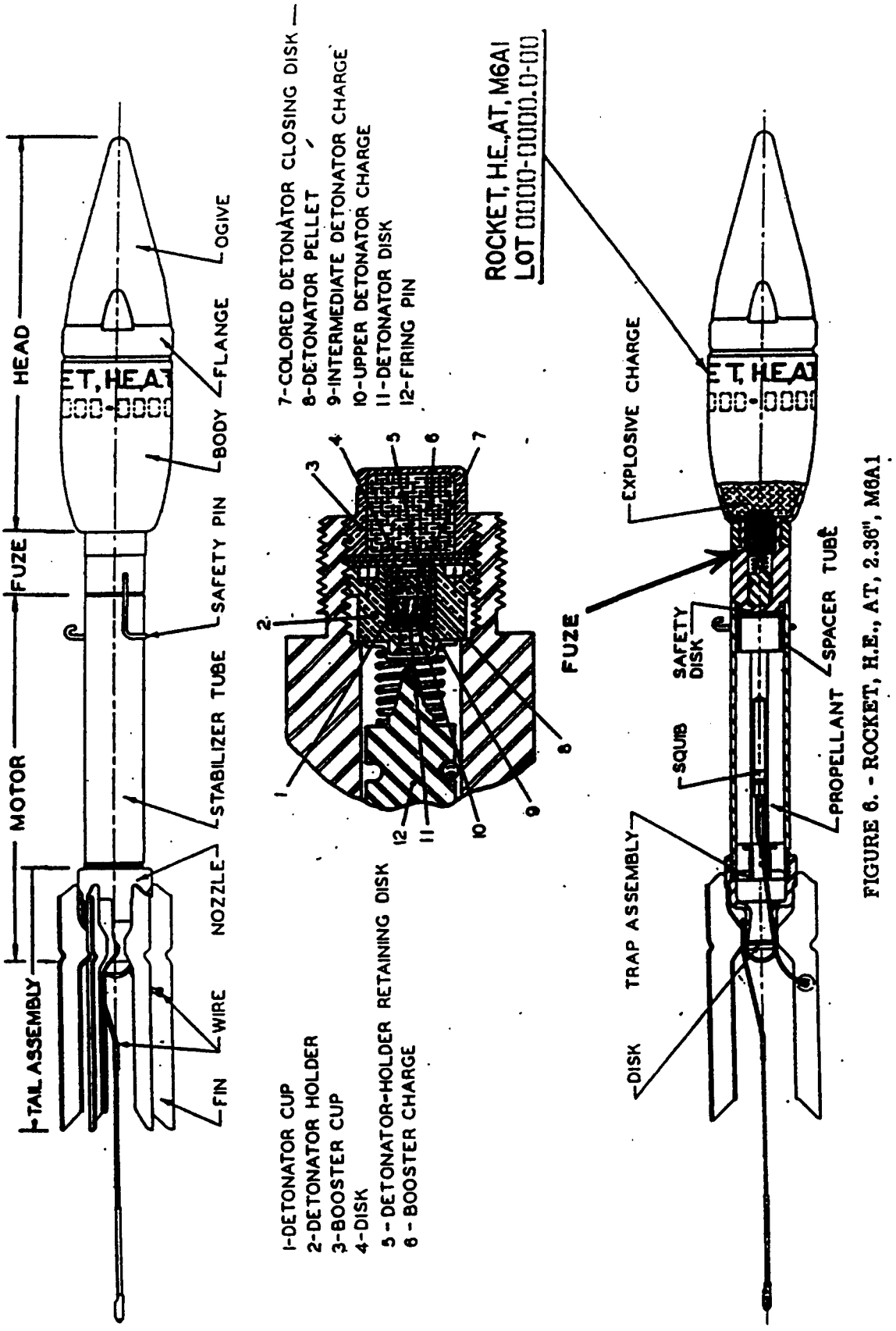
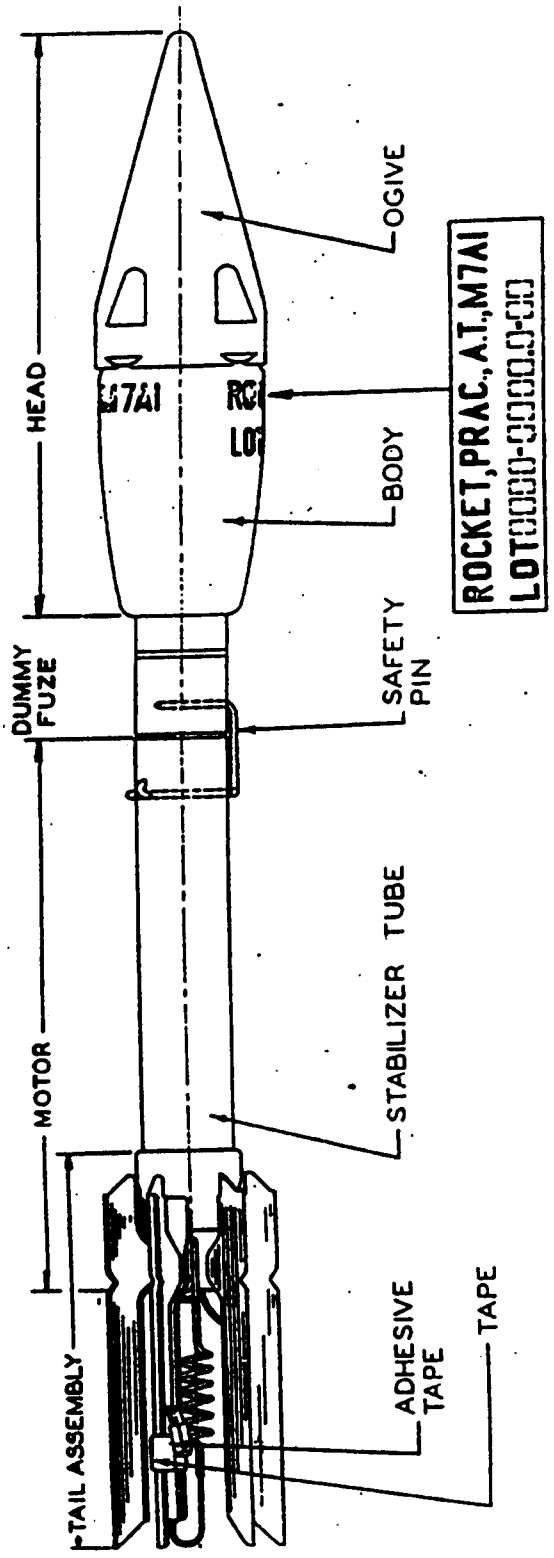


FIGURE 6. - ROCKET, H.E., AT, 2.36", M6A1



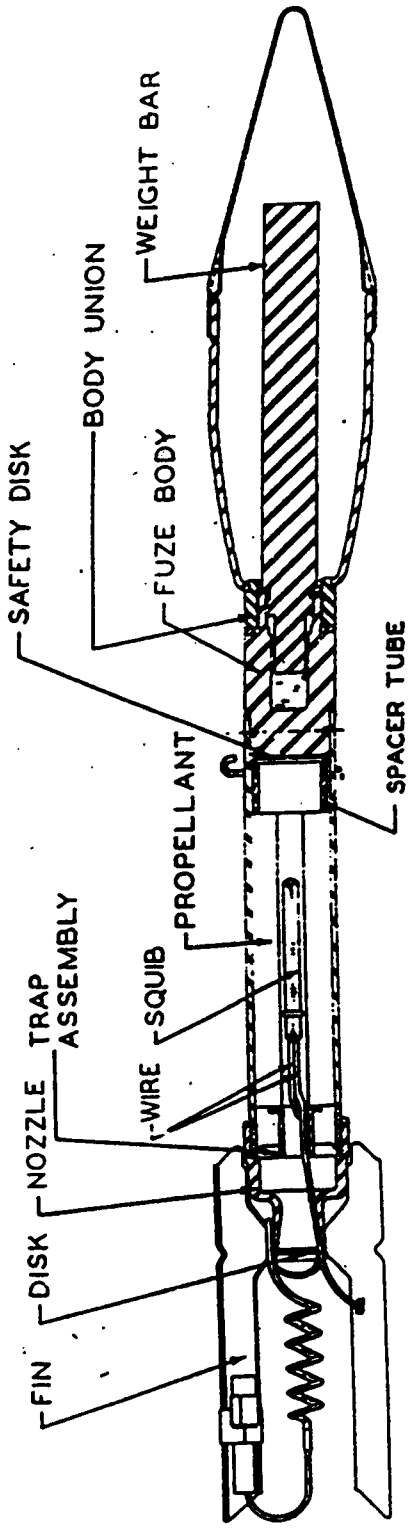


FIGURE 16. - ROCKET, PRACTICE, 2.36", M7A1

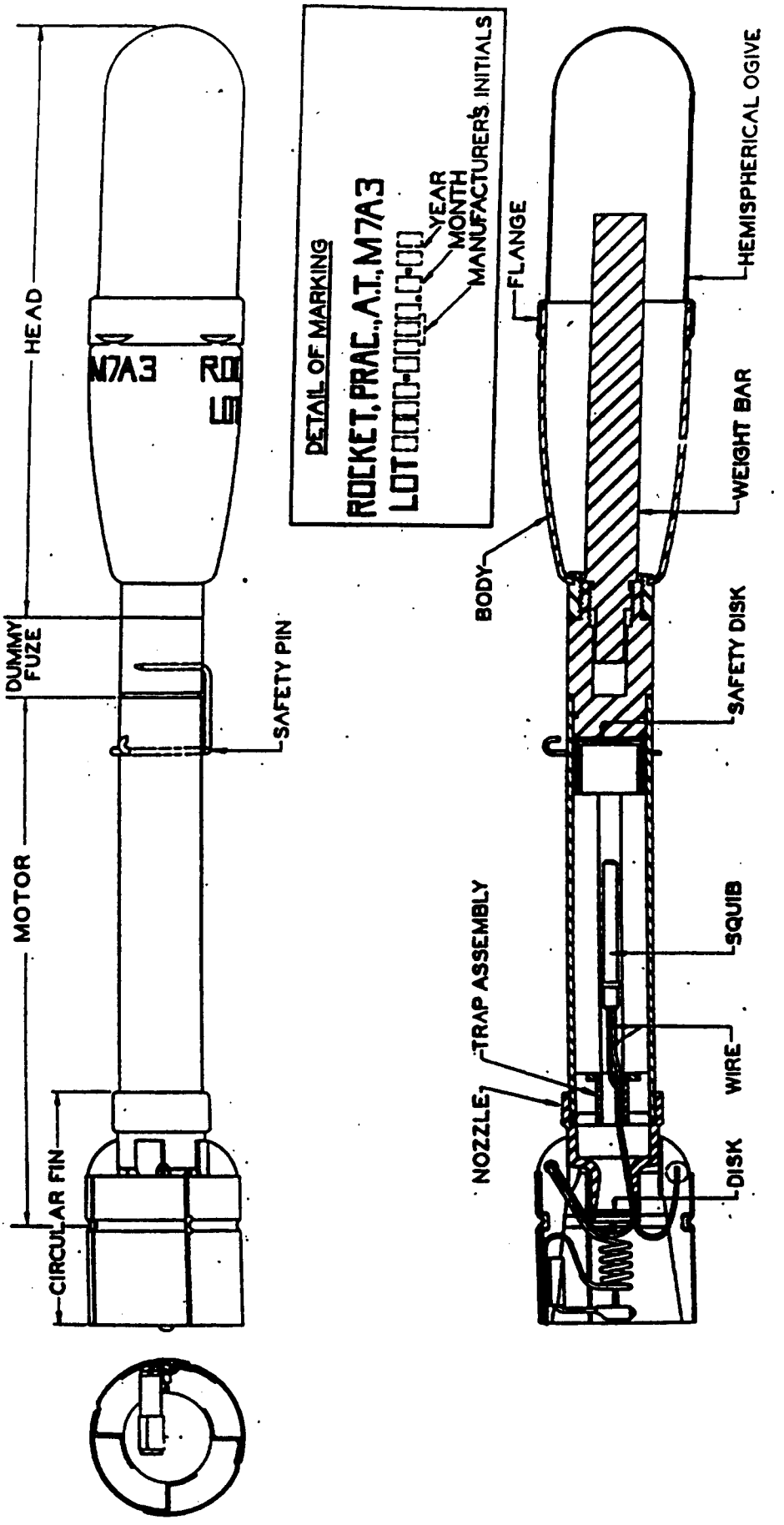


FIGURE 20. - ROCKET, PRACTICE, 2.36", M7A3

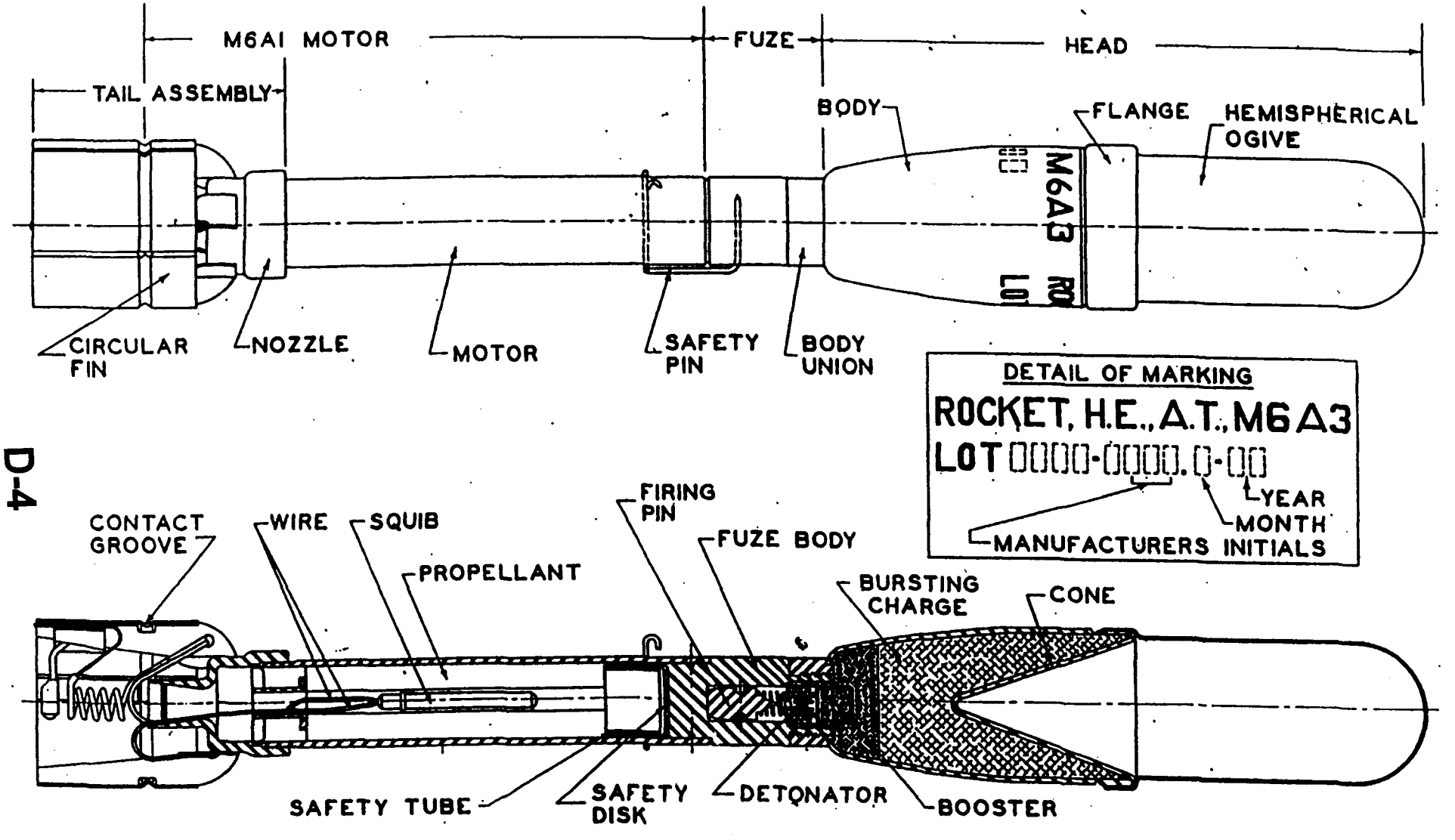


FIGURE 19. - ROCKET, H.E., AT, 2.36", M6A3

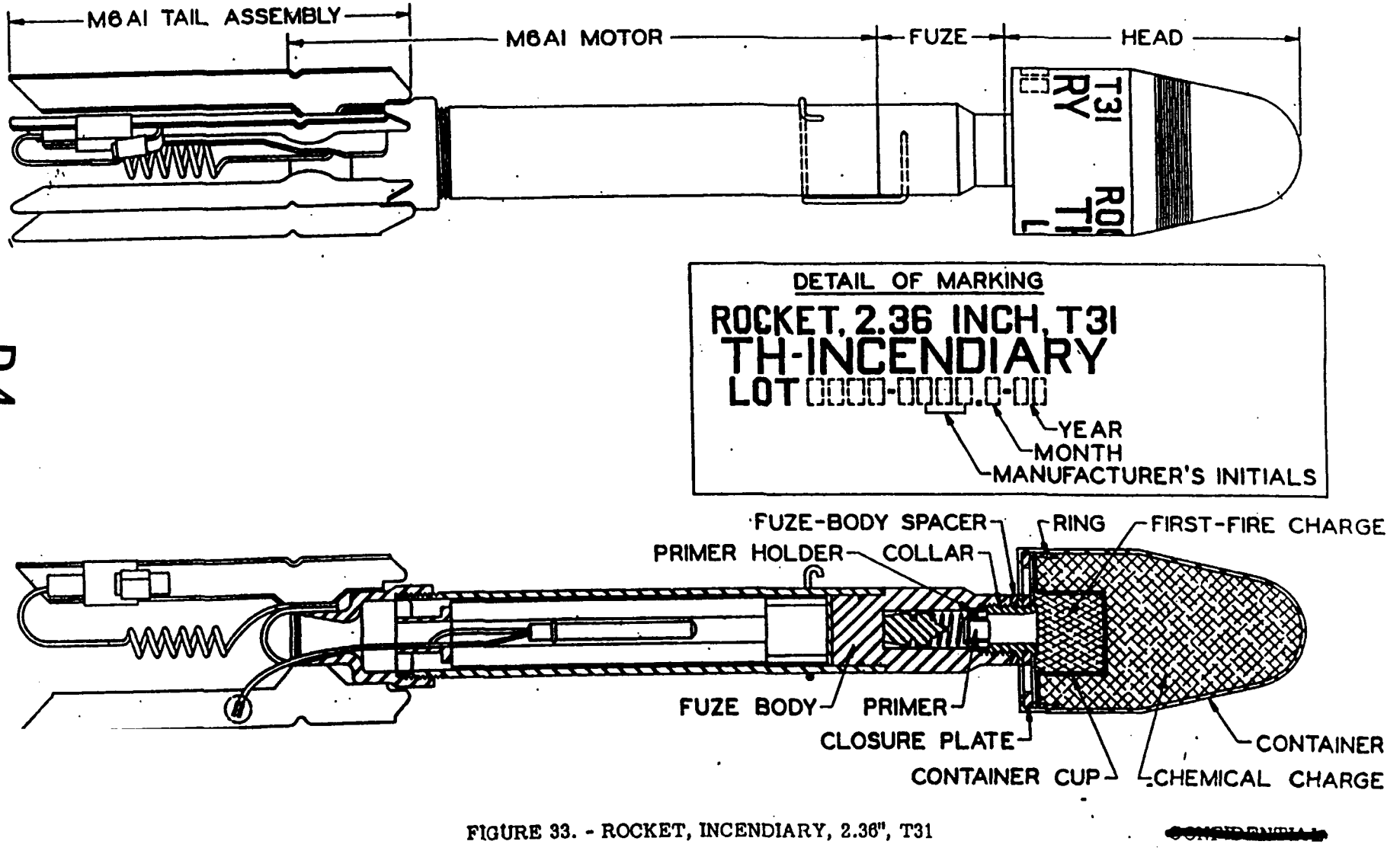


FIGURE 33. - ROCKET, INCENDIARY, 2.36", T31

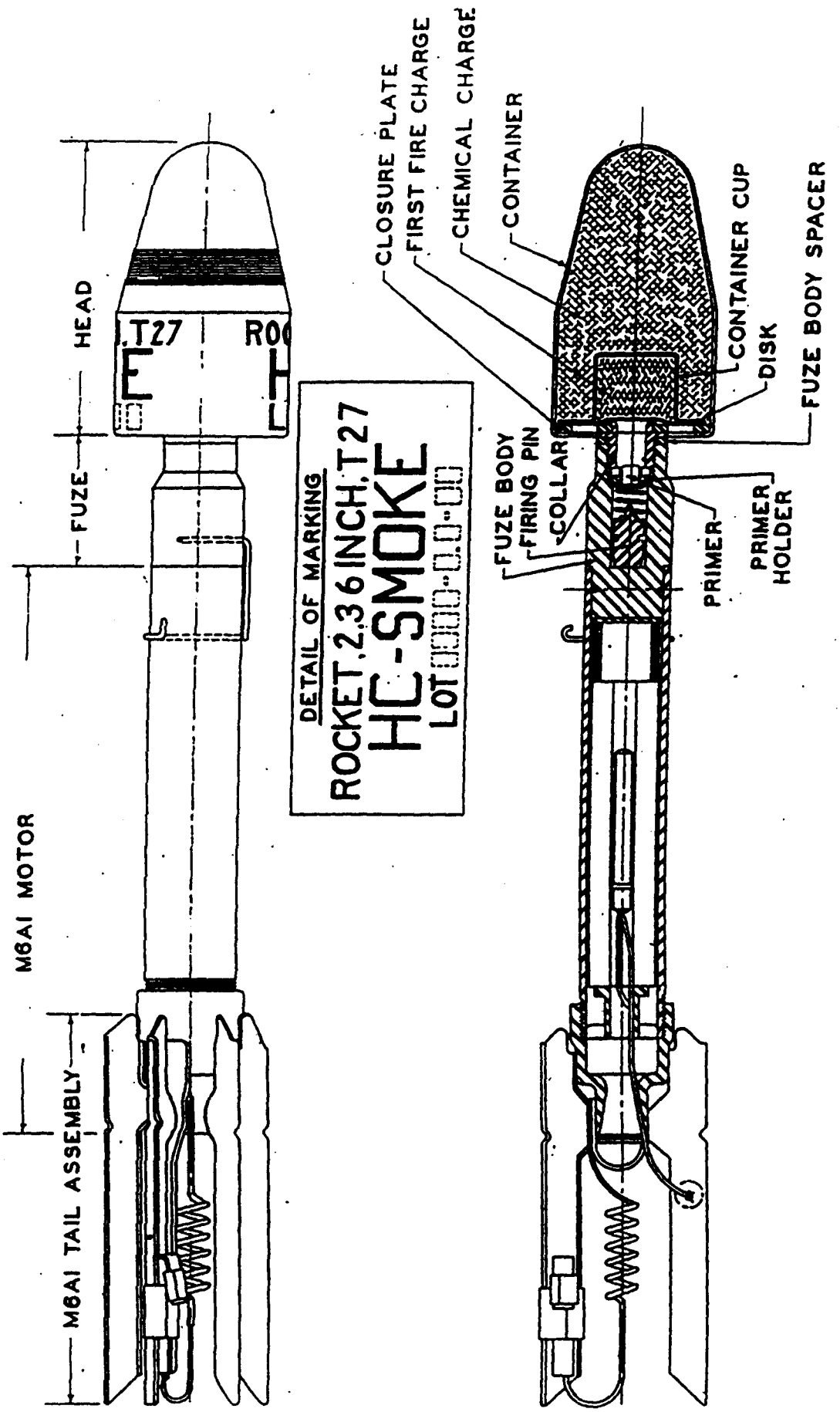
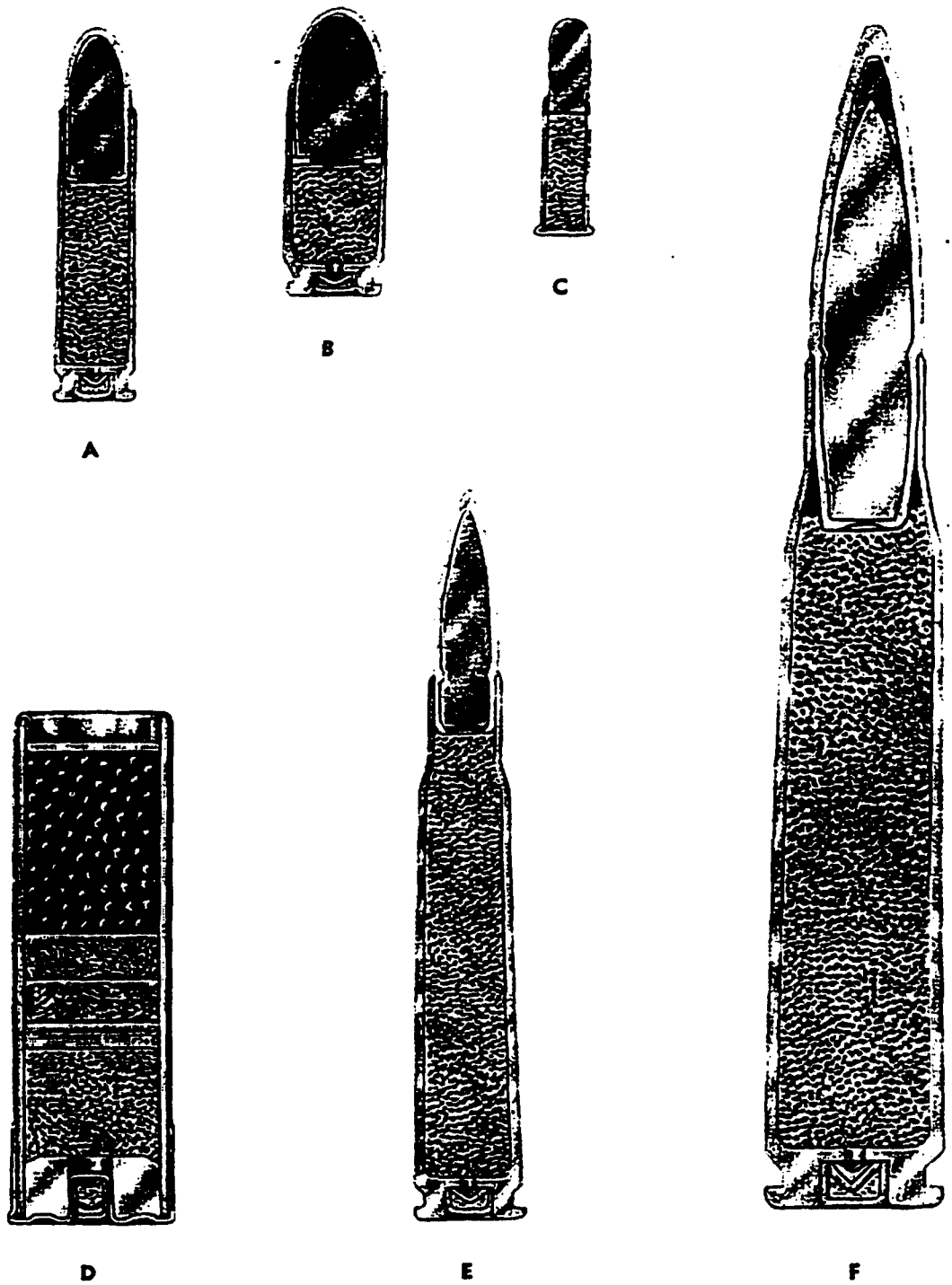


FIGURE 30. - ROCKET, SMOKE, HC, 2.36", T27



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

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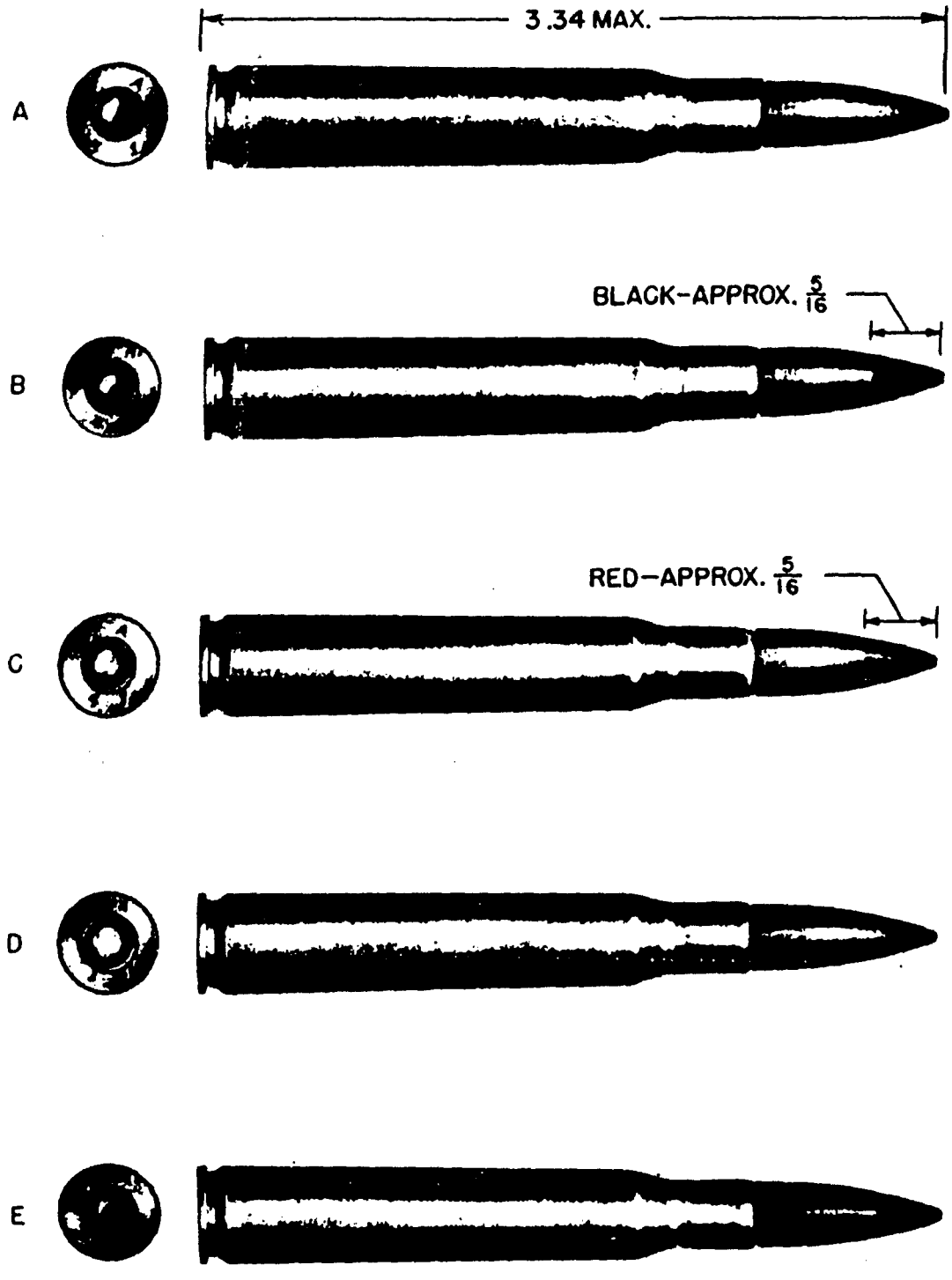

A—CARTRIDGE, ARMOR-PIERCING, CAL..30, M2
B—CARTRIDGE, BALL, CAL..30, M2
C—CARTRIDGE, TRACER, CAL..30, M1
D—CARTRIDGE, BALL, CAL..30, M1
E—CARTRIDGE, BALL, CAL..30, M2, NATIONAL MATCH

RA PD 4522

Figure 79a — Cartridges, Cal. .30

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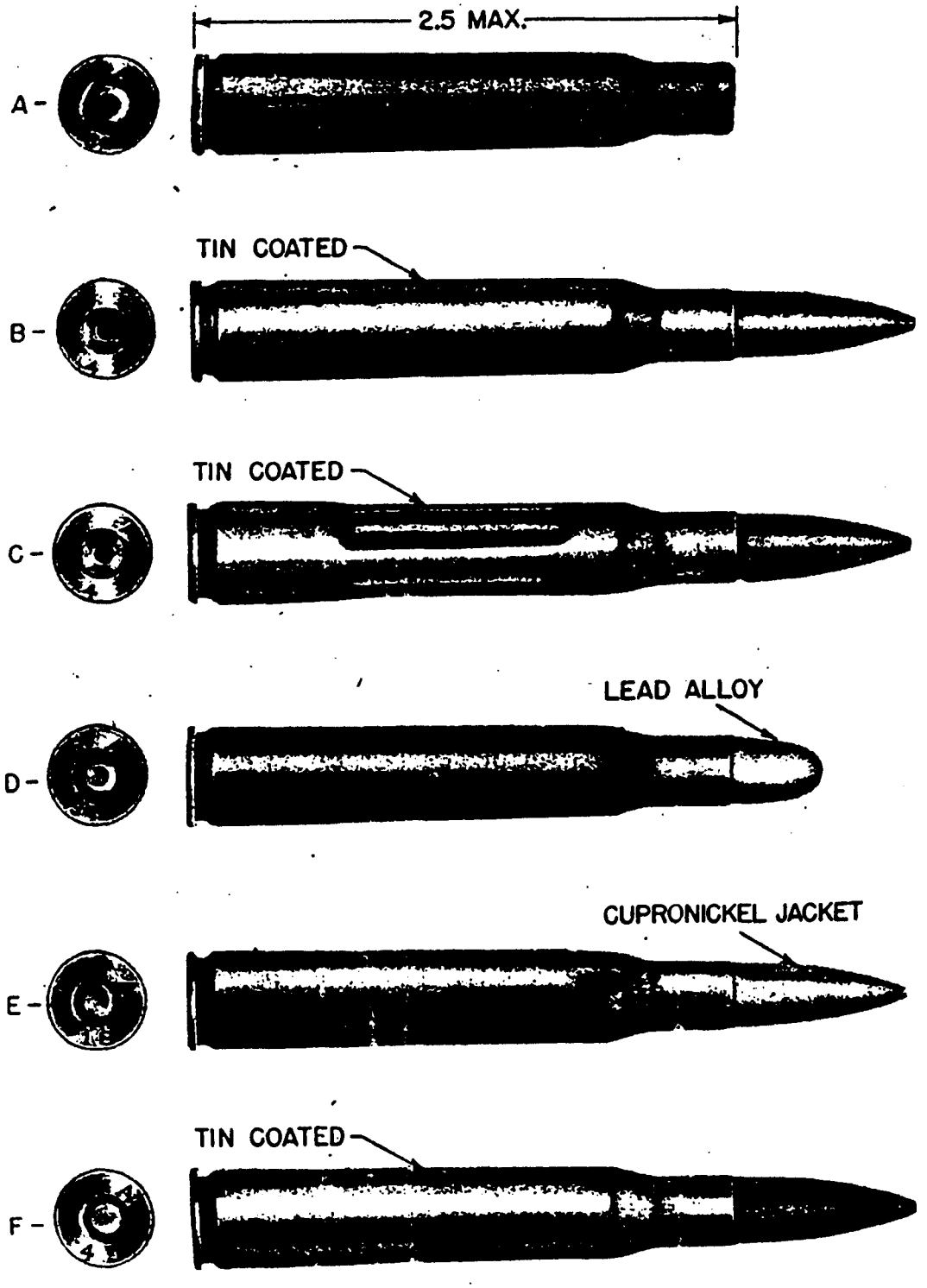
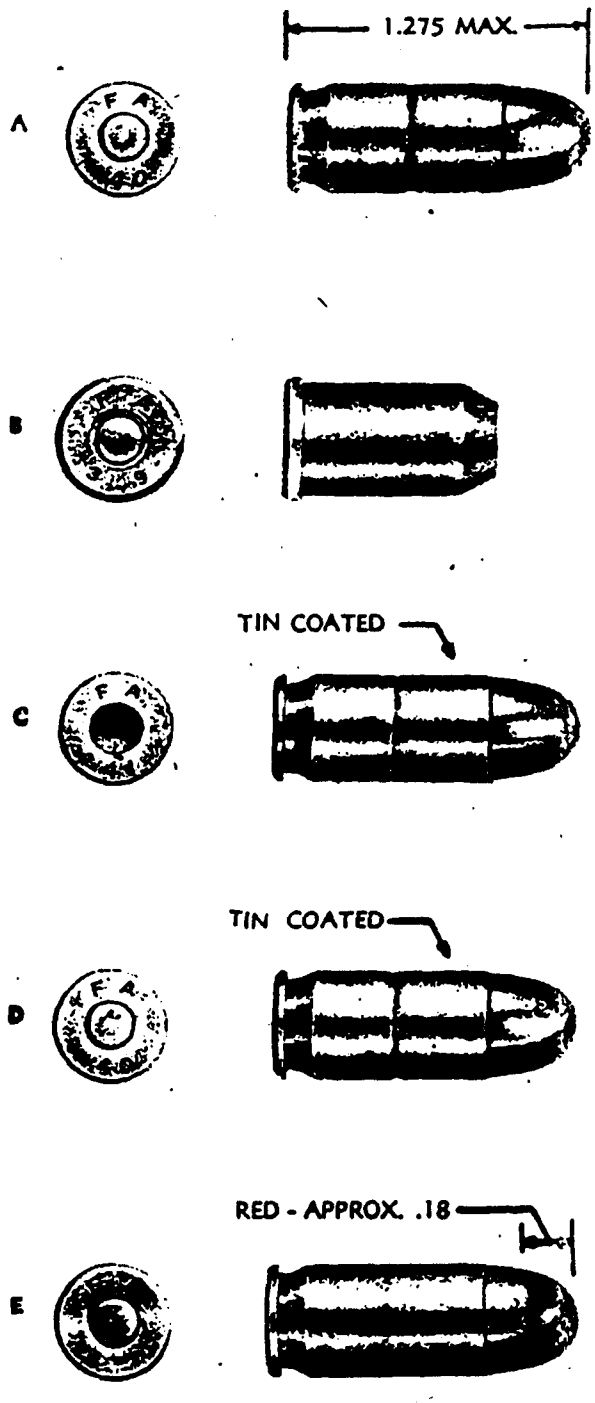


A-CARTRIDGE, BLANK, CAL..30, M1909
B-CARTRIDGE, DUMMY, CAL..30, M2
C-CARTRIDGE, DUMMY, CAL..30, M1906
D-CARTRIDGE, GUARD, CAL..30, M1
E-CARTRIDGE, GUARD, CAL..30, M1906
F-CARTRIDGE, HIGH PRESSURE TEST, CAL..30, M1

RA PD 4523

Figure 79b — Cartridges, Cal. .30 — Continued



A — CARTRIDGE, BALL, CAL. .45, M1911

B — CARTRIDGE, BLANK, REVOLVER, CAL. .45, M1

C — CARTRIDGE, DUMMY, CAL. .45, M1921

D — CARTRIDGE, HIGH PRESSURE TEST, CAL. .45, M1

E — CARTRIDGE, TRACER, CAL. .45, M1

RA PD 4525

Figure 81 — Cartridges, Cal. .45

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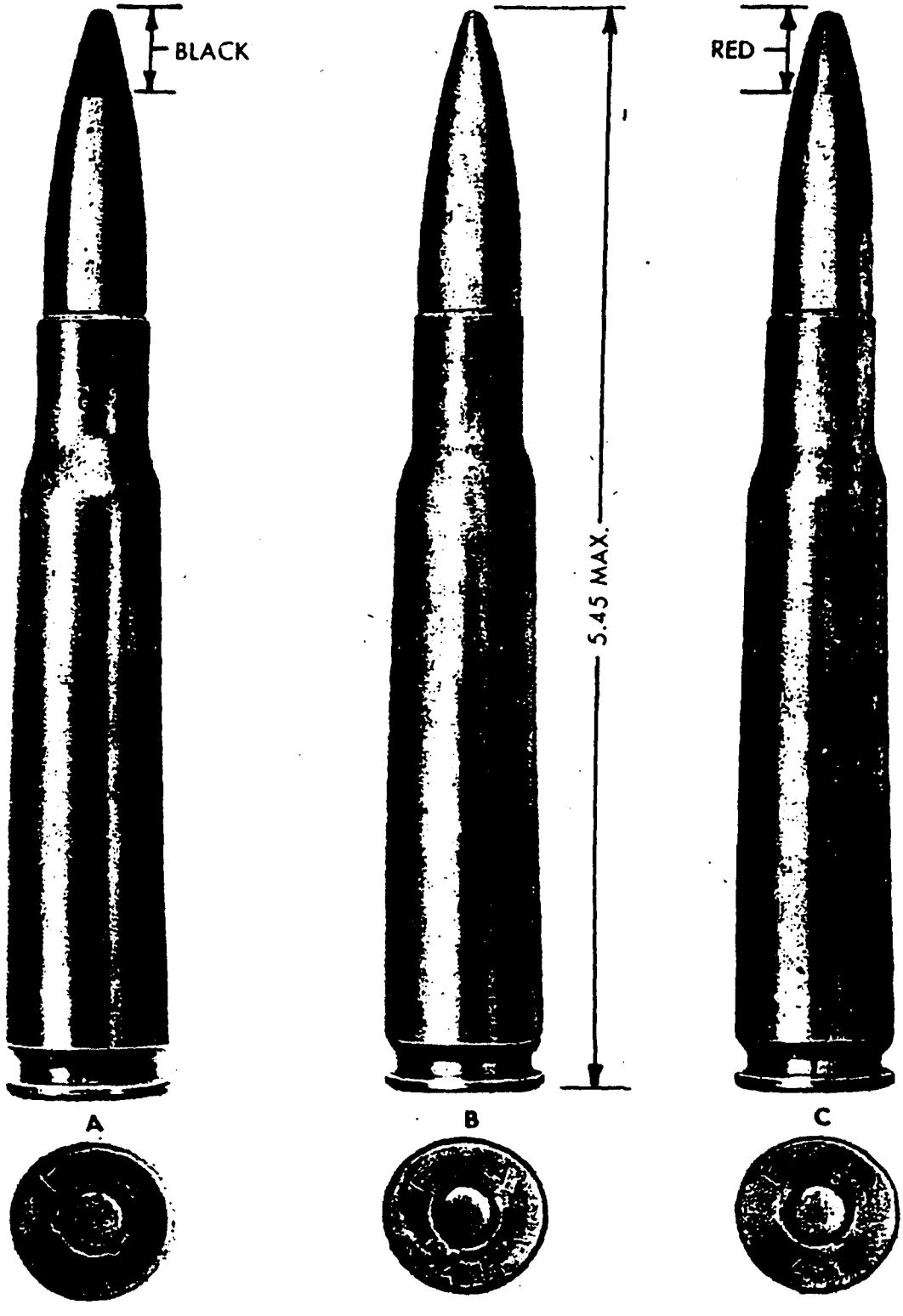


A—CARTRIDGE, ARMOR-PIERCING CAL. .50, M2

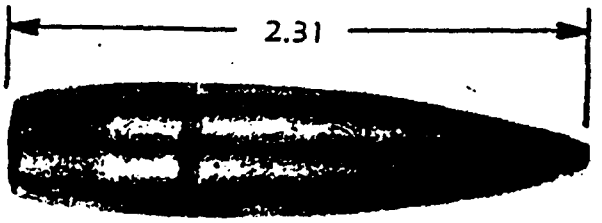
B—CARTRIDGE, BALL, CAL. .50. M2

C—CARTRIDGE, TRACER, CAL. .50, M1

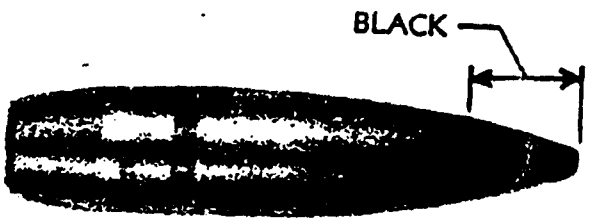
RA PD 2117

Figure 83 — Cartridges, Cal. .50

AMMUNITION INSPECTION GUIDE



BULLET, BALL, CAL. .50, M2



BULLET, ARMOR-PIERCING, CAL. .50, M2

BULLET, TRACER, CAL. .50, M1

RA PD 4526

Figure 82a — Bullets, Cal. .50

The bullet consists of three parts: a gilding metal jacket; a tungsten-chrome steel core; and a point filler of lead hardened with antimony. The over-all length of the bullet is 2.29 inches and the point is blackened for approximately $^{9}/_{16}$ inch. The base has a 9-degree taper beginning 0.386 inch from the base. The mouth of the case is crimped into the cannelure at assembly, and a minimum pull of 100 pounds is required to extract the bullet from the case.

Exterior ballistics, maximum range (approx.) . . . . . 7,200 yd
Maximum pressure . . . . . 52,000 lb per sq in.
Velocity:
At 78 ft. . . . . 2,900 ft per sec
At muzzle . . . . . 2,935 ft per sec

metal safety key which must be removed in order that the fuze can be inserted in the mine, and a metal safety ring which must be removed to arm the mine. The plastic fuze body contains a plastic firing pin which, under pressure, breaks an acid ampule. The acid sets off a priming mixture, which in turn causes detonation of a detonator, a tetryl booster, and the bursting charge of TNT.

This mine has two advantages over previous types:

1. It is nonmetallic and therefore not detectable by the detectors in use at the present time.

2. Due to its shock absorber ring, it is very insensitive to sympathetic detonation and therefore is resistant to attempts to clear paths through the mine fields with devices such as bangalore torpedoes.

MINE, ANTITANK, PRACTICE, M1, WITH FUZE, MINE ANTITANK, PRACTICE, M1.

The body of this mine is similar to that of the H.E. mine, differing only in that it is empty (no bursting charge). Also, it is provided with a cast iron former as a support to prevent crushing of the body. It has no filling hole. Five, equally spaced, 1-inch diameter holes may be found in the side of the mine body.

The **FUZE**, mine, antitank, practice, M1, is similar to the M1 H.E. Fuze except that a cal. .32 blank cartridge replaces the detonator and a smoke-puff charge of black powder and red phosphorus replaces the booster.

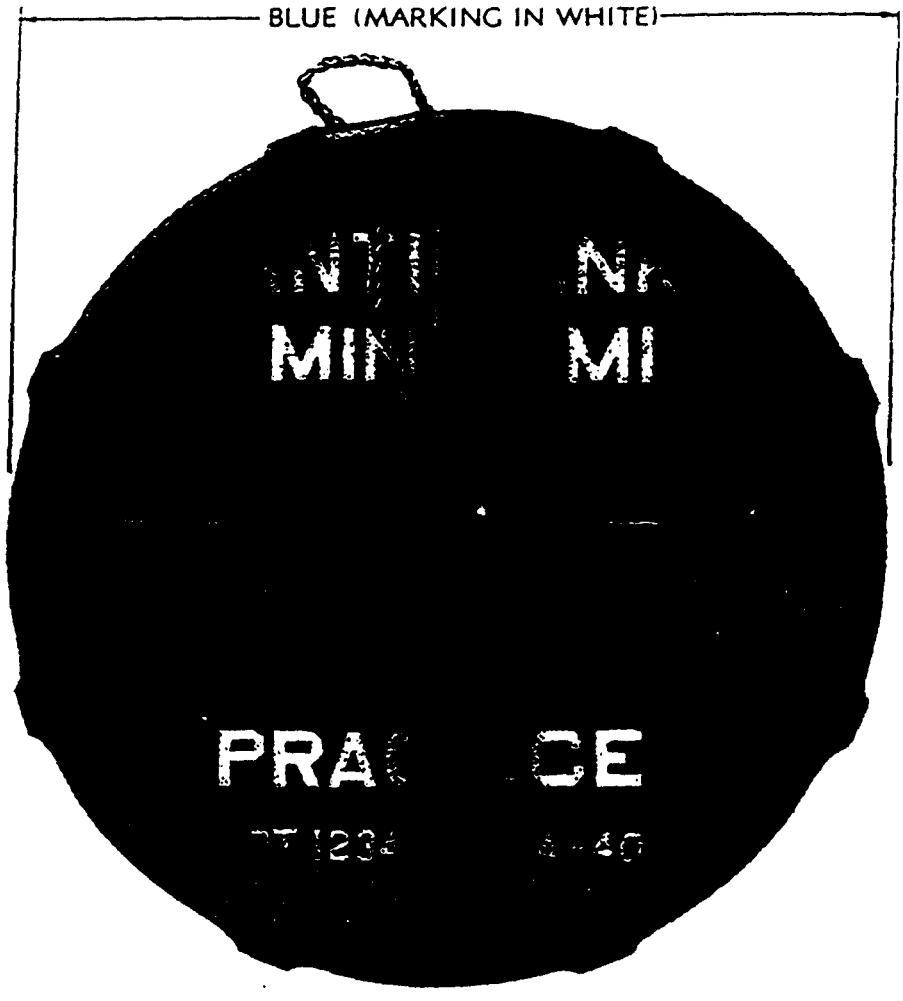
A **FUZE**, dummy (antitank mine), M1, is also provided. It is a plastic simulation of the service fuze and is provided with a removable safety fork. As its name indicates it is completely inert.

This mine can be used more than once by the provision of new fuzes and, when necessary, the replacement of bent or broken spiders.

MINE, ANTITANK, PRACTICE, M1B1.

This mine body differs from the previous mine body in that it may be sand-loaded to weight. A filling hole and filling hole cap are provided. Also, the body is without holes in the side. The cast iron former is of smaller diameter and is located centrally within the body. Four slotted openings are formed between it and the fuze cavity in the top of the mine body. The same fuzes as in the previous round are used with this practice mine.

AMMUNITION INSPECTION GUIDE



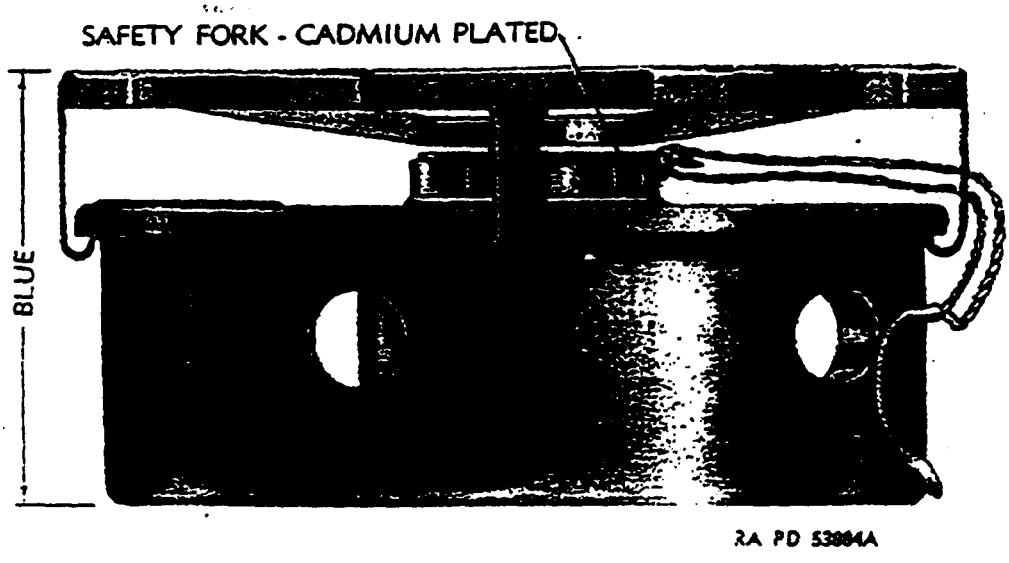


Figure 105 — MINE, Antitank, Practice, M1

SMOKEPOT, HC, 10-LB., M1

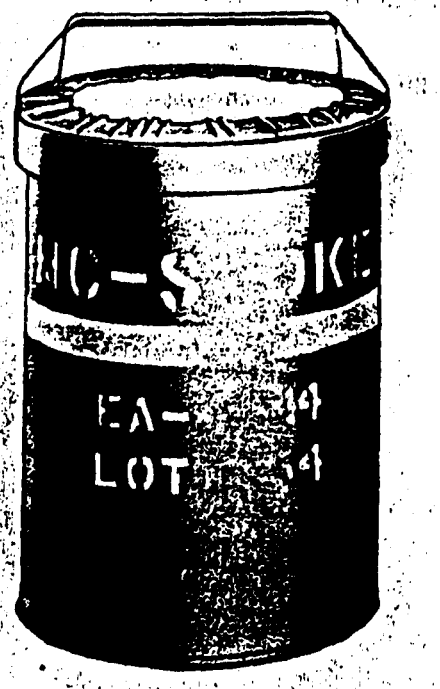


Figure 52.

Use: The M1 10-lb. HC smoke is used to produce screening smoke. It is used mainly as a training munition but can also be used in combat.

Description: The M1 10-lb. HC smokepot is a cylindrical sheet-metal container, 5½ inches in diameter and 9 inches high, filled with 9½ to 11 pounds of type C HC smoke mixture and provided with an ignition device. A removable outer cover is clamped to the top of the pot, and a nonremovable inner cover with a hole in the center covers the filling. Starter mixture is embedded in the filling directly under the hole in the inner cover. A matchhead is centered in the hole in the inner cover, in contact with the starter mixture. A scratcher block in a paper envelope is packed between the inner and outer covers. The pot is ignited manually by rubbing the scratcher block on the matchhead or electrically by using an electric squib (not supplied). Burning time is 5 to 8 minutes.

Status: Std-B

User: Army, Navy, Air Force

Spec/Pd No: MIL–P–12030

B/M Dwg: C36–1–1

Stock No: FSN 1365–219–8512

Basis of Issue: As required

Unit of Issue: Each

ORDNANCE AND EXPLOSIVES ARCHIVES SEARCH REPORT FOR FORMER CAMP ESSEX ESSEX, CALIFORNIA PROJECT NUMBER J09CA027801

APPENDIX E

REPORTS/STUDIES

APPENDIX E

REPORTS AND STUDIES

TABLE OF CONTENTS

SITE SURVEY SUMMARY SHEET

PROJECT NO. J09CA027800

Site Name: Camp Essex (also known as Camp Clipper)

Location: Located 32 miles west of Needles, San Bernardino County, California.

Description of Problem: Due to the possibility of ordnance and explosive waste still remaining buried on the site, action is recommended to evaluate potential threat to personnel.

Site History: In 1942, the War Department acquired 30,536.5 acres through public land transfer from the U.S. Dept. of the Interior, and various permits with the State of California, the Southern Pacific Company and a private owner. The site was used as a campsite during World War II troop training maneuvers by General George Patton, Jr. Between 1944 and 1949 all permits were cancelled and the public land was returned to the U.S. Department of the Interior. A majority of the property is currently under the control of the U.S. Bureau of Land Management; other portions are owned by the State of California and various private parties.

Available Studies and Reports:
"Desert Training Center, California-Arizona Maneuver Area, Interpretive Plan" by U.S. Dept. 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.
"The Desert Training Corps" by Charles M. Province, editor, The Patton Historical Society, 1989

Category of Hazard: Ordnance and Explosive Waste (OEW)

Basis for Determination of DOD Responsibility: The site was used as a campsite for troops during the desert troop training maneuvers by General Patton in 1942.

POC/District: Dale F. Bulick, U.S. Army Corps of Engineers, Los Angeles District. (213) 894-5529

Status: The site is mainly undeveloped desert land. A few isolated parcels of private property occur in the southeast part of the site. A majority of the property is under the control of the U.S. Bureau of Land Management. The BLM has plans to erect a monument and plaque on Essex Road. Other roads within the site area will be upgraded to passable conditions for vehicular use.

Description of Proposed Remedial Action: In accordance with current OEW guidelines, it is recommended that action be taken to evaluate the potential threat to personnel and that a confirmation study be performed.

Estimated Cost: $350,000.

DEFENSE ENVIRONMENTAL RESTORATION PROGRAM
FOR FORMERLY USED SITES
FINDINGS AND DETERMINATION OF ELIGIBILITY
FEDERAL, STATE, AND PRIVATE PROPERTIES
(CAMP ESSEX)
SAN BERNARDINO COUNTY, CALIFORNIA

PROJECT NO. J09CA027800

FINDINGS OF FACT

1. The former Camp Essex, also known as Camp Clipper, is located north of Essex, approximately 32 miles west of Needles, San Bernardino County, California. It is within:

   T8,NR16E Sections 1-3, 10-30, 33,34 (San Bernardino Meridian)
   T8N,R17E Sections 3-9, 17-19
   T9N,R16E Sections 22-27, 34-36
   T9N,R17E Sections 31,33,33

   An ordnance and explosive waste project is proposed due to the possibility of buried waste.

2. The United States Department of the Interior transferred 21,537.78 acres to the War Department via use permit dated December 13, 1943 in lieu of a formal directive. The State of California granted the use of 1,280 acres to the War Department via Revocable Permit No. 12, dated March 24, 1942. A permissive use agreement with the Southern Pacific Company, dated February 11, 1942 granted the use of 7,678.72 acres to the War Department. A permit from E.G. Farmer dated June 8, 1943 allowed the use of 40 acres by the War Department. The total acreage acquired is 30,536.5 acres.

3. Camp Essex was used by the War Department as a campsite during the troop training exercises by General George S. Patton, Jr., in the desert of Southern California in 1942. It was one of many camps established in the California-Arizona Maneuver Area (CAMA) for the purpose of conditioning troops and testing military equipment before subjecting them to the rigors of the battlefield. Improvements to the site in 1942 consisted of 24 battalion enlisted men's shower buildings, 12 battalion officer's shower buildings, 191 latrines, 30 single pyramided wood tent frames, 119 double pyramided wood tent frames, an outdoor theatre, two - 750-ft. deep water wells, one 500,000 gallon reservoir, and one 50,000 gallon tank. All were temporary structures except the 500,000 gallon reservoir.

4. Camp Essex was declared surplus on March 16, 1944. On February 7, 1945, 21,537.78 acres were relinquished to the U.S. Department of the Interior and on June 1, 1949 this acreage was re-transferred to them. These documents could not be located. The permit with the State of California for 1,280 acres was terminated on March 8, 1945. This permit contains a restoration clause requiring the

removal of improvements and restoration of the property to as near the original condition as possible. The State of California refused to sign a release from liability claims in a letter sent to the War Department on March 8, 1945. The permit with the Southern Pacific Company for 7,678.72 acres was terminated on November 13, 1944. No termination document or release could be located. The permit with E.G. Farmer for 40 acres was terminated August 18, 1944. This permit could not be located for inspection.

The BLM has indicated that no reports have been received in the past several years regarding found ordnance. The Needles Search and Rescue Team of the San Bernardino County Sheriff's Department and the Explosive Ordnance Detachment (EOD) Headquarters at Fort McPherson, Georgia have no record of civilian injury or death due to ordnance left on the site by DOD in the past 10 years. Local townspeople familiar with the training maneuvers, the BLM, and representatives from the Patton Museum believe that ordnance and artifacts have been collected over the years by hobby collectors but that little, if any, remains. No evidence was found of ordnance or unsafe conditions upon recent visual inspection of the site.

According to available documentation, 19 firing ranges were used in the area including ranges for .45 caliber pistols, .30 caliber machine guns and Browning automatic rifles. The exact location of these ranges could not be determined, however the documentation indicates that all of these ranges were within the project site boundaries.

Portions of the site are currently owned by the U.S. Department of the Interior, the Southern Pacific Land Company, the State of California, and various private owners.

5. Today the site consists of sand, rock, scrub covered desert land. A portion of the site is privately owned but the majority of the site is managed by U.S. Bureau of Land Management (BLM). The only remaining structures are the concrete reservoir and the abandoned wells. The California Desert Plan has designated the area north of Interstate 40 as Multiple Use Class "L"; the land south of Interstate 40 to Essex Road is designated as Multiple Use Class "M". A monument with a plaque identifying the camp will be erected at the intersection of Essex Road and the dirt road leading to the center of the camp. The Range Road, Kitchen Road and the route along the fence will be opened for vehicle traffic. This network will provide access into the site in addition to a loop drive that will place visitors within walking distance of most of the remaining area. A self-guided trail will be developed to ensure that visitors are directed to significant areas and features. A monitoring program, which includes a permanent photographic record, will be initiated to insure the stability of the site. Preservation of the site and protection from damage are

primary concerns of the BLM; they do not want any surface disturbance at the site. Unless there is a clear and present danger, the BLM does not desire restoration. The BLM requested they be notified of any contemplated activity on the project site.

The Regional Water Quality Control Board (RWQCB), Colorado River Basin Region, has no record of toxic or hazardous waste in the area. The County of San Bernardino Department of Environmental Health Services indicates that there is one hazardous waste handler listed near the project area, however, there are no contaminated sites. A review of records by their Department found no record of any release, spill, dumping, contamination, clean-up action, underground tank or aboveground storage of hazardous materials, substances or wastes on the subject property that adversely affects either public health or the environment. There are no records of civilian injury or death according to appropriate agencies. There were 19 firing ranges located on the project site which indicates the possibility of remaining ordnance buried on the site. Therefore it is appropriate to assign a Risk Assessment Code (RAC) 4 to the project site. Action is recommended to evaluate the potential threat to personnel and a confirmation study is appropriate.

DETERMINATION

Based on the foregoing findings of fact, the site has been determined to have been formerly used by DOD.

Moreover, it is determined that an environmental restoration project, to the extent set out herein, is an appropriate undertaking within the purview of the Defense Environmental Restoration Program, established under 10 U.S.C. 2701 et seq., for the reasons stated above.

Date

LLOYD A. DUSCHA, P.E.
Deputy Director
Directorate of Engineering and Construction

PROJECT DESCRIPTION
CAMP ESSEX
SAN BERNARDINO COUNTY, CALIFORNIA

PROJECT NO. J09CA027800

Introduction

The Defense Environmental Restoration Account (DERA) is a federally mandated (P.L. 99-190) program to provide environmental restoration of both active installations and formerly used Department of Defense (DOD) properties. In accordance with this program, investigations are made to determine whether or not these properties qualify for restoration in the areas of hazardous or toxic waste, unexploded ordnance, and unsafe buildings, structures and debris.

The U.S. Army Corps of Engineers has the responsibility of contracting support services to make these determinations for formerly used DOD properties.

The purpose of the initial investigations is to identify former installations which may have contamination from hazardous and toxic wastes, or ordnance and explosive wastes, or which may present unsafe conditions due to perilous and unsteady structures as a result of DOD usage of the site.

Extensive research, site visits to the properties, and discussions with appropriate regulatory and environmental health agencies are performed under this initial phase of the program. Sampling, monitoring, topographic or geotechnical surveys are not required as a part of this phase; therefore all assessments are preliminary in nature.

Inventory Project Reports (IPR) are prepared in order to provide the preliminary assessment and disposition of the site. After the initial site investigation has been conducted, one of three possible alternatives is selected as a project recommendation. These include 1.) no further action, 2.) detailed site visit and confirmation study recommended, or 3.) additional information is required before the initial site assessment can be completed.

Location of Project Site

Camp Essex is located 32 miles west of Needles, California in the Fenner Valley. It is due north of Essex and due south of Interstate Highway 40. The Clipper Mountains are to the west, the Piute Mountains are to the east and southeast. It is located within:

T8N,R16E Sections 1-3, 10-30, 33,34 (San Bernardino Meridian)
T8N,R17E Sections 3-9, 17-19
T9N,R16E Sections 22-27, 34-36
T9N,R17E Sections 31, 32,33

Description of Site

Camp Essex, also known as Camp Clipper, was used as a large campsite. The site included a firing range and a small air field. The site consists of 30,536.5 acres. Most of the project site is sandy and desert land with brush located throughout the area.
Currently, the only DOD structure remaining at Camp Essex is the 500,000 gallon concrete reservoir. The concrete reservoir is cracked in many places with large weeds protruding through the cracks. Bed springs and three old tires were at the bottom of the empty reservoir. Old rusted water pipes and concrete pipe holders are also located around the reservoir.

Two observation wells are located near the reservoir. One well has a large brown rock covering an opening that is approximately 20" in diameter, this 20" rusted pipe stands vertically in a concrete base that is approximately 15' x 4 1/2'. We were unable to move the rock from the pipe opening.

A similar well exists on the opposite side of the 500,000 gallon concrete reservoir. The opening of this pipe had a metal cover which we were able to remove. Water is still in this pipe but it is very far down from the land surface.

A small dirt runway exists within a short driving distance from the reservoir. The old airplane tie-downs are still in their original positions. The runway is littered with a few old empty drums.

There was no evidence found of underground tanks, toxic waste, or unexploded ordnance as a result of DOD use of the site.

Research has indicated the possibility of contamination of the site by ordnance and explosive waste (OEW) even though no waste was found at the time of the site visit. Therefore, no detailed description or identification of OEW can be made. However, because of the possibility it is appropriate that action be taken to evaluate the potential threat to personnel and that a confirmation study is warranted. However, because of the possibility of OEW contamination, it is appropriate that action be taken to evaluate the potential threat to personnel and to conduct a confirmation study. The hazard severity is Marginal Category III. The hazard probability is Occasional Level C. Therefore a Risk Assessment Code (RAC) of 4 is assigned to this project site.

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

CLIPPER MOUNTAIN WILDERNESS

SIZE: 26,000 acres, which may include other Federal, State and private lands

LOCATION: San Bernardino County; 50 miles west of Needles, California
(Note: Boundary set backs from roads or trails are 30 to 300 feet)

NATURAL RESOURCES: This wilderness encompasses a large mesa with surrounding canyons and hills to the southeast. Tracing the old World War II trail 7 miles up the northern slope of the Clipper Range may provide a glimpse of the bighorn sheep that reside within this wilderness.

ACCESS: This wilderness is approximately 28 miles east of Ludlow, California and south of Interstate 40. Access the southern boundary from Route 66, east from the Ludlow to Danby Road. Go north 2.3 miles on this dirt road to the intersection of the Southern California Gas Pipeline, which forms the southern boundary of the wilderness. A high clearance vehicle is recommended. Parking is not permitted along the pipeline road right-of-way, therefore, you must be dropped off and picked up.

NONFEDERAL LANDS: Private lands may lie within the wilderness area. Please respect the owner and do not use these lands without permission.

MAPS:

Desert Access Guide:
Providence Mountains - #12

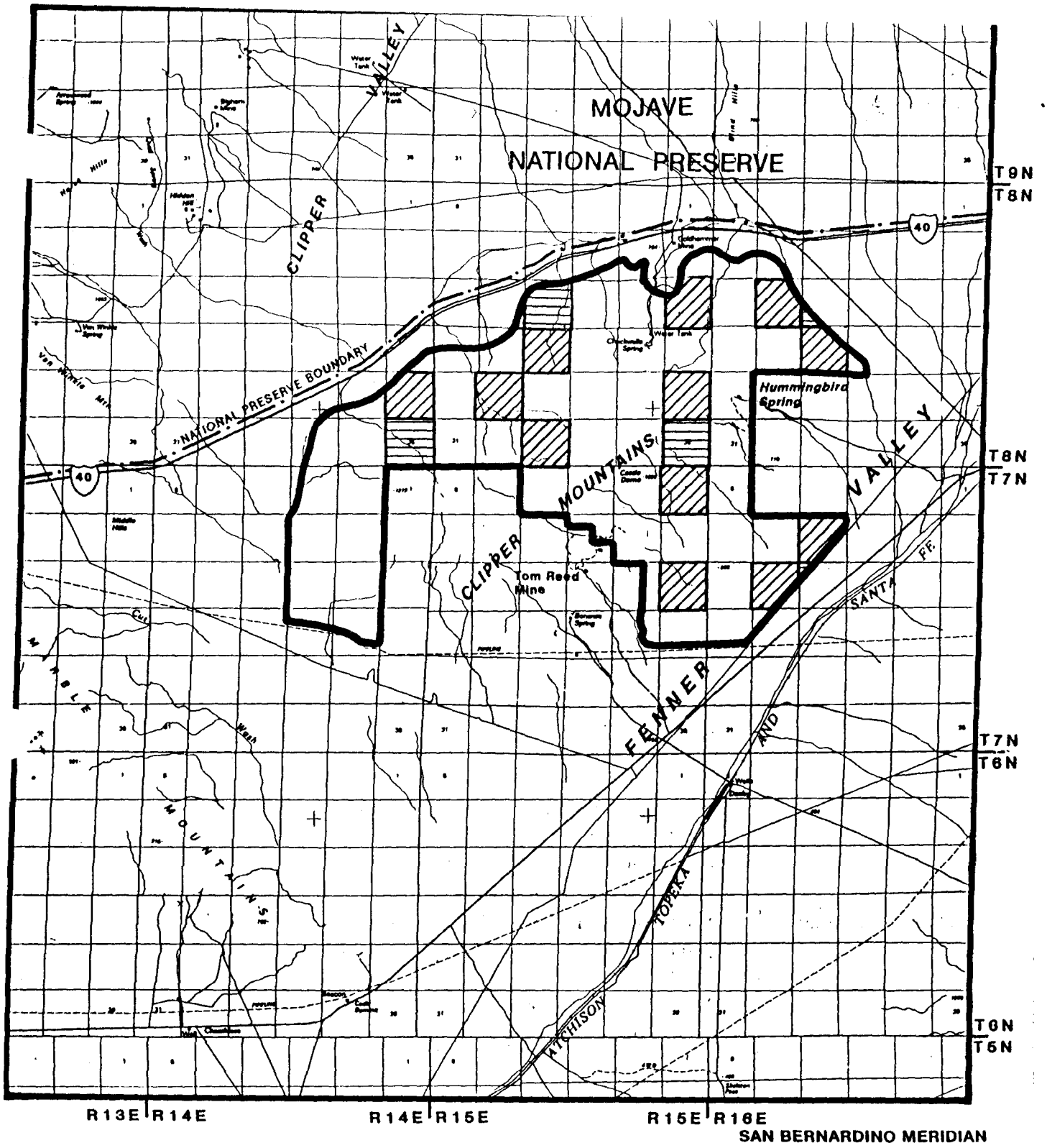
USGS 7.5 Quadrangle Maps:
Blind Hills
Cadiz Summit
Castle Dome
Van Winkle Wash
West of Blind Hills

CONTACT:

Bureau of Land Management
Needles Resource Area
101 W. Spikes Road
Needles, CA 92363
(619) 326-3896

Bureau of Land Management
California Desert District
6221 Box Springs Boulevard
Riverside, CA 92507
(909) 697-5200

These are not the official congressional maps. For detailed information, please refer to the redrafted legislative maps available in all BLM offices.



CLIPPER MOUNTAIN WILDERNESS AREA

MAP 32

Wilderness Area

Split Estate

State

Private

N

0 1 2 3

Miles

DRAFT

E-4

October 1994

ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR
FORMER CAMP ESSEX
ESSEX, CALIFORNIA
PROJECT NUMBER J09CA027801

APPENDIX F

LETTERS/MEMORANDUMS/CORRESPONDENCE

APPENDIX F

LETTERS/MEMORANDUMS/CORRESPONDENCE

TABLE OF CONTENTS

HEADQUARTERS ARMY GROUND FORCES
GROUND CHEMICAL SECTION
ARMY WAR COLLEGE
WASHINGTON, D.C.

August 4, 1942.

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

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, CNB, gallons	200

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 J. FORD,
Colonel, C.W.S.,
Ground Chemical Officer.

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, CNB, gallons	10000

412

2

F-1

SECRET

HISTORY OF THE 93D INFANTRY DIVISION

I. 93d Infantry Division was activated 15 May 1942 at Fort Huachuca, Arizona. The first Negro Division to be organized.

A. The following units comprised the 93d Infantry Division:

1. 25th Infantry Regiment

a. This unit was a regular army unit stationed at Fort Huachuca in peace-time.

2. 368th Infantry Regiment

a. Had been activated 1 year.

3. 369th Infantry Regiment *

4. 593d F.A. Bn (105mm How) *

5. 594th F.A. Bn (105mm How) *

6. 595th F.A. Bn (105mm How) *

7. 596th F.A. Bn (155mm How) *

8. Division Headquarters Company and Military Police Platoon *

9. Division Artillery Headquarters *

10. 93d Quartermaster Battalion *

11. 793 (LM) Ordnance Company *

12. 93d Signal Company *

13. 318th Combat Engineer Battalion *

14. 318th Medical Battalion *

15. 93d Cavalry Reconnaissance Troop *

B. The first seventeen weeks of basic training was completed 4 October 1942.

1. Third Army tests were held during the week 5 - 10 October, 1942, with satisfactory results.

2. From 1 August 1942 on the Division furnished a cadre for the 92d Division consisting of 128 officers and over 1,200 enlisted personnel.

II. MANEUVERS

A. The first maneuvers in which the 93d Division participated were the "D" exercises during the period 14 March 1943 to 25 March 1943.

1. Maneuver Boundaries

South and west to San Rafael, Arizona. North to Canelo, Ariz. Southwest to Lochiel, Arizona, and to the east the Huachuca Mountains.

B. On 31 March 1943 the Division started moving to Louisiana for maneuvers which began on 6 April 1943.

1. The maneuver area extended as far as Marthaville, Louisiana on the north, Jasper, Texas on the west, DeRidder, Louisiana on the south. The Red River and Sabine River were the water boundaries.

C. The division moved to Camp Clipper in the California Desert for desert training.

1. Starting 9 November 1943 the Division again participated in "D" Exercises in the area between Piute and Turtle Mountains.

2. The Division then moved to the Palen Pass Area for IV Corps maneuvers.

a. Desert operations were stressed in these operations.

D. Early in January, 1944, the Division moved to Camp Stoneman, California for staging, then to the Port of Embarkation at San Francisco for trans-shipping to Guadalcanal and Solomon Islands. The Division closed 5 March 1944.

HEADQUARTERS CALIFORNIA-ARIZONA MANEUVER AREA
PO 183, Los Angeles, California

8 February 1944.

AG 400 GNWXD

SUBJECT: Target Ranges.

TO : See Distribution:

1. Reference is made to ltr., AG 400 GNWXD, 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
819th TD Bn	5
711th TK Bn	5

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Headquarters, Army Service Forces
Office of the Adjutant General
Washington 25, D.C.

SPX 370.05 (17 Feb 44)OB-S-SPOPI EVH/sw - 2B939 Pentagon.

17 February 1944.

SUBJECT: Evacuation of the California-Arizona Maneuver Area.

TO: Commanding General, Ninth Service Command;
Director of Materiel;
Director of Supply;
Chiefs of Technical Services.

1. War Department directive to Commanding General, Army Service Forces of 12 February 1944 is quoted for your guidance and compliance:

"1. The rehabilitation and evacuation of equipment in the California-Arizona Maneuver Area is and will remain the responsibility of the Commanding General, Army Ground Forces, until such time as it may be mutually agreed by the Commanding General, California-Arizona Maneuver Area, and the representatives of the Commanding General, Army Service Forces, that such responsibilities should be taken over by Army Service Forces, which date shall not be later than 1 May 1944.

2. It is desired that you provide suitable liaison officers to assist the Commanding General, California-Arizona Maneuver Area, in expediting the return of excess ammunition, equipment, supplies, and repair parts to normal supply channels. Shipments to Zone of Interior depots will be speeded up to the maximum possible.

3. The Pomona Ordnance Base Depot, the San Bernadino General Depot, and other communications zone supply and service installations will be turned over to the Army Service Forces at such time as shall be mutually agreed upon by the Commanding General, Army Ground Forces, and Commanding General, Army Service Forces. Upon transfer of responsibility to Army Service Forces, personnel stationed at the above installations and such stocks then on hand, will be turned over to Army Service Forces. This action shall be completed not later than 1 May 1944."

2. The Commanding General, Army Ground Forces has been directed by the Secretary of War to repair, overhaul, and evacuate all items of equipment in excess of that required and moved out by the Army Ground Forces organizations upon departure from the area. The responsibility for notification to the responsible Army Service Forces agency of the location, amount, and type of equipment to be evacuated rests on the Commanding General, California-Arizona Maneuver Area.

3. The Commanding General, Ninth Service Command:

a. Is designated as the representative of the Commanding General, Army Service Forces in all matters pertaining to the closing of the California-Arizona Maneuver Area.

b. Is charged with the closing of this area and the disposition

Incl. #1 1

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of the property remaining at this station when this area is transferred to the control of the Commanding General, Army Service Forces.

c. Will provide suitable liaison officers to assist the Commanding General, California-Arizona Maneuver Area in expediting the return of excess ammunition, equipment, supplies and repair parts to normal supply channels. Shipment to Zone of Interior Depots will be speeded up to the maximum possible extent. He will request the chiefs of technical services to furnish such assistance as may be necessary in the accomplishment of this mission.

d. Will take necessary action to assure the prompt disposition of salvage accumulated from this area in accordance with existing directives and regulations, any exceptions to be approved by appropriate authorities.

e. Will submit to this Headquarters recommendations at the earliest practicable date for the continued operations of such maintenance installations in the California-Arizona Maneuver Area as may be required.

f. Will give due consideration to freight rates charged for long hauls when issuing shipping instructions out of the area. These excessive rates must be weighed against the value of the property shipped.

g. Will inform this Headquarters when the Pomona Ordnance Base Depot and the San Bernardino General Depot no longer will be required for the purpose of this mission, in order that they may be assigned fillor missions for the Los Angeles Port of Embarkation.

h. Will keep this Headquarters informed as to the status of this mission.

4. The Director of Supply:

a. Will exercise necessary staff supervision through the Commanding General, Ninth Service Command in the expeditious disposition through normal supply channels of all supplies and equipment, excess to the California-Arizona Maneuver Area.

b. Will take necessary measures to determine promptly the items and supplies in the California-Arizona Maneuver Area which are surplus to the Army so that disposition in place can be effected under the staff supervision of the Director of Materiel to extent possible thereby avoiding unnecessary handling and transportation.

c. Will provide the required supervision of all maintenance and storage matters.

d. Will coordinate his activities with the Director of Materiel.

5. The Director of Materiel:

a. Will exercise necessary staff supervision through the Commanding General, Ninth Service Command:

(1) For the disposition of property surplus to the need of the War Department so that expeditious disposal may be effected through the Treasury Department, Procurement Division, or otherwise, to the extent appropriate.

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(2) For the prompt disposition of salvage accumulated from the area, in accordance with existing regulations, any exception to be approved by appropriate authorities.

b. Will coordinate fully with the Director of Supply as to his plan for prompt processing of property as surplus.

c. Will make necessary arrangements with the appropriate agencies for the prompt disposition of real property which may be determined surplus.

6. The Chiefs of Technical Services:

a. Will provide necessary assistance as may be requested by the Commanding General, Ninth Service Command.

b. Are authorized to send representatives to the California-Arizona Maneuver Area, reporting to the representative of the Commanding General, Ninth Service Command. Such officers will be qualified to advise and be empowered to act for the chief of technical service in conjunction with the staff of the service command on matters pertaining to the disposition of property excess to the needs of this area; as to what property is economically repairable; as to where the material will be repaired; and as to what property is excess to the needs of the Army and should be declared surplus thereto. All operations of these officers will be coordinated through the representative of the Commanding General, Ninth Service Command.

7. The general hospitals in the area will continue in operation after 1 May 1944 pending determination of future requirements.

By Command of Lieutenant General SOMERVELL:

/s/ J. A. Ulio
J. A. ULIO,
Major General,
Adjutant General.

COPIES FURNISHED:
Commanding General, Army Ground Forces;
Deputy Chief of Staff for Service Commands, ASF;
Director of Personnel, ASF;
Director, Military Training Division, ASF
Fiscal Director, ASF
Director, Planning Division, ASF (10);
Director, Mobilization Division, ASF.

C O P Y

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93RD

INFANTRY DIVISION

SUMMARY OF OPERATIONS

in

WORLD WAR II

15 May 42
TO
3 Feb 46

Prepared By The
Historical Section
93rd Infantry Division

March, 1946

Finance Officer	: Major Milton E. Patterson
Chaplain	: Major John A. DeVeaux
Quartermaster	: Lieutenant Colonel William L. Kay
Special Service Officer	: Captain Robert Browning
Surgeon	: Lieutenant Colonel William S. George

b. Training and Preparation for Overseas Movement.

Basic and advanced training were accomplished at Fort Huachuca between May 1942 and March 1943. In April 1943 the Division moved to the Louisiana Maneuver area, where it maneuvered against the 85th Division. In July it moved to Camp Clipper, California for desert training and maneuvers and for Army Ground Force tests. The Division remained at Camp Clipper during the rest of 1943 and completed refresher courses in basic training; physical conditioning; individual, small unit, and major echelon combat exercises. Included in this preparation for combat was maneuvering under close-in, overhead artillery and small arms fire. All personnel completed a strenuous infiltration course, in which ball ammunition was fired close to the prone trainees and exploding TNT charges simulated enemy grenades. The Army Ground Forces pre-embarkation tests were completed satisfactorily and the Division was pronounced ready for Combat. In November and early December the Division maneuvered against the 90th Division. The remainder of December and early January 1944 were taken up in preparation for overseas movement, and in January and February 1944 the Division moved to the San Francisco Port of Embarkation and overseas. (E, F13)

During 1942 and 1943 several changes took place in the command. In November 1942 Major General Fred W. Miller relieved General Hall as Division Commander, and in May 1943 Major General Raymond G. Lehman relieved General Miller. General Lehman remained as Commanding General until the

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
WASHINGTON 25, D. C.

2029508 ADL:WK

JUN 1 - 1949

MEMORANDUM

To: Manager, District Land Office,
Los Angeles, California.

From: Director, Bureau of Land Management.

Subject: Notation of Tract Book and other records of possible danger because of Army use of certain lands.

Reference is made to our memorandum of May 11, 1945 and to your reply of May 22, 1945 relating to the use by the Army of certain lands in Tps. 8 and 9 N., Rs. 16 and 17 E., and Tps. 7 and 8 S., R. 20 E., S.B.M., California.

Attached is a copy of the letter of April 29, 1949 from the Assistant Chief of Engineers for Real Estate advising that a revised certificate of clearance relating to Camp Essex shows that the lands in the following areas are to be restricted to surface use only inasmuch as the areas have been heavily impacted with mortar fire: T. 8 N., R. 16 E., secs. 17, 18, 19, 20, 29, and 30.

It is believed that your tract book and plat records should carry a notation of this condition and that the attention of any applicants desiring these lands should be called to the fact that the use of the lands should be restricted to surface use only.

Roscoe E. Bell
Associate Director.

ord/5/26/49

cc: R.A. Reg. II
Branch A.L.

SEP 30 1954

Recorded in Book 3463, Page 117
Official Records, San Bernardino
County, California

A

AFFIDAVIT

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:

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 259 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

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 4-1/2 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 2-1/4 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 1-1/2 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:

Beginning at the Northeast corner of Section 8, Township 7 North, Range 13 East; thence Southwesterly in a direct line 3-1/2 miles more or less to a point on the South line of Section 13, Township 7 North, Range 12 East distant 1/2 mile West from the Southeast corner of said Section 13; thence Southeasterly in a direct line 4-1/2 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 3-1/2 miles more or less to the Northeast corner of Section 26, Township 7 North, Range 13 East; thence Northwesterly in a direct line 4-1/4 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 12-1/2 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 5-3/4 miles to the Southeast corner of Section 6, Township 6 North, Range 19 East; thence Northeasterly in a direct line 11-1/4 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 Southeast corner of said Section 8; thence Northwesterly in a direct line 3 miles more or less to the point of beginning.

PARCEL 16:

Beginning at the Southwest corner of Section 34, 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 Northwesterly 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 2-3/4 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 5-1/4 miles more or less to a point in the South line of Section 35, Township 7 North, Range 19 East distant 1/2 mile from the Southeast corner of said Section 35; thence Southwesterly in a direct line 6-1/2 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 5-1/2 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 4 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 2, Township 4 North, Range 16 East; thence Northwesterly 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:

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 28, 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 M. Swartz

ROBERT M. SWARTZ
Lt. Col., Corps of Engineers

SUBSCRIBED AND SWORN TO BEFORE ME this 13th day of September 1954.

Irene M. Ettinger

Notary Public
in and for said County and State

Chapter XIV

Camp Clipper

"Halt!" commanded the sentry. Out of respect for his army rifle, I braked the pick-up to a stop. However I was more that a little bit provoked at the high-handedness of this soldier for thinking he had the right to stop me from proceeding on my trip to town over the very road I had built myself and spent long exhausting hours in the task of maintaining.

This was the year 1943, and Ida and I had been keepers of the caves now for ten wonderful years. With the exception of the deference and homage I found it wise to pay to my "queen", I took my hat off to no man, for I had come to feel like a king on "my mountain", and master of all I surveyed, especially that twenty-two miles of road I'd labored over so long and hard. That a non-ranking soldier boy could tell me I had not the right to travel my own road was unthinkable. I would pull rank and report him to the provost marshall. When I reached towards the glove compartment to get a pencil to make note of the boy's name and company number, he took two steps backwards, raised and cocked his rifle and aimed it directly at my head. Realizing that he had figured I was reaching for a pistol, I threw back my head and laughed. This relaxed his tensions as well as my own.

I didn't bother to explain my purpose to report him (indeed the soldier was only carrying out orders in a very military manner), and I guess that more than once he has enjoyed telling of his first victory in armed combat.

This was my first trip to town since the 33rd Infantry Division, made up largely of reserves from the midwest, had been moved into the newly constructed Camp Clipper. The camp was named after the adjacent Clipper Mountains. The terrain was hot, dry, sandy, dotted with sagebrush and cactus, and selected as a fine location for orientation and training in desert warfare. The powers that be didn't bother to ask me if I would be

inconvenienced to have 14,000 troops camped in "my front vard", or if I would object to having my resort and means of livilihood blocked off from civilization. No one loves his country better than I, nor wanted more to see America win the war we were involved in, but I just want to make it clear to my readers that I objected to being pushed around.

When the sentry explained to me (with persuader in hand) that I would have to use the old Fenner road to the highway, I realized he meant business; and since he had no way of knowing what an important guy I was in these parts, I followed his instructions. Of course I was fuming all the way, and decided to drive straight to Camp Clipper Headquarters. When I explained my predicament to the officer of the day, I was politely received and presented with a pass which allowed me and my family to use the Essex road and to visit the Camp at any time. I returned home to tell Ida that we were in the good graces of the United States Army and would share our road with them.

My first encounter with the armed forces was not the worst I was to experience. The following Sunday we were besieged by about 3,000 men in uniform who arrived in every kind of vehicle the camp had to offer. During the fifteen months we had been at war, we had had very little company due to gas rationing and to the fact that so many had been called to arms or were working in defense six days a week. Now here were more guest than we were geared to entertain.

We explained to the boys that we were sure glad to see them, but would be unable to show the caves as there were just too many of them for us to handle. We visited with them in small groups, and told them to make themselves at home hiking around and looking at our birds, and generally speaking, doing anything to make themselves comfortable. They took us at our word, and within an hour there were hundreds of soldiers on top of the cabins, our home, garages and bird pens looking for the view. I was crazy with fear that some of the rooftops would advantageous points from which to shoot pictures and enjoy collapse. But the thing that made me really wild was the sight of a dozen of them swimming in our drinking water reservoirs.

I climbed onto the top of an ambulance and yelled so loud that it echoed from one canyon to another, "Attention!" The echo did the rest, following my command like a top seargent repeating the command of his captain. In a moment everything

LOOKING DOWN ON THE CAMPSITE. RESERVOIRS IN THE FOREGROUND

was quiet. Then I introduced myself and thanked them for coming to see us. "I'm mighty happy to see you men here today, and hope you will all come back real soon in small groups, so we can show you the caves and give you a real fine time. But for now I have bad news for you. I have been notified by your commanding officer that the 33rd division is to return to camp at once. So long for now!" As one man, the soliders climbed back onto their vehicles to return to Camp Clipper.

As I descended from the ambulance, an army officer stepped up and announced, "I am Colonel Echart, the superior officer in command of Camp Clipper. I don't recall giving any such order."

"Howdy, I'm Jack Mitchell, Keeper of the Caves, and here I have no superior," was my answer. I gave the order for you Colonel, because those boys were wrecking my place."

He told me, if that was the way I felt about it, he would put the place off bounds. That thought was a disheartening one, for Ida and I had already begun to realize that if we were to be cut off from visitors from the civilian world for the duration, we must in some way capitalize on the boys from the army camp as our only potential visitors.

I mustered my warmest smile and invited the Colonel, "Now Sir, let's not be hasty. Please do come inside, and let's talk this over. We can't feed the whole army, but if you would care to invite three of your fellow officers to join you, Ida and I would be real happy to have you sit down with us to a nice dinner of roast phesant, dressing, gravy, and the lightest golden biscuits you ever laid a lip over. What do you say, Colonel?"

For some reason, I didn't have to twist his arm a darned bit. He just smiled from here to here, and immediately introduced the three officers with him. "Captain Madden, Captain Turnboldt and Lieutenant Echart, my son, this is Mr. Mitchell who has invited us to a pheasant dinner."

The handshakes of the younger officers were so hearty, I half suspected they were hanging onto me out of fear I would rescind my invitation. What greater temptation could I have put before men accustomed to army rations than the kind of home cooked dinner I had promised them?

Ida had quietly been observing the turn of events, and needed no further signal to commence preparation of a banquet. I led the four officers to the front porch where we sat down to talk things over. "Now, gentlemen," I began in my most businesslike manner, "the army has moved in down there and isolated

us from the outside world. I have no contact with civilian life on which I have depended for my living. Now, since you officers have no accomodations at Camp Clipper for your families, I suggest that you rent our cabins here and bring your wives and families in where they can be near enough for you to visit them several times a week at least. You will have good beds, and since this is twenty-seven hundred feet higher than Camp Clipper, you will be where it is nice and cool."

My sales pitch got the results I had aimed for at once, and from that moment Mitchell's Caverns became unofficial headquarters for the "brass".

After an excellent dinner, the Colonel sat back in his chair, and lighting a long cigar announced, "For all the trouble my men have caused you, I will have notices posted placing your property out of bounds."

Now the C O is a mighty smart man, but he was slow to understand the extent of my problems. I'd have to do a little more promotion work. "Let's not act in haste, Colonel. While these men are taking their desert training here, there is no place for them to go for amusement; and there is nothing down there at your camp for them to bathe in but their helmets. They are going to get mighty sick of themselves in all that sweat and sand."

"Suppose you arrange for, say one company at a time, 200 men, to march the sixteen miles from Camp Clipper to Mitchell's Caverns every day. When they get here, I will meet the men on the campground where I could explain to them some of the plants of the desert which might help save their lives sometime with the moisture and food they contain. Then I could take part of them at a time through the caves, which I couldn't show them today, and the rest of the company could be bathing in our four shower rooms. The groups could rotate then and see the caves or shower as the case might be."

I paused to observe from the expressions of the officers their reaction to my suggestions. They liked them! Now we joined forces and made plans together for carrying out our program, which was to be officially a part of training, and all groups would be under the command of officers.

Of course these troops had to start with shorter marches to get them into condition, but in a fairly short time they were ready for the two day forced march of thirty-two miles to the caves and back. They were on strenuous water rations of a quart a day from the time they left camp until they returned at night,

even when the temperatures some days went as high as 130 degrees down on the valley floor. One of the most difficult problems assigned these infantrymen was in the use of the lenastic compass on desert maneuvers. Platoons were dispatched into the heart of the desert for five days with but one day's ration. Platoon leaders were given compass directions to their stopping point for that night. Rations for the following day would be distributed there provided that the leader had been able to find the right stopping point.

One night after supper Ida and I were reading in the living room when we heard a knock at our door. Opening it, I found a young soldier, terribly exhausted, and reminding me of a lost puppy who had found a friend. He had got lost from one of these platoons, and had been without water since the day before. Seeing our lights after dark, he had made his way to our house. Ida brought him water at once, and he drank crazily. We warned him of taking too much too fast, but his thirst knew no reason. Suddenly he turned pale and ran from the door.

When he returned from his fit of vomiting, Ida gave him a little warm milk and prepared a bed for him. Now that his physical comfort and safety were assured, he was overcome with a fear of being AWOL. I promised to see the Colonel, who was at home here that night, and the boy fell into a sleep of complete exhaustion. The Colonel was more than kind, arranging for the boy to spend a short leave with us until he could recover from his experiences.

Ida made a pet of him for several days stuffing him with fried chicken, oatmeal cookies and such, until it was difficult for him to admit he was ready to return to camp life and C rations.

A short time later, we received a nice letter from the boy's mother down in Arkansas thanking us for our kindness to her son, who had never been away from home before. She said she had asked for God's blessings for us.

The march to Mitchell's Caverns was the final conditioner required of all troops before they left Camp Clipper. As soon as the Colonel was ready to start sending the first company on the long march, he notified me. Early on the morning that the first group was expected, Ida and I watched the cloud of dust created by 200 pairs of army boots, and made preparations to entertain the boys who would be dragging those boots to our doorstep. Ida made gallons of lemonade and huge plates of sweet

smelling cookies, while I got ready my basin of water and collection of plants for my demonstration on the camp ground.

By the time the hot, dusty men came up the final lap of their climb I was all set for them. Their captain in charge turned the entire detail over to me. As soon as he did that, I stood up on our concrete camp table and began, "Now men, what I have to tell you may be awfully important to you someday. It may even help to save your lives. But who wants to live if his feet are hurting like yours are after that long hot hike, so all you guys move up close in a circle around me. Park your packs back there; then sit down and take off your shoes. Lie down if you want to, and listen to what I have to say." So far as I know I am the only man alive who ever lectured to an audience which was lying flat on its back with its shoes off.

Then I would begin again. "I know you fellows are allowed only one quart of water a day. But you just heard your captain say, 'The detail is yours, Mr. Mitchell' and I have made special arrangements with the war department so you boys can have all the water you want while you are my detail. Now drink up the water in your canteens and you can fill them again before I return you to your captain." That brought loud cheers and a rattle of canteen tops, then a louder silence while 200 men tilted back their dusty heads, wiped the sweat from around their mouths and swallowed the small amount of water that remained in their canteens.

The captain in charge always looked embarassed; some of them even blushing like a desert sunrise, as they watched this breach of discipline. To ease the situation I handed the fellow my canteen which I had handy for this purpose and said, "The regulations don't say anything about not drinking lemonade, Captain, so have one one me." Roars of laughter always followed this as the captain reached as eagerly for my canteen as his men had for theirs.

We were ready then for the demonstration. I picked out as light complexioned a boy as I could spot in the group and asked him to step up on the table with me. His hands were caked with dirt from the dust and sweat of the day. I took a chunk of the Yucca baccata root, pounded it with a stone to separate the fibers so the natural juices would run into the pan of hot water I had there. After squeezing the pulp a few times, I knew I had enough "soap" to make a suds, so I swished the water and then held up the pan for all the men to see the rich suds the yucca fiber juice had made. I asked my white-skinned partner to put

one hand in the pan of water while I gave it a vigorous scrubbing. Then I asked him to hold up both his hands for his comrads to see. This was a real good demonstration until some smart alec asked where they were going to get a basin of warm water on a forced march, when the entire ration of the day was only one quart per man.

Showing the boys how to get water from the barrel cactus proved to be a barrel of fun for me. Already most of the men had made the acquaintance of this variety, covered entirely with viscious spines. Most of them vowed they would die of thirst rather than approach the demon. Dauntless I proceeded with my prepared demonstration, borrowing a trench knife from a nearby GI to remove the top and some of the fiberous core from the cactus, thus making a basin. Then I would take my cane and attack the center of the barrel with short jabs until it wept a nice basin of liquid. Many of the boys volunteered to taste and tell of their impressions, which ranged from "soap to skunk" juice, but they all had to admit it was wet.

As soon as my talk was over the boys were divided into groups of twenty-five for their trip to the caves, turn at the showers, time to rest or wander over the place a bit if they wanted. The fellows at the showers first always were the happiest. Baths of any kind were such a rarity that some of the men had taken to walking the six miles in to Essex to pay hard cash for the privelege of a bath in one of the few private homes there.

Ida was always ready at this interval to serve ice cold lemonade to the boys, most of them for the first time in weeks in a real home and happy just to take a good look at one. Even the wives of the two officers making their homes in our cabins came in for their share of looking at the pictures of the men's children. The boys took turns holding the small tots of Mrs. Madden and Mrs. Turnbull, every one of them hungry for the feel of a child in his arms.

Naturally the men, especially the ones from those middle west states, where dew is something you see on the grass in the morning and not something you owe at the bank, used to spend a lot of time crabbing about the desert. Loving the desert as I do, I couldn't stand still for that kind of talk, so I would go into a long spiel about the wonderful and uncomplicated life of the desert where a man could have a front yard big enough for 250,000 people to own a hundred acre ranch each. I looked up into the face of a young captain listening intently, and something about the look on that lad's face inspired me to say, "I wouldn't change places with John D. himself." I thought I had that bunch convinced, for they all wandered off, one by one. I found out a few minutes later that the attentive young captain was Rockefeller Prentiss. He is John D's grandson. But I stuck to my story: I wouldn't trade places with him either.

Watching night artillery practice from our front porch was like having a grandstand seat for a huge Fourth of July fireworks display, only our exhibit was on a much larger scale. Tracer amunition shot across the sky leaving patterns in bright color, to fade slowly as they were replaced by fresh patterns of cross-fire plaid or radiant sunbursts of sparks.

Troops at practice were divided into a Red Army and a Blue Army. Sometimes thousands of men from one of the many nearby training camps scattered about the Mojave Desert would come to battle it out with the troops of Camp Clipper, just as intercollegiate teams meet for a New Years football game.

Under this canopy of bright fire, the ground troops had to crawl on their bellies to avoid being hit by the live amunition. When these boys were sent overseas they would be well seasoned to the swish and ping of real bullets.

We know of one lad who never made it overseas, for his fate was sealed by the combined forces of desert and battle life. Crawling through a trench under fire one night, he suddenly found his face within inches of a rattle snake, coiled and ready to strike. Because of the nearness of the other soldiers behind him, he was unable to retreat, and the trench was too narrow for him to move to either side. He panicked and jumped up exposing his body to the machine gun fire. Of course he was killed instantly. His life was sacrificed just as heroically as if he had been charging an enemy line.

"The 33rd infantry Division has been alerted for a move overseas." This was the solemn announcement of General Millikin to all his troops assembled in the outdoor theatre one Sunday afternoon in May.

We received word that same night when Captains Madden and Turnbull returned home. For several days there was much excitement and great activity packing and crating supplies for the move to who knew where. Immunization shots were the chief subject of conversation among the few men who visited us in the succeeding weeks.

Early in June the troops broke camp and left, and Camp Clipper was deserted except for a small detail left behind to

guard and maintain it for its next occupants. Ida and I felt deserted too, for we had come to love the bustle and excitement of army activities. We would miss the companionship of our guests.

In a matter of a few days, the camp was humming with activity again, for the 93rd, a division of colored troops from Fort Huachuca, Arizona, replaced the 33rd division. Soon we were entertaining these boys from Brooklyn and Chicago and the south. Desert life was so strange to them that we always figured they deserved special credit for the way they took their training.

One group of these men was detailed to repair our road right up to our property. We were very grateful, for this was a help to us as well as to the men who marched over it. We got permission from their captain to show these men our appreciation by inviting them to a chicken dinner.

The boys arrived by jeep all grinning happily in anticipation of the fried chicken. When Ida had the table piled high with golden fluffy biscuits and crisp southern fried chicken, bowls of thick cream gravy and jars of homemade jams, she called our company to the dining room. With big eyes and good appetites they sat down at once. One lanky lad with arms like buggy whips reached out hastily for the platter of chicken.

"Wait just a minute, boy," ordered the sergeant in charge, as he placed a restraining black hand on the lad's long arm. "The Mitchells have invited us up here to their house for a nice dinner, and we ain't gonna eat a bite of it until we've thanked the Lord for such nice folks who is so good to us."

All heads were bowed, and the sergeant's deep voice broke the silence, "Dear God, bless this food, of which we is about to partake, and give us the rememberin' always of the gratitude we feels for the goodness of the Mitchells."

By January of 1944 the 93rd division had received their orders to move overseas, and once more only the guards were left at Camp Clipper. It was next occupied in May by about 350 Italian prisoners of war, who were sent in to post the artillery duds which were lying everywhere making the area unsafe for us desert rats, especially for the prospectors who were anxious to get back to their diggings.

The non-commissioned officers in charge of the Italians had a good thing while it lasted. Their prisoners didn't know one kind of stripe from another, so they saluted every man in khaki for fear of neglecting an officer. The Italians seemed to appreciate the courtesy of the American soldiers in command of

them. During an assignment on the desert, the sergeant gave the order, "At ease." One prisoner who spoke a little English told of his surprise that they should ever be put at ease in the presence of a superior officer.

By October the prisoners of war and their soldier guards were removed, and Camp Clipper was completely dismantled. What equipment and materials and supplies couldn't be used elsewhere were burned or buried, and the only sign that this had once been a bustling community was the roadways between the rows of barracks. But time will reclaim these too, and soon this part of the desert will look like it has for thousands of years. The desert winds will re-seed the ground and someday it will blossom again with sage and creosote brush.

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
Ventura Field Office
2493 Portola Road, Suite B
Ventura, California 93003

November 22, 1995

Mike Harper
Project Leader
Attention: SIOAC-ESL Larry Dauphin
Department of the Army
Defense Ammunition Center and School
Savanna, Illinois 61074-9639

Subject: Species List for Former Camps Essex, Iron Mountain, Ibis, and Needles Division, San Bernardino and Riverside Counties, California

Dear Mr. Harper:

This letter is in response to your correspondence dated October 2, 1995 requesting a compilation of listed and candidate species that may occur in the vicinity of the former Department of Defense (DOD) sites noted above. Your request was forwarded to this office by the U.S. Fish and Wildlife Service's (Service) Carlsbad Field Office and received on October 26, 1995. The former DOD camps at Essex, Iron Mountain, Ibis, and Needles Division may contain unexploded ordnance and/or explosive wastes. The U.S. Army Defense Ammunition Center and School (USADACS), in coordination with the U.S. Army Corps of Engineers, is preparing investigative reports evaluating Department of Defense facilities that stored explosive wastes. The information enclosed with this letter will be used by the USADACS in preparation of its investigative report for the referenced sites.

In addition to the project areas in San Bernardino County, our file search included that portion of Camp Iron Mountain that lies within Riverside County. Riverside County and counties to the south lie within the area of responsibility of the Service's Carlsbad Field Office. Because all but a very small portion of the project areas lie within San Bernardino County, the Carlsbad Field Office forwarded your request to this office. In the future, should a significant portion of a project lie within or to the south of Riverside County, requests for technical assistance on such projects should be directed to the Carlsbad Field Office.

Our records indicate that all four camps support the desert tortoise (*Gopherus agassizii*), federally listed as threatened, and the following category 2 candidates for Federal listing: pallid bat (*Antrozous pallidus*), California leaf-nosed bat (*Macrotis californicus*), occult little brown bat

(*Myotis lucifugus occultus*), southwestern cave myotis (*Myotis velifer brevis*), spotted bat (*Euderma maculatum*), Pacific western big-eared bat (*Plecotus townsendii townsendii*), and the greater western mastiff-bat (*Eumops perotis californicus*).

The Needles Division Camp, in the vicinity of the Colorado River, supports the federally listed Yuma clapper rail (*Rallus longirostris yumanensis*). In addition, Camp Ibis may support Howe's hedgehog cactus (*Echinocereus engelmannii* var. *howei*), also a category 2 candidate for Federal listing.

This letter fulfills the requirements of the Service under section 7(c) of the Endangered Species Act of 1973, as amended (Act). If the subject project may affect a listed species, your agency has the responsibility to prepare a Biological Assessment if the project is a construction project which may require an Environmental Impact Statement[1/]. If a Biological Assessment is not required, your agency still has the responsibility to review its proposed activities and determine whether the listed species will be affected.

During the assessment or review process, your agency may engage in planning efforts, but may not make any irreversible commitment of resources. Such a commitment could constitute a violation of section 7(d) of the Endangered Species Act. If a listed species may be affected, your agency should request, in writing through our office, formal consultation pursuant to section 7 of the Act. Informal consultation may be used to exchange information and resolve conflicts with respect to listed species prior to a written request for formal consultation.

Only listed species receive protection under the Act. However, candidate species should be considered in the planning process in the event they become listed or proposed for listing prior to project completion. Preparation of a biological assessment, as described in section 7(c) of the Act, is not required. If early evaluation of the project indicates that it is likely to adversely affect a candidate species, you may wish to request informal consultation with this office.

Should you have any questions regarding the species listed, or your responsibilities under the Act, please contact Kirk Waln of my staff at (805) 644-1766.

Sincerely,

Diane K. Noda

Diane K. Noda
Field Supervisor

[1/] "Construction Project" means any major Federal action which significantly affects the quality of the human environment designed primarily to result in the building or erection of man-made structures such as dams, buildings, roads, pipelines, channels and the like. This includes Federal actions such as permits, grants, licenses, or other forms of Federal authorizations or approval which may result in construction.

CALIFORNIA
ARCHAEOLOGICAL
INVENTORY

ARCHAEOLOGICAL INFORMATION CENTER
San Bernardino County Museum
2024 Orange Tree Lane
Redlands, California 92374
(909) 792-1497
(909) 798-8585 - FAX

5 October 1995

SIOAC-ESL
Larry Dauphin, Director
USADACS
Savanna, IL 61074-9639

RE: Absence/Presence of Sites In Selected Areas of CHL-985

Dear Mr. Dauphin,

Below is the information which you requested on 29 September 1995.

Camp Essex/Clipper

T8N R16E Sec 1-3, 10-30, 33, 34	1 Historic site
T8N R17E Sec 3-9, 17-19	2 Prehistoric, 4 Historic sites
T9N R16E Sec 22-27, 34-36	1 Prehistoric, 3 Historic sites
T9N R17E Sec 31-33	same 3 Historic sites as above

Camp Iron Mountain

T1S R17E Sec 1, 2, 6, 7, 11-14, 18	1 Historic site
(Sec 19-33 are in Riverside Co.)	
T1S R18E Sec 1-15, 17, 18	1 Historic site
(Sec 19-35 are in Riverside Co.)	
T2S R18E In Riverside Co.	
T1N R18E All	1 Prehistoric isolate, 2 Historic sites

Camp Ibis

T10N R20E Sec 13	0 sites
T10N R21E Sec 4-9, 16-19, 21	3 Historic sites
T11N R21E Sec 20, 21, 28, 29, 32, 33	0 sites

Needles Division

T9N R22E Sec 2-4, 8, 10, 11, 14, 15, 22, 23, 26, 27, 34, 35	1 Prehistoric, 2 Historic sites
T8N R22E Sec 1-5, 7-23, 26-36	Many Prehistoric sites
T8N R23E Sec 5-9, 18-20, 27-35	Many sites
T7N R22E All	0 Sites
T7N R23E Sec 1-12, 15, 17-21, 30, 31	Many Prehistoric, 2 Historic sites

Only the T8N R22 & 23E have had systematic surveys. Other areas have had an occasional small survey, but all areas are relatively unsurveyed. These areas encompass 16 7.5' quadrangles, but CHL-985 covers a much larger area in San Bernardino County.

I hope this answers your immediate needs. If I can be of further assistance, please, call me at (909) 792-1497, Tuesday through Friday 8AM-4PM Pacific time.

Sincerely,

Robin C. Laska

F-10

SECTION 10: [redacted]

Location by map coordinates
C-AMA map 1/500,000 (700 - 1180)

1. INSTALLATIONS: (See diagrammatic camp layout)

a. SHOWER BUILDINGS:

(1) Battalion Enlisted Mens shower buildings, total 24.
(See typical photo exhibits, E, G, K.)

(2) Battalion Officers shower buildings, total 12.
(See typical photo exhibits, F, I.)

b. LATRINE BUILDINGS: Total 191.
(See typical photo exhibit B.)

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

(1) Single, total - 30.

(2) Double, total - 119.

(3) Triple, total - none.

d. OTHER STRUCTURES:

(1) Outdoor theater.
(See photo exhibit O.)

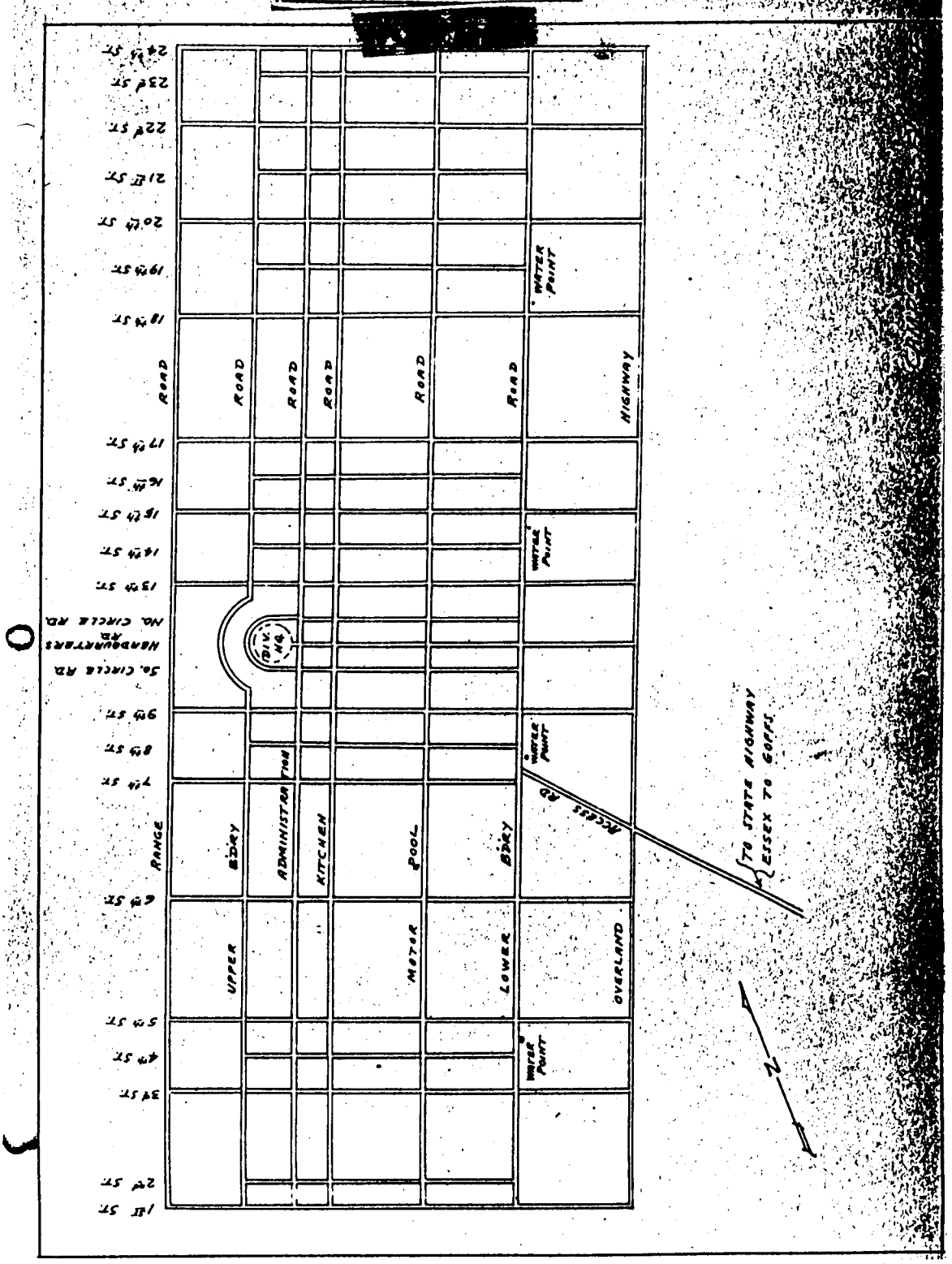
e. WATER SUPPLY INSTALLATION: (See diagrammatic water system layout.)

(1) Source: 2 deep wells (750 ft).

(2) Storage facilities: 1 - 500,000 gal. reservoir, 1 - 50,000 gal. tank. (See photo exhibit K.)

(3) Equipment: 2 deep well pumps, 3 booster pumps. One deep well pump has caterpiller Diesel engine, 2 booster pumps have GMC motors, and one has McCormack Deering 6 cyl. engine.

f. RANGES: (See diagrammatic range layout.)

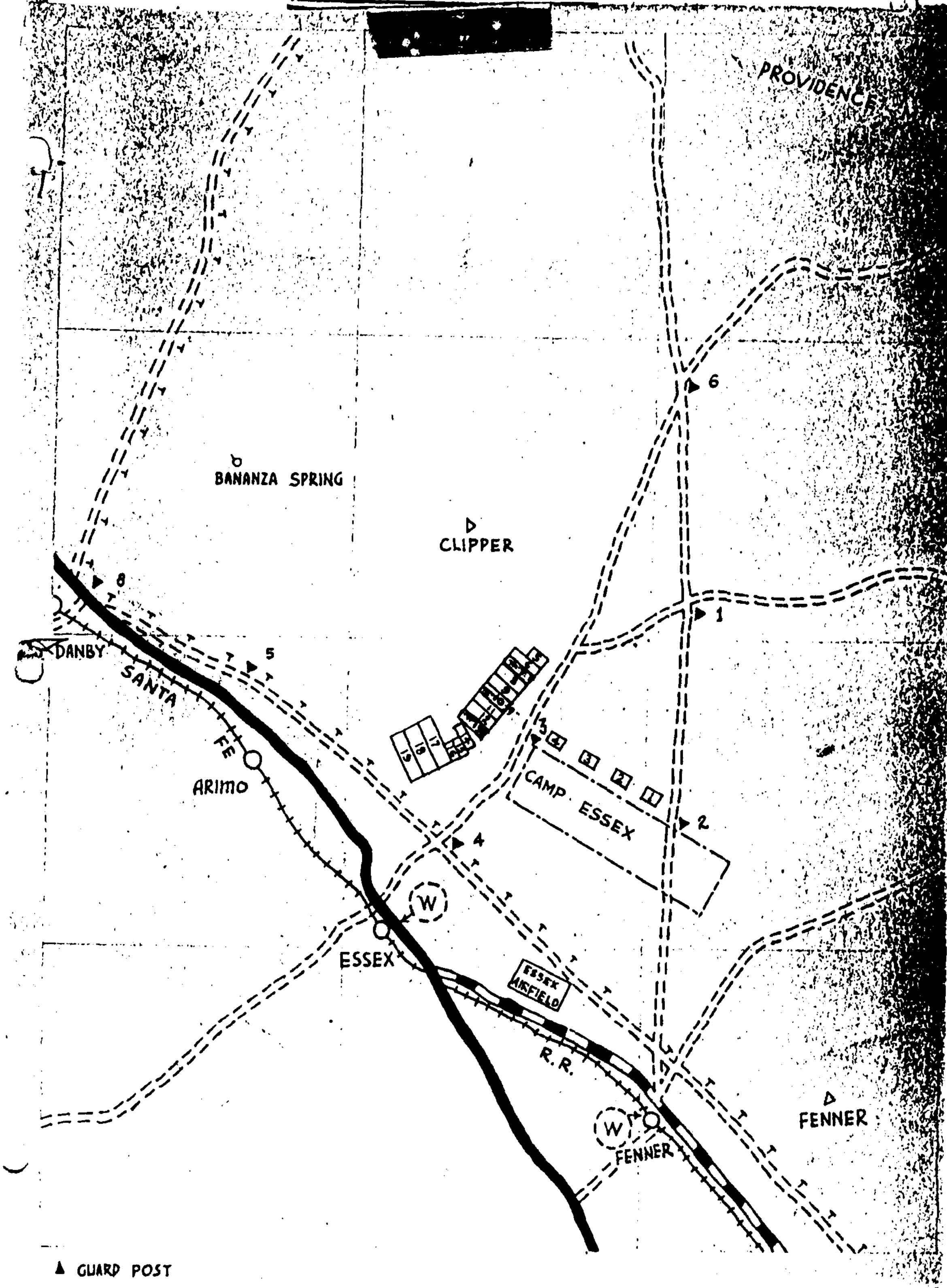


WC Prod files

(SECRET)
GLAZIER RANGE

RANGE	DESCRIPTION
No. 1	KNOWN DISTANCE - .22 Cal. rifle and Carbine, .45 Cal. pistol.
No. 2	KNOWN DISTANCE - .22 Cal. rifle and Carbine, .45 Cal. pistol.
No. 3	KNOWN DISTANCE - .22 Cal. rifle and Carbine, .45 Cal. pistol.
No. 4	KNOWN DISTANCE - .22 Cal. rifle and Carbine, .45 Cal. pistol.
No. 5	KNOWN DISTANCE - 1000 inches. .30 Cal. machine gun and Browning Auto. rifle.
No. 6	CLOSE COMBAT - 225 yds. .30 Cal.
No. 7	[redacted] - .30 Cal.
No. 8	TRANSITION - 10 points. .30 Cal.
No. 9	CLOSE COMBAT - 225 yds. .30 Cal.
No. 10	[redacted] - .30 Cal.
No. 11	TRANSITION - 10 points. .30 Cal.
No. 12	CLOSE COMBAT - 225 yds. .30 Cal.
No. 13	[redacted] - .30 Cal.
No. 14	TRANSITION - 10 points. .30 Cal.
No. 15	KNOWN DISTANCE - 1000 inches. .30 Cal. machine gun and Browning Auto. rifle.
No. 16	KNOWN DISTANCE - 1000 inches. .30 Cal. machine gun and Browning Auto. rifle.
No. 17	KNOWN DISTANCE - 100 - 200 - 300 - 500 yds. .30 Cal.
No. 18	KNOWN DISTANCE - 100 - 200 - 300 - 500 yds. .30 Cal.
No. 19	KNOWN DISTANCE - 100 - 200 - 300 - 500 yds. .30 Cal.

[redacted]



FC 337
8 55A
8 1212

CORPS OF ENGINEERS, U. S. ARMY
OFFICE OF THE DISTRICT ENGINEER
LOS ANGELES DISTRICT
751 SOUTH FIGUEROA STREET
LOS ANGELES 17, CALIFORNIA

ADDRESS REPLY TO:
DISTRICT ENGINEER
LOS ANGELES DISTRICT
CORPS OF ENGINEERS
P. O. BOX 7277, FOY STATION
LOS ANGELES 12, CALIFORNIA

Route		Initial	Date
1	Palmer		9/24
2		MBA	10/3
	Clerk		
	Address		
3	Corbett		

Recs. Action
Information
Distrib.

REFER TO FILE NO.
SPLRM 602 (CAMA - Dedudding)

21 September 1956

Manager, Land Office
Bureau of Land Management
Department of the Interior
215 W. 7th Street
Los Angeles 14, California

RETURN TO: PALMER

Dear Sir:

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,

Harold E. Spickard

HAROLD E. SPICKARD
Chief, Real Estate Division

1 Incl:
Dwg.No.16-13-01

LIST OF LANDS IN CALIFORNIA CONTAMINATED
BY EXPLOSIVES - CALIFORNIA-ARIZONA MANEUVER AREA
COMPILED FROM DRAWING NO. 16-13-01,
CORPS OF ENGINEERS MAP APPROVED OCTOBER 1951

(List Compiled by Status Unit, LALO, 10/12/56)

SBM

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
Secs. 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17

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

T8N 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

ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR
FORMER CAMP ESSEX
ESSEX, CALIFORNIA
PROJECT NUMBER J09CA027801

APPENDIX G

REAL ESTATE DOCUMENTS

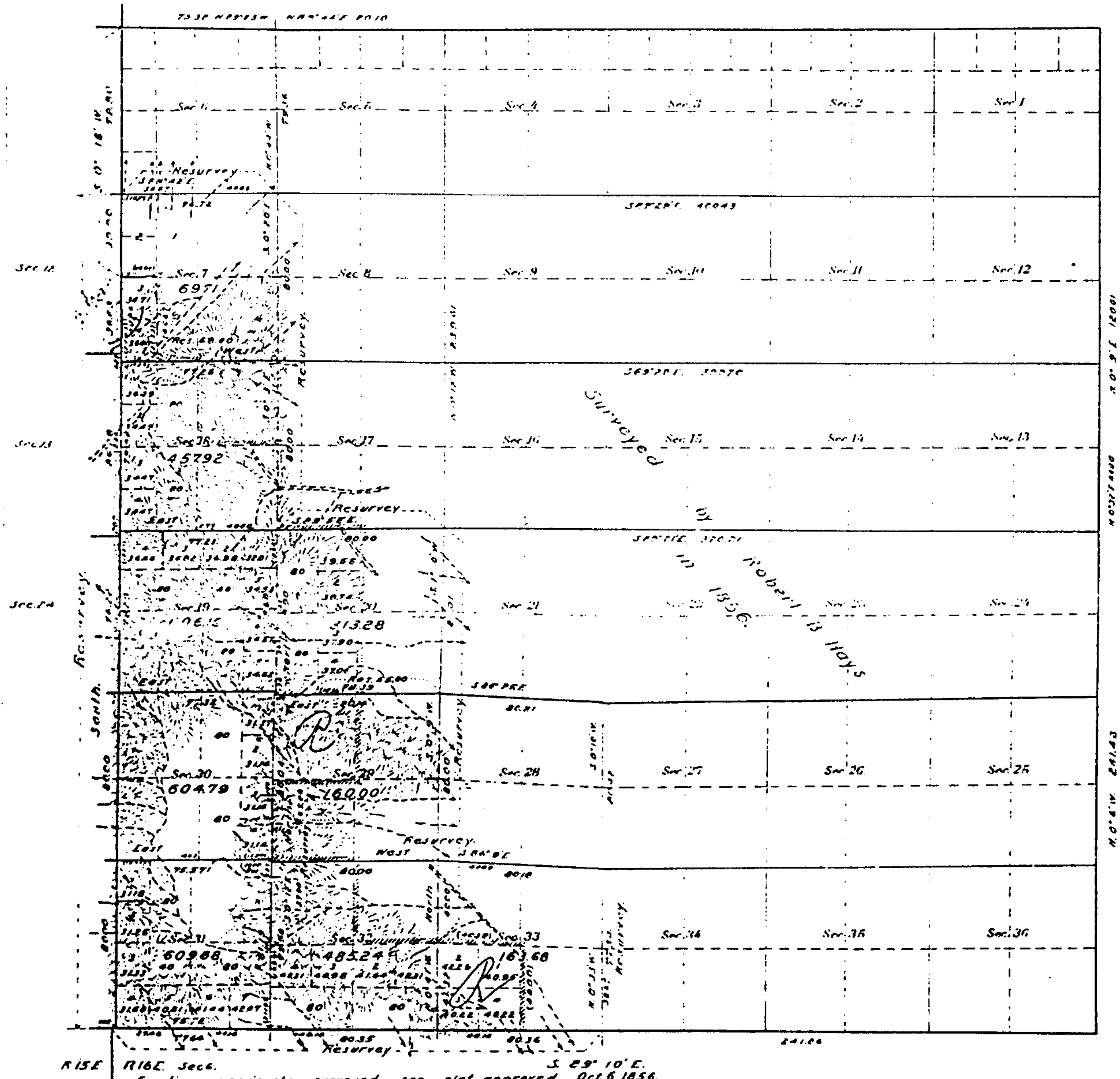
APPENDIX G

REAL ESTATE DOCUMENTS

TABLE OF CONTENTS

Accepted Mo

Township No. 8 North. Range No. 16 East. San Bernardino Meridian. California



For lines previously surveyed, see plat approved Oct. 6, 1856.

Surveys Designated	By Whom Surveyed	Group No.	Group Date	Amount of Surveys Mls.	chs.	lks.	When Surveyed Begun	Completed
West bdy. res.	Dupree R. Averill	66	Oct 16, 1918.	See plat of T. 8 N. R. 15 E.				
South " "	U.S. Surveyor	"	"	2	76	43	Jan. 8, 1921	Feb 2, 1921.
Subdivisions, res.	and	"	"	12	34	25	" 25, "	" 11, "
"	Glenn F. Sawyer	"	"	5	28	75	" 25, "	" 11, "
Connections	U.S. Transitman	"	"		1	26	Feb 11, "	" 11, "

All unreserved lands in this township withdrawn for classification (Taylor Grazing Act) by Executive Order of Nov. 26, 1934, under Act of June 28, 1934, as amended.

Memo 2029508 ADL WK Secs. 17, 18, 19, 20, 29 & 30, 31 used for surface use and lands are heavily impacted. Mortar fire. Memo filed with records.

Memo 6/13/49 - Sec. Calif. Div. of Fish & Game for watering device.

Sec. 30 - memo permission granted to State Fish & Game to install

WARNING:

Secs.

Closed to Small Tract Appl., remain. classification by memo of May 31, 1957 (43 CFR 257.6(c)(4)(iii)) as to: All Land in San Bernardino County

Permission granted to State of California to install Quail watering devices. SW¼SE¼ Sec. 6, SW¼SW¼ Sec. 8

POST TO NEW RECORDS

Filed in U.S. Land Office, Los Angeles, Cal. AUG 1 1924

Dudley D. Valentine
Register.

Areas in Acres	
Public Land previously surveyed	19396.87
Indian Reservation	
Indian Allotments	
Mineral Claims	
Water Surface	
Public Land, surveyed under current contract	3470.49
Total Area.	22867.36

Scale 40 Chains to an inch

Mean Magnetic Declination
Lat. 34° 47' N.
Long. 115° 25' W. Near ¼ sec. cor. of Secs 16

The above map of Township No. 8 North Range No. 16 East of the San Bernardino Meridian California is strictly conformable to the field notes of the survey thereof on file in this office, which have been examined and approved.

U.S. Surveyor General's Office.
San Francisco, California
April 19, 1924

John Glover
U.S. Surveyor General.
For California.

G-1

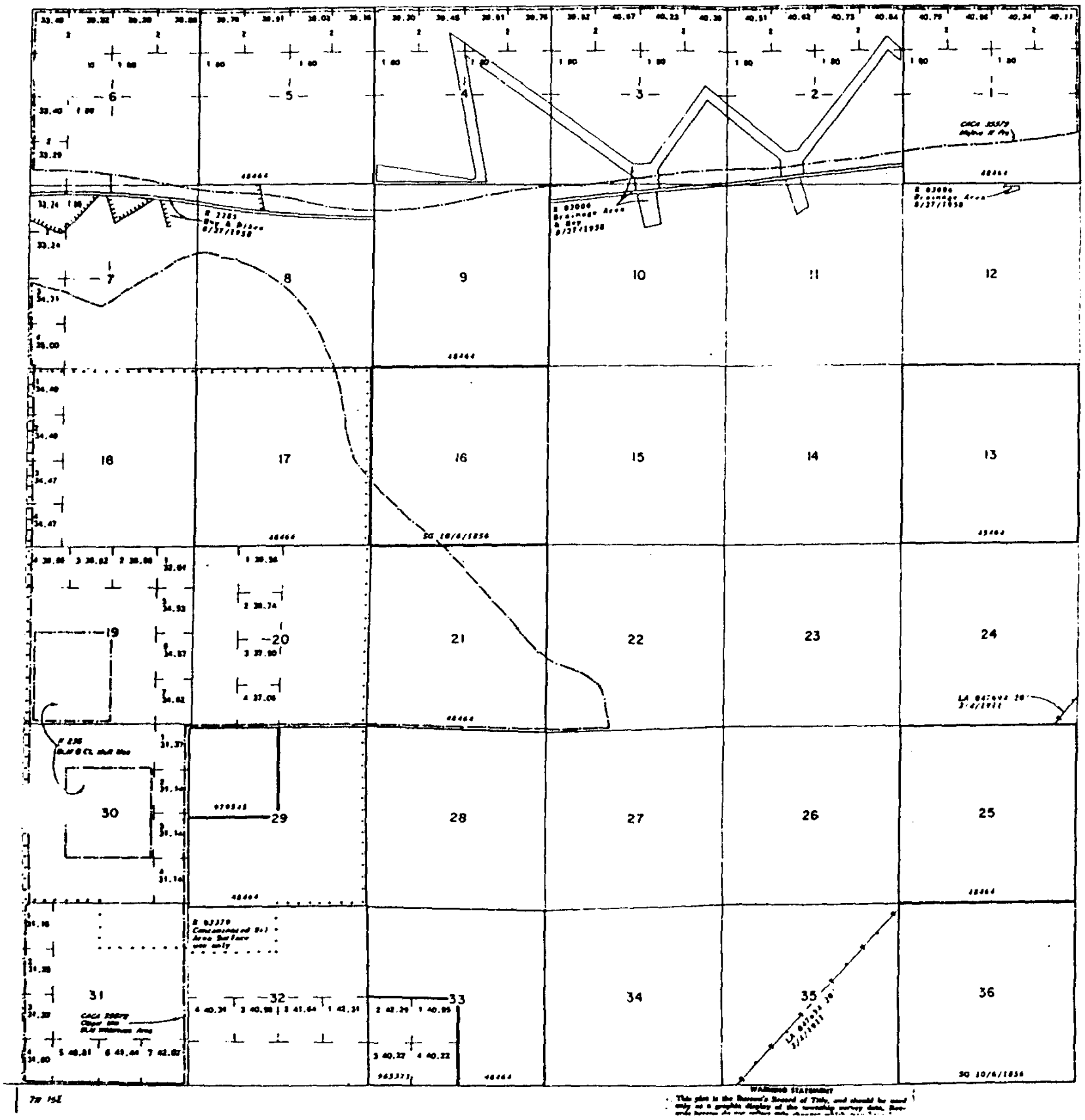
TOWNSHIP 8 NORTH RANGE 16 EAST OF THE SAN BERNARDINO MERIDIAN, CALIFORNIA

SAN BERNARDINO COUNTY

CALIFORNIA DESERT DIST. SEC 15
NEEDLES RA

STATUS OF PUBLIC DOMAIN
LAND AND MINERAL TITLES

MT PLAT



INDEX TO SEGREGATED TRACTS

RESURVEY	ORIGINAL SURVEY			
TRACT NO	T	R	SEC	SUBDIVISION

All Tp within designated California Desert Cons. Area Act of Cong 10/21/1976

Tp within limits of RR Grant __ Rq. Transg. Ae 1940, SO 4/14/1953, SO 10/1/1953

FOR ORDERS EFFECTING DISPOSAL OR USE OF UNIDENTIFIED LANDS REFER TO INDEX OF MISCELLANEOUS DOCUMENTS

CURRENT TO	CURRENT TO
[illegible]	

USE PLATS:

G-2

ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR
FORMER CAMP ESSEX
ESSEX, CALIFORNIA
PROJECT NUMBER J09CA027801

APPENDIX H

NEWSPAPERS/JOURNALS

APPENDIX H

NEWSPAPERS/JOURNALS

TABLE OF CONTENTS

Needles, Cal.
DESERT STAR
(Weekly)
MAY 7 1964

Essex Relives Military Days of World War II

The desert region around Essex is no stranger to army maneuvers. Nor are memories of tanks and soldiers lacking in the minds of the area's residents.

In the fall of 1942 Major General George S. Patton lead an armored division into the area for final training and maneuvers before going overseas to join in World War II. Today, 24 years later, the 1st Armored Division is occupies the same area in preparation for Exercise Desert Strike.

Among the residents who saw history in the making then and are witnessing a more modern army in similar training today, is Mrs. Eunice Craig Gallinari, postmistress of Essex since 1941 and a member of one of the oldest surviving families in the area.

At the time of Patton's maneuver, the Gallinari's operated a gasoline station and country store in Essex, in addition to two huge ranches east of that town. The family had moved to the Essex area from Wilcox, Arizona, in a covered wagon, with 12 head of horses, all of which had to be ferried across the Colorado River.

"Wilcox was just getting too crowded for my dad," Mrs. Gallinari recalled, "so he went west looking for the wide open spaces."

The family first settled the Sun Flower Ranch, one of the last of the homesteads in the area. The title, a family treasure, was signed by President Theodore Roosevelt early in his first term of office. Later the family acquired the Lazy Daisy Ranche and two became large cattle spreads. The gas station and store were first operated on the old Route 66 and then rebuilt when the highway was modernized.

When World War II broke out, the residents of this California area expected some military exercises in their region because of the proximity of Camp Young at Desert Center. But the first maneuver caught them by surprise.

"We had no indication that such a large maneuver would pass through the area," said Mrs. Gallinari. "The soldiers were only here for about 12 hours, but in that time drained our gas and water tanks and cleaned out the grocery store completely."

General Patton arrived in Essex riding a tank, and while his men refueled vehicles and resupplied themselves from the country store, he stopped at the kitchen door of the postmistress' home behind her post office and asked for a cup of coffee for himself and a few members of his staff.

Patton's maneuver signaled the beginning of increased military training in the Essex area. Three miles east of the area now occupied by the 1st Armored Division headquarters, was the site of Camp Clipper, a division-size ten camp established early in 1943. The camp had two 1100-foot wells and a reservoir large enough to supply the camp's water needs.

Thirty-two miles east was Camp Ibis.

The 33rd Infantry Division from Camp Lewis, Wash., was the first to train at Camp Clipper. In June, 1943, the division was marched to the railhead at Essex, bound eventually overseas. The 93rd Infantry Division, moved into the camp next for nine months of intensive training. During this time, rationing was in effect across the country, and resupplying the local store was a real problem.

The people of Essex area were among the few civilians to witness the firepower of World War II divisions. The Clipper Mountains served as an effective artillery impact area, and many a night tracer bullets lit up the skies above infiltration and night-firing courses.

After the 93rd Division moved overseas, Camp Clipper became a prisoner-of-war camp for Italian POW's, who cleared the mountains and ranges of artillery duds. Only a guard company and a maintenance section remained at the camp. Late in 1944, Camp Clipper was closed, and until the 1st Armored Division set up its headquarters in the immediate area, no large troop maneuvers have taken place in the Essex area.

ORDNANCE AND EXPLOSIVES ARCHIVES SEARCH REPORT FOR FORMER CAMP ESSEX ESSEX, CALIFORNIA PROJECT NUMBER J09CA027801

APPENDIX I

INTERVIEWS

APPENDIX I

INTERVIEWS

TABLE OF CONTENTS

CONVERSATION RECORD	TIME 1000	DATE 6 February 1996

TYPE

[X] VISIT [ ] CONFERENCE [ ] TELEPHONE [ ] INCOMING [ ] OUTGOING

Location of Visit/Conference: BLM, Needles, CA

ROUTINE	
NAME/SYMBO	INI

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU	ORGANIZATION (Office, dept., bureau, etc.)	TELEPHONE NO:
William T. Wiley	BLM, Needles CA	619-326-4079

SUBJECT

OE at the former Camp Essex, Essex CA

SUMMARY

Mr. Wiley has been with the Needles Office of the Bureau of Land Management (BLM) for 10 years. Prior to this, he worked for the Corps of Engineers in Portland Oregon, as a ranger. Mr. Wiley said he had heard of OE finds throughout the former Desert Training Center (DTC) but, none specifically at Camp Essex. Mr. Wiley stated that he believed that part of the Desert Strike exercise was held in the Essex area. He also indicated that as far as he knew there had been no live artillery fire during Desert Strike. Mr. Wiley said that since most of the desert had been designated as a wilderness area, usage had increased 10 fold in the last 10 years. This has resulted in increased visitor pressure on the old camps. More visitors have meant more damage to the camps and more exposure to possible OE. Mr. Wiley said that the entire project area was habitat for the desert tortoise, an endangered species, and any excavation would require the presence of a wildlife biologist. He referred us to Jack Howard, who is the Postmaster in the town of Essex. Mr. Wiley indicated that Jack Howard was very familiar with the area and that he knew a lot of people in the area.

ACTION REQUIRED

NAME OF PERSON DOCUMENTING CONVERSATION	SIGNATURE	DATE
JERRY D. RUSSELL	Jerry D Russell	19 February 1996

ACTION TAKEN

SIGNATURE	TITLE	DATE

CONVERSATION RECORD	TIME 1300	DATE 7 February 1996

TYPE

[X] VISIT [ ] CONFERENCE [ ] TELEPHONE [ ] INCOMING [ ] OUTGOING

Location of Visit/Conference: Post Office, Essex, CA

ROUTINE	
NAME/SYMBO	INI

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU	ORGANIZATION (Office, dept., bureau, etc.)	TELEPHONE NO:
Mr. Jack Howard	Private Individual	

SUBJECT

OE at the former Camp Essex, Essex CA

SUMMARY

Mr. Jack Howard is the Postmaster in Essex, California. He said that he had spent a great deal of time exploring the Camp Clipper/Essex area. Mr. Howard said that in the early 1970s he had found what he referred to as "grenade pits". He said they were located on the south west side of the camp south of Essex Road. He reported his find to the Sheriff and does not know what happened after that. He believes that most of the ordnance activity was located south of Essex Road. Mr. Howard said he had heard that artillery had been fired at the Clipper Mountains to the West. He said he had been in that area and had not found any OE. He gave us directions to Hummingbird Spring on the south east face of the Clipper Mountains. He indicated that it was the only road access to mountains from the south east. Mr. Howard said that he was not aware of any other OE being found in the Camp Essex area.

ACTION REQUIRED

NAME OF PERSON DOCUMENTING CONVERSATION	SIGNATURE	DATE
JERRY D. RUSSELL	Jerry D Russell	19 February 1996

ACTION TAKEN

SIGNATURE	TITLE	DATE

CONVERSATION RECORD

TIME	DATE
1400	8 February 1996

TYPE

[X] VISIT [ ] CONFERENCE [ ] TELEPHONE [ ] INCOMING [ ] OUTGOING

Location of Visit/Conference: Sheriffs Department, Needles CA

ROUTINE

NAME/SYMBO	INI

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU	ORGANIZATION (Office, dept., bureau, etc.)	TELEPHONE NO:
Bob Lyons	San Bernardino Sheriff	619-326-9200

SUBJECT

OE at the former Camp Essex, Essex CA

SUMMARY

Mr. Bob Lyons has been with the San Bernardino Sheriff's Office for 12 years. He is currently assigned as a forensics specialist. He has been to the Camp Essex area on four occasions. He said he did not find any evidence of OE during these visits. He also could not recall hearing of any OE being found in the area. He was aware of other finds in other camp areas but not Camp Essex. He referred us to his father who retired from the Sheriff's Office.

ACTION REQUIRED

NAME OF PERSON DOCUMENTING CONVERSATION	SIGNATURE	DATE
JERRY D. RUSSELL	Jerry D. Russell	19 February 1996

ACTION TAKEN

SIGNATURE	TITLE	DATE

CONVERSATION RECORD

TIME	DATE
1500	8 February 1996

TYPE

[X] VISIT [ ] CONFERENCE [ ] TELEPHONE [ ] INCOMING [ ] OUTGOING

Location of Visit/Conference: Sheriffs Department, Needles CA

ROUTINE

NAME/SYMBO	INI

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU	ORGANIZATION (Office, dept., bureau, etc.)	TELEPHONE NO:
Jerry Lyons	San Bernardino Sheriff	619-326-9200

SUBJECT

OE at the former Camp Essex, Essex CA

SUMMARY

Mr. Jerry Lyons was with the San Bernardino Sheriff's Office for 37 years. He is currently retired but works as a reserve deputy sheriff. Mr. Lyons worked on the Search and Rescue team and in that capacity traveled all over the desert in San Bernardino County. He said he had been to the Camp Essex area but he had not seen any evidence of OE. He also could not remember hearing of any OE finds in the Essex area. He said that the Camp Essex area had been used as part of the Desert Strike Exercises in the 60s.

ACTION REQUIRED

NAME OF PERSON DOCUMENTING CONVERSATION	SIGNATURE	DATE
JERRY D. RUSSELL	Jerry Russell	19 February 1996

ACTION TAKEN

SIGNATURE	TITLE	DATE

CONVERSATION RECORD

TIME	DATE
1200	8 February 1996

TYPE: [ ] VISIT [ ] CONFERENCE [X] TELEPHONE — [ ] INCOMING [X] OUTGOING

Location of Visit/Conference:

ROUTINE: NAME/SYMBO | INI

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU	ORGANIZATION (Office, dept., bureau, etc.)	TELEPHONE NO:
John Bentley	Private Individual	619-733-4401

SUBJECT: OE at the former Camp Essex, Essex CA

SUMMARY

Mr. John Bentley grew up in Essex, California, he said that he remembers seeing the tracers from Camp Essex during night firing. He said that he believed that the impact point was at the south east point of the clipper mountains. Mr. Bentley said that the firing point was two miles west on Essex Road on the left. He said there were mounds approximately two hundred yards off the road. He said he had not heard of any OE being found in the Camp Essex area, but he had heard stories of OE being found on the Clipper Mountains. He had not found anything other than small arms cartridge cases and bullets in the area.

ACTION REQUIRED

NAME OF PERSON DOCUMENTING CONVERSATION	SIGNATURE	DATE
JERRY D. RUSSELL		19 February 1996

ACTION TAKEN

SIGNATURE	TITLE	DATE

CONVERSATION RECORD

TIME	DATE
1530	12 February 1996

TYPE

[X] VISIT [ ] CONFERENCE [ ] TELEPHONE [ ] INCOMING [ ] OUTGOING

Location of Visit/Conference: Essex, CA

ROUTINE

NAME/SYMBO	INI

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU	ORGANIZATION (Office, dept., bureau, etc.)	TELEPHONE NO:
Bill Lewelling	Private Individual	Not Available

SUBJECT

OE at the former Camp Essex, Essex CA

SUMMARY

Mr. Bill Lewelling lives on Essex Road near the north west boundary of Camp Essex. Mr. Lewelling said he had hiked up and down the front of the Clipper Mountains and had found ordnance fragments and small arms cartridge cases over a wide area. He had a small collection of fragments and cartridge cases he had found. He had collected fragments and mortar fins from 81mm mortars. The cartridge cases he had collected were 7.62 blanks with a 1960 headstamp. These cartridge cases are an indication that Desert Strike maneuvers were conducted in the Camp Essex area. Mr. Lewelling said the mortar fragments could be found localized in certain areas. He indicated that he though that it was because they were shooting at targets in those locations.

ACTION REQUIRED

NAME OF PERSON DOCUMENTING CONVERSATION	SIGNATURE	DATE
JERRY D. RUSSELL	Jerry D. Russell	19 February 1996

ACTION TAKEN

SIGNATURE	TITLE	DATE

CONVERSATION RECORD

TIME	DATE
1900	12 February 1996

TYPE

[ ] VISIT [ ] CONFERENCE [X] TELEPHONE [ ] INCOMING [ ] OUTGOING

Location of Visit/Conference:

ROUTINE

NAME/SYMBO	INI

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU	ORGANIZATION (Office, dept., bureau, etc.)	TELEPHONE NO:
Butch Gates	Private Individual	208-529-5313

SUBJECT

OE at the former Camp Essex, Essex CA

SUMMARY

Mr. Butch Gates, who is now retired, had worked for the San Bernardino County Sheriff's Office from 1972 to recently. During his career with the Sheriff's office he was assigned to the Search and Rescue Team. This required Mr. Gates to travel extensively throughout the former camps of the Desert Training Center (DTC). Mr. Gates indicated that when Interstate 40 was constructed in 1972, it cut through the northern portion of the former Camp Essex. He said that debris from the camp was found during excavation, but no OE was discovered. Mr. Gates said he recalled that some grenade pits had been found in sections 34 and 35 ,T8N, R16E. He said they were found in 1972 and were cleaned out by EOD. He could not pinpoint the exact spot, but he knew it was in that area because he had marked it on his map at the time. He did not know what type of OE was involved (practice or high explosive) since he did not actually visit the site. Mr. Gates said, that Italian POWs were used to clear duds in late 1944. He mentioned a newspaper article that discussed the POWs. He said that, a portion of Desert Strike had taken place in the former Camp Essex area. Mr. Gates also said that he was not aware of any live OE, associated with exercise Desert Strike that was held in 1964. As far as he knew no high explosives were used during that exercise.

ACTION REQUIRED

NAME OF PERSON DOCUMENTING CONVERSATION	SIGNATURE	DATE
JERRY D. RUSSELL	Jerry D. Russell	19 February 1996

ACTION TAKEN

SIGNATURE	TITLE	DATE

ORDNANCE AND EXPLOSIVES ARCHIVES SEARCH REPORT FOR FORMER CAMP ESSEX ESSEX, CALIFORNIA PROJECT NUMBER J09CA027801

APPENDIX J

PRESENT SITE PHOTOGRAPHS

APPENDIX J

PRESENT SITE PHOTOGRAPHS

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J-1 Clipper Mountains, Facing West

J-2 Clipper Mountains, Facing North West

J-3 East Face of Clipper Mountains

J-4 East Face of Clipper Mountains

J-5 81mm Mortar Fins

J-6 81mm Mortar Fins

J-7 .50 Caliber Projectile

J-8 Small Arms Range Berm

J-9 Small Arms Range Berm, Facing North West

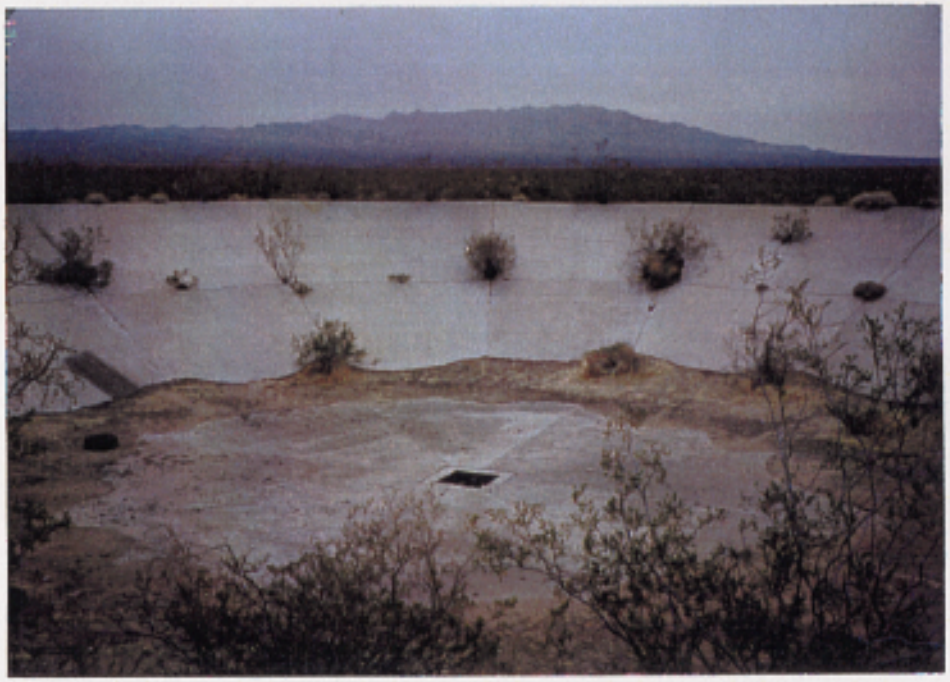
J-10 Small Arms Range Berm, Facing West

J-11 Fenner Rest Stop

J-12 Historical Marker at Fenner Rest Stop

J-13 Airstrip

J-14 Airstrip



J-15 500,000 Gallon Concrete Reservoir

J-16 Abandoned Well Located Near Reservoir

J-17 Road at Southern Edge of Camp Essex Garrison Area

J-18 Camp Essex Garrison Area, Facing West

J-19 North of I-40, Fenner Rest Stop in Background

J-20 Rock Lined Road at Former Camp Clipper Site

ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR
FORMER CAMP ESSEX
ESSEX, CALIFORNIA
PROJECT NUMBER J09CA027801

APPENDIX K

HISTORICAL PHOTOGRAPHS

APPENDIX K

HISTORICAL PHOTOGRAPHS

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K-1

ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR
FORMER CAMP ESSEX
ESSEX, CALIFORNIA
PROJECT NUMBER J09CA027801

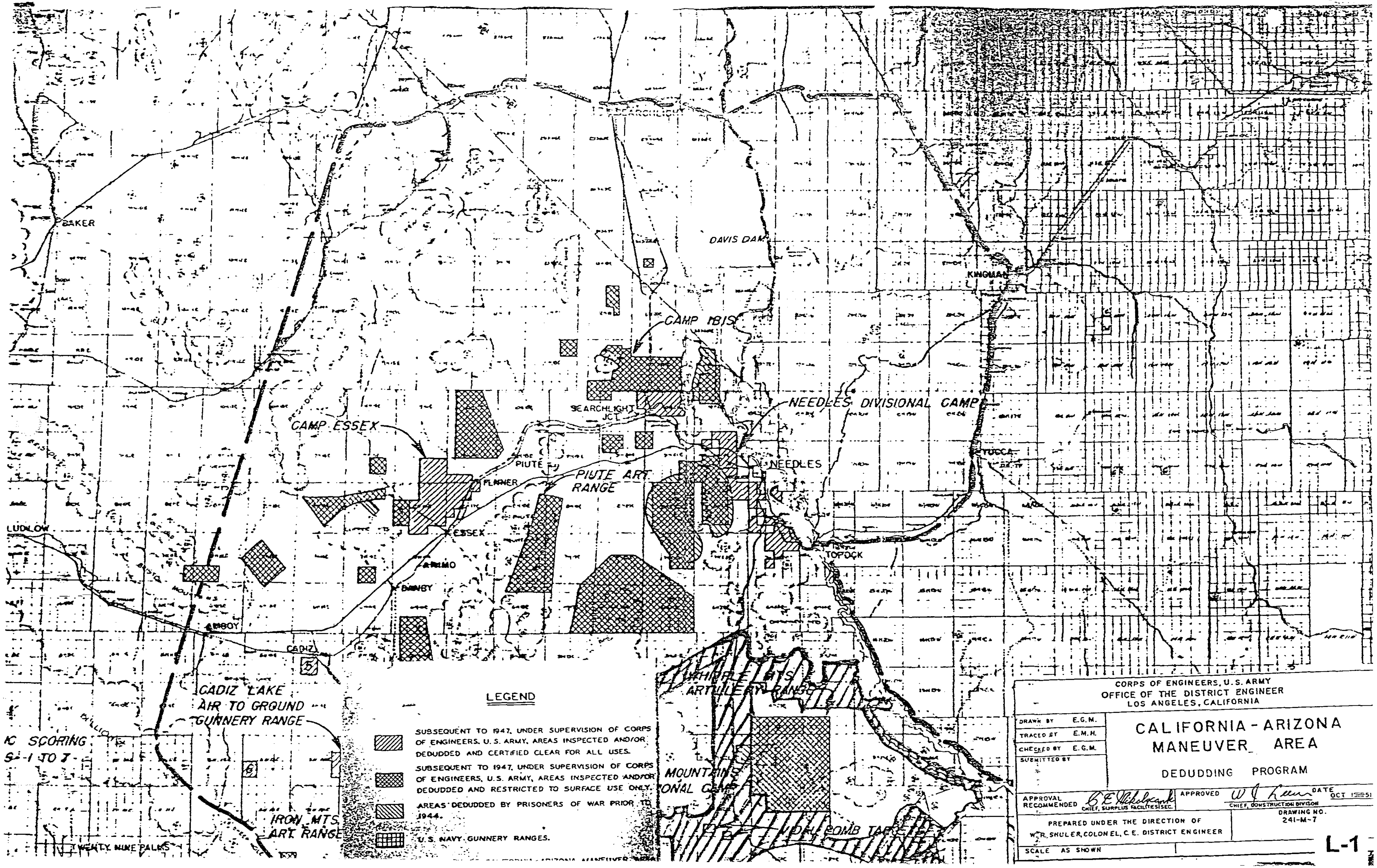
APPENDIX L

HISTORICAL MAPS/DRAWINGS

APPENDIX L

HISTORICAL MAPS/DRAWINGS

TABLE OF CONTENTS



BAKER
DAVIS DAM
KINGMAN
CAMP IBIS
SEARCHLIGHT JCT
NEEDLES DIVISIONAL CAMP
CAMP ESSEX
PIUTE
FENNER
PIUTE ART RANGE
NEEDLES
YUCCA
LUDLOW
ESSEX
TOPOCK
DANBY
AMBOY
CADIZ
CADIZ LAKE AIR TO GROUND GUNNERY RANGE
SCORING
S-1 TO 7
IRON MTS ART RANGE
TWENTY NINE PALMS
WHIPPLE MTS ARTILLERY RANGE
LEGEND
SUBSEQUENT TO 1947, UNDER SUPERVISION OF CORPS OF ENGINEERS, U. S. ARMY, AREAS INSPECTED AND/OR DEDUDDED AND CERTIFIED CLEAR FOR ALL USES.
SUBSEQUENT TO 1947, UNDER SUPERVISION OF CORPS OF ENGINEERS, U.S. ARMY, AREAS INSPECTED AND/OR DEDUDDED AND RESTRICTED TO SURFACE USE ONLY.
AREAS DEDUDDED BY PRISONERS OF WAR PRIOR TO 1944.
U.S. NAVY GUNNERY RANGES.
CORPS OF ENGINEERS, U.S. ARMY
OFFICE OF THE DISTRICT ENGINEER
LOS ANGELES, CALIFORNIA
DRAWN BY E.G.M.
TRACED BY E.M.H.
CHECKED BY E.G.M.
SUBMITTED BY
CALIFORNIA - ARIZONA MANEUVER AREA
DEDUDDING PROGRAM
APPROVAL RECOMMENDED
CHIEF, SURPLUS FACILITIES SEC.
APPROVED
CHIEF, CONSTRUCTION DIVISON
DATE OCT 1951
DRAWING NO. 241-M-7
PREPARED UNDER THE DIRECTION OF W. R. SHULER, COLONEL, C.E. DISTRICT ENGINEER
SCALE AS SHOWN

L-1

ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR
FORMER CAMP ESSEX
ESSEX, CALIFORNIA
PROJECT NUMBER J09CA027801

APPENDIX M

ARCHIVE SEARCH REPORT CORRESPONDENCE

NOT USED

ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR
FORMER CAMP ESSEX
ESSEX, CALIFORNIA
PROJECT NUMBER J09CA027801

APPENDIX N

REPORT DISTRIBUTION

APPENDIX N

REPORT DISTRIBUTION LIST

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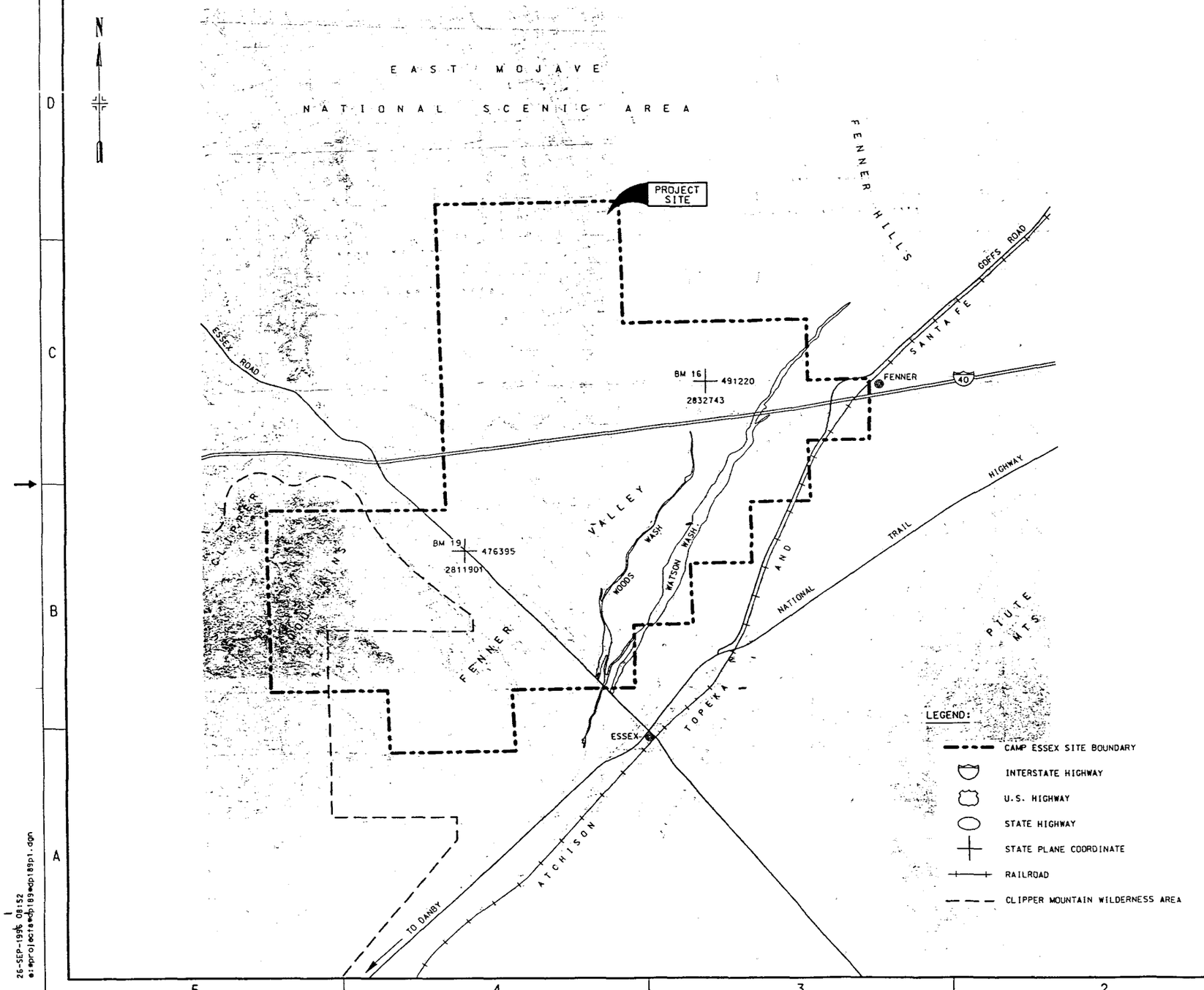
ED-DO	3	-	-
ED-G	-	-	1
ED-H	-	-	1
SO	-	-	1
RE	-	-	1
PD	-	-	1

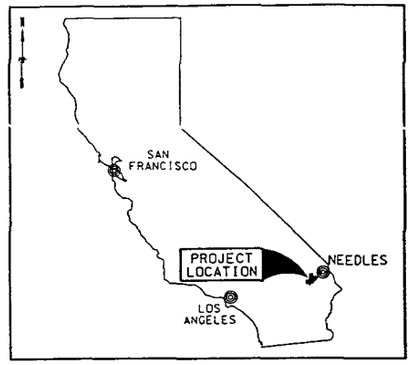
I - FINAL REPORT
II - FINDINGS REPORT
III - ROUTED FINAL REPORT

ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR
FORMER CAMP ESSEX
ESSEX, CALIFORNIA
PROJECT NUMBER J09CA027801

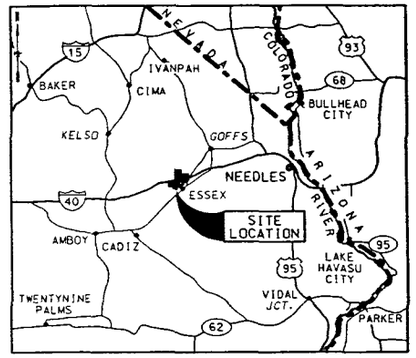
APPENDIX

REPORT PLATES





STATE MAP OF CALIFORNIA



VICINITY MAP

NOTES:

STATE PLANE COORDINATES LOCATED AT BENCHMARKS 16 & 19.

4000 2000 0 4000 8000 FEET

Revisions			
Symbol	Description	Date	Approved

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
ROCK ISLAND, ILLINOIS

CAMP ESSEX
NEEDLES, CALIFORNIA

SITE MAP

Designed by: J.D.RUSSEL			
Drawn by: K.D.MARKER			
Checked by: M.J.CIVIS			
Reviewed by: D.J.HOLMES	Scale:	Sheet reference number:	Project Number: J09CA027801
Approved by: CHARLES L. COX COL, CE	Date:		PLATE 1
	Drawing Code:		

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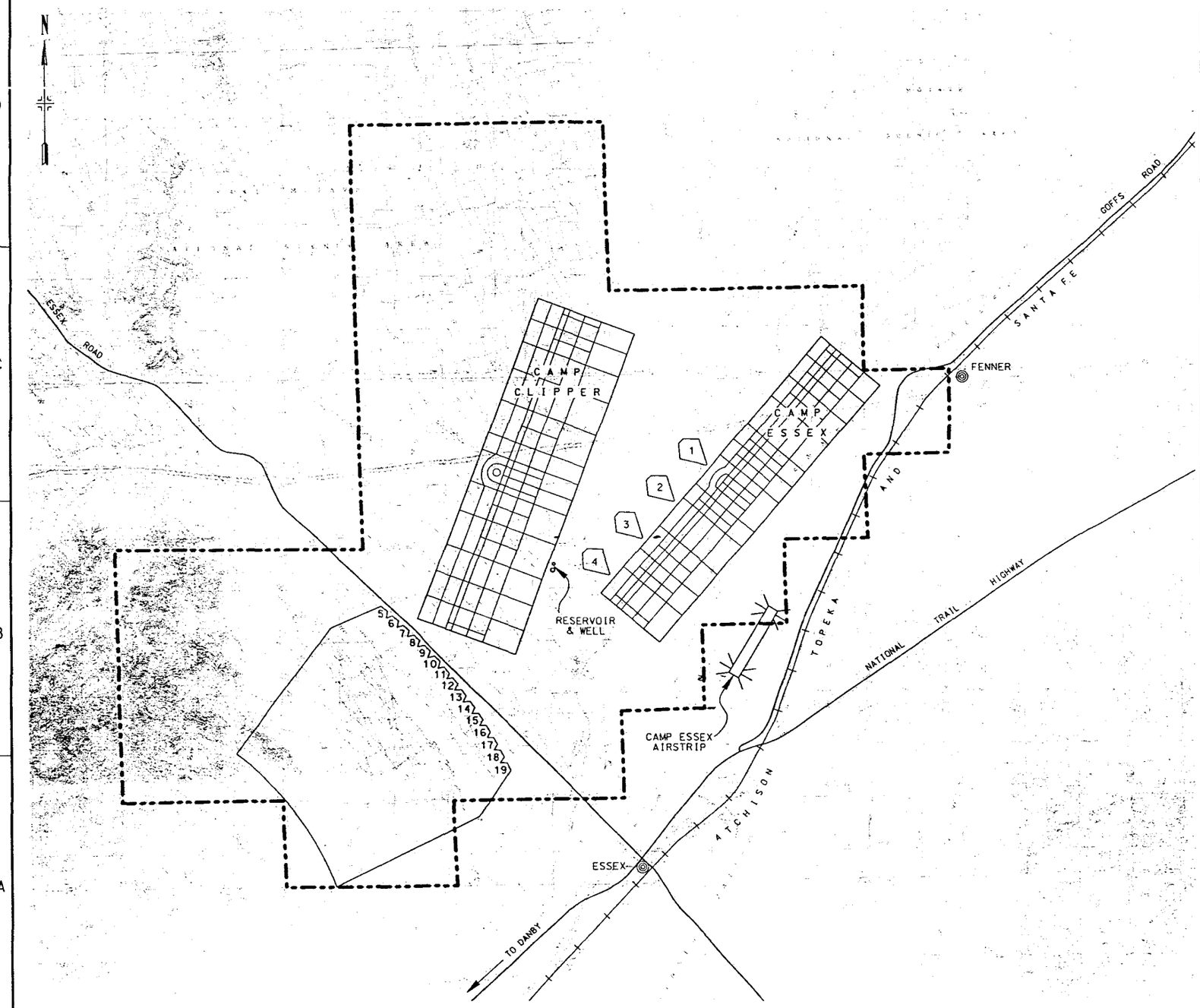

RANGE SUMMARY

RANGE	DESCRIPTION
1	KNOWN DISTANCE (KD) .22 CAL. RIFLE & CARBINE, .45 CAL. PISTOL
2	KD .22 CAL. RIFLE & CARBINE, .45 CAL. PISTOL
3	KD .22 CAL. RIFLE & CARBINE, .45 CAL. PISTOL
4	KD .22 CAL. RIFLE & CARBINE, .45 CAL. PISTOL
5	KD 1000" .30 CAL. MACHINE GUN (MG) & BROWNING AUTO. RIFLE (BAR)
6	CLOSE COMBAT 525 YDS. .30 CAL.
7	INFILTRATION COURSE .30 CAL.
8	TRANSITION 10 POINTS .30 CAL.
9	CLOSE COMBAT 525 YDS. .30 CAL.
10	INFILTRATION COURSE .30 CAL.
11	TRANSITION 10 POINTS .30 CAL.
12	CLOSE COMBAT 525 YDS. .30 CAL.
13	INFILTRATION COURSE .30 CAL.
14	TRANSITION 10 POINTS .30 CAL.
15	KD 1000" .30 CAL. MG & BAR
16	KD 1000" .30 CAL. MG & BAR
17	KD 100-200-300-500 YDS. .30 CAL.
18	KD 100-200-300-500 YDS. .30 CAL.
19	KD 100-200-300-500 YDS. .30 CAL.

LEGEND:

CAMP ESSEX SITE BOUNDARY

RAILROAD

3000 1500 0 3000 6000 FEET

Revisions			
Symbol	Description	Date	Approved

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
ROCK ISLAND, ILLINOIS

Designed by: J.D.RUSSEL
Drawn by: K.D.MARKER
Checked by: M.J.CIVIS
Reviewed by: D.J.HOLMES
Approved by: CHARLES J. COX COL. CE

US Army Corps of Engineers Rock Island District

CAMP ESSEX
NEEDLES, CALIFORNIA

FACILITY LAYOUT
CIRCA 1943

Scale:
Date:
Drawing Code:
Sheet reference number:
Project Number: J09CA027801

PLATE 2

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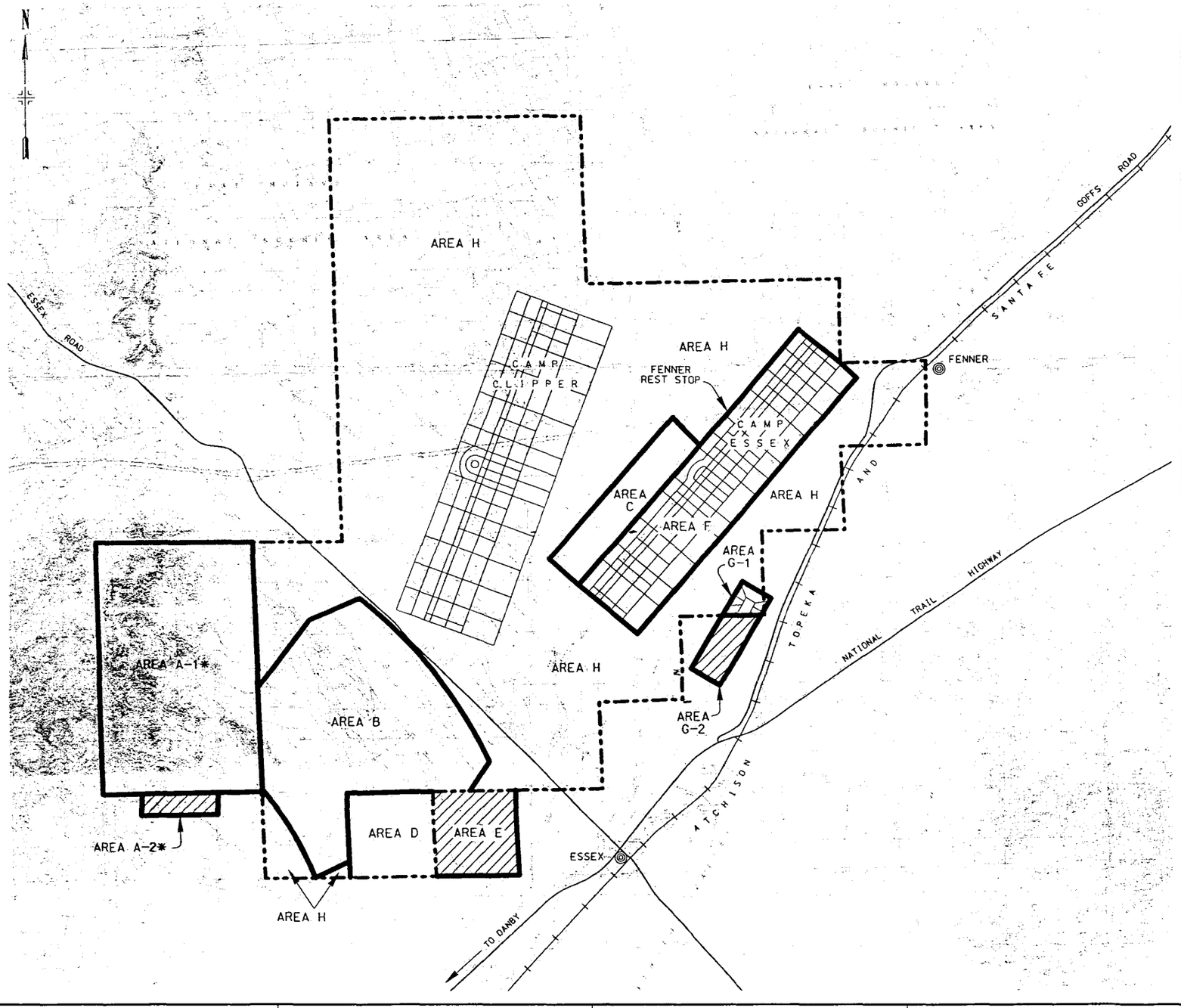

SUMMARY OF AREAS

AREA	FORMER USAGE	OE PRESENCE	ACREAGE
A-1	CLIPPER MTN. IMPACT AREA	CONFIRMED	3,690
A-2	CLIPPER MTN. IMPACT AREA (ADDITIONAL)	CONFIRMED	*160
B	SMALL ARMS RANGE SOUTH	UNCONTAMINATED	3,245
C	SMALL ARMS RANGE NORTH	UNCONTAMINATED	650
D	GRENADE PITS WEST	POTENTIAL	640
E	GRENADE PITS EAST	POTENTIAL	*640
F	CAMP ESSEX GARRISON AREA	UNCONTAMINATED	2,308
G-1	CAMP ESSEX AIRSTRIP	UNCONTAMINATED	85
G-2	CAMP ESSEX AIRSTRIP (ADDITIONAL)	UNCONTAMINATED	*221
H	REMAINING LANDS	POTENTIAL	19,919

* ADDITIONAL ACREAGE	1,021
FDE ACREAGE	30,537
TOTAL ACREAGE	31,558

LEGEND:

- CAMP ESSEX SITE BOUNDARY
- PROJECT AREA BOUNDARIES
- ADDITIONAL LAND

* NOTES:

AREA A-1 IS BASED ON DOCUMENTS F-6, F-7 AND L-1. AREA A-2 IS BASED ON DOCUMENTS F-12 AND G-2.

3000 1500 0 3000 6000 FEET

Revisions			
Symbol	Description	Date	Approved

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
ROCK ISLAND, ILLINOIS

Designed by: J.D.RUSSEL
Drawn by: K.D.MARKER
Checked by: M.J.CIVIS
Reviewed by: D.J.HOLMES
Approved by: CHARLES S. COX COL., CE

US Army Corps of Engineers

CAMP ESSEX
NEEDLES, CALIFORNIA

PROJECT AREAS

Scale:
Date:
Drawing Code:
Sheet reference number:
Project Number: J09CA027801
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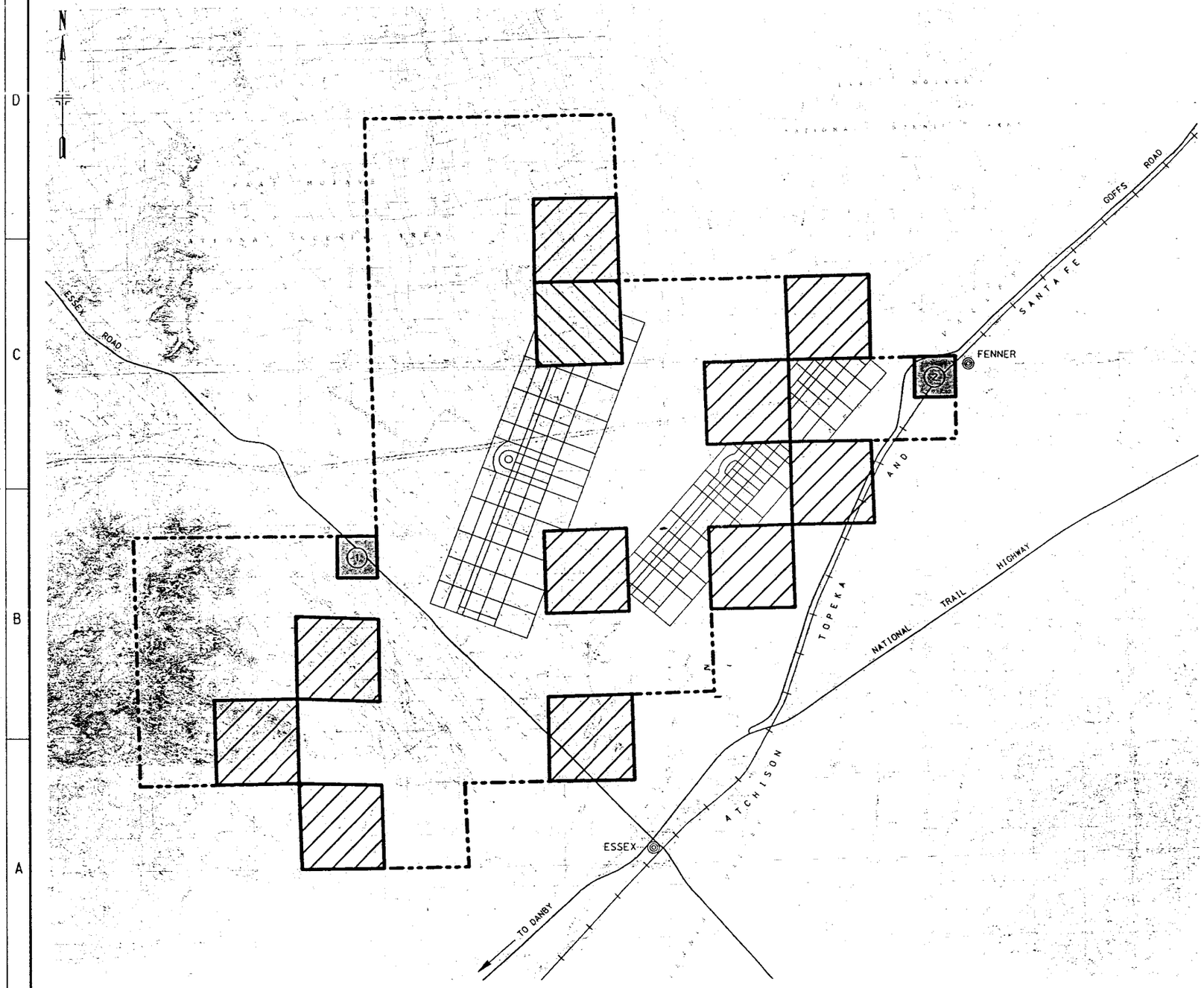

OWNERSHIP SUMMARY		
TRACT	OWNER	ACREAGE
	SF PACIFIC PROPERTIES INC.	6,400.0
	STATE OF CALIFORNIA	640.0
	JACK LEWELLING	34.0
	LEROY PARSONS	46.0
	JOHN J. TWEEDLE	37.0
	ROBERT GASKINS	160.0
	DOUGLAS SMITH & ROBERT GASKING	160.0
	DON SAATHOFF	2.8
	BISHARA & NAJA ZEINATY	20.6
	BUREAU OF LAND MANAGEMENT	23,036.6
	TOTAL ACREAGE	30,537.0

LEGEND:

CAMP ESSEX SITE BOUNDARY

3000 1500 0 3000 6000 FEET

Revisions			
Symbol	Description	Date	Approved

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
ROCK ISLAND, ILLINOIS

Designed by: J.D.RUSSEL
Drawn by: K.D.MARKER
Checked by: M.J.CIVIS
Reviewed by: D.J.HOLMES
Approved by: CHARLES S. COX COL, CE

US Army Corps of Engineers Rock Island District

CAMP ESSEX
NEEDLES, CALIFORNIA

CURRENT OWNERSHIP
1996

Scale:
Date:
Drawing Code:
Sheet reference number:
Project Number: J09CA027801
PLATE 4

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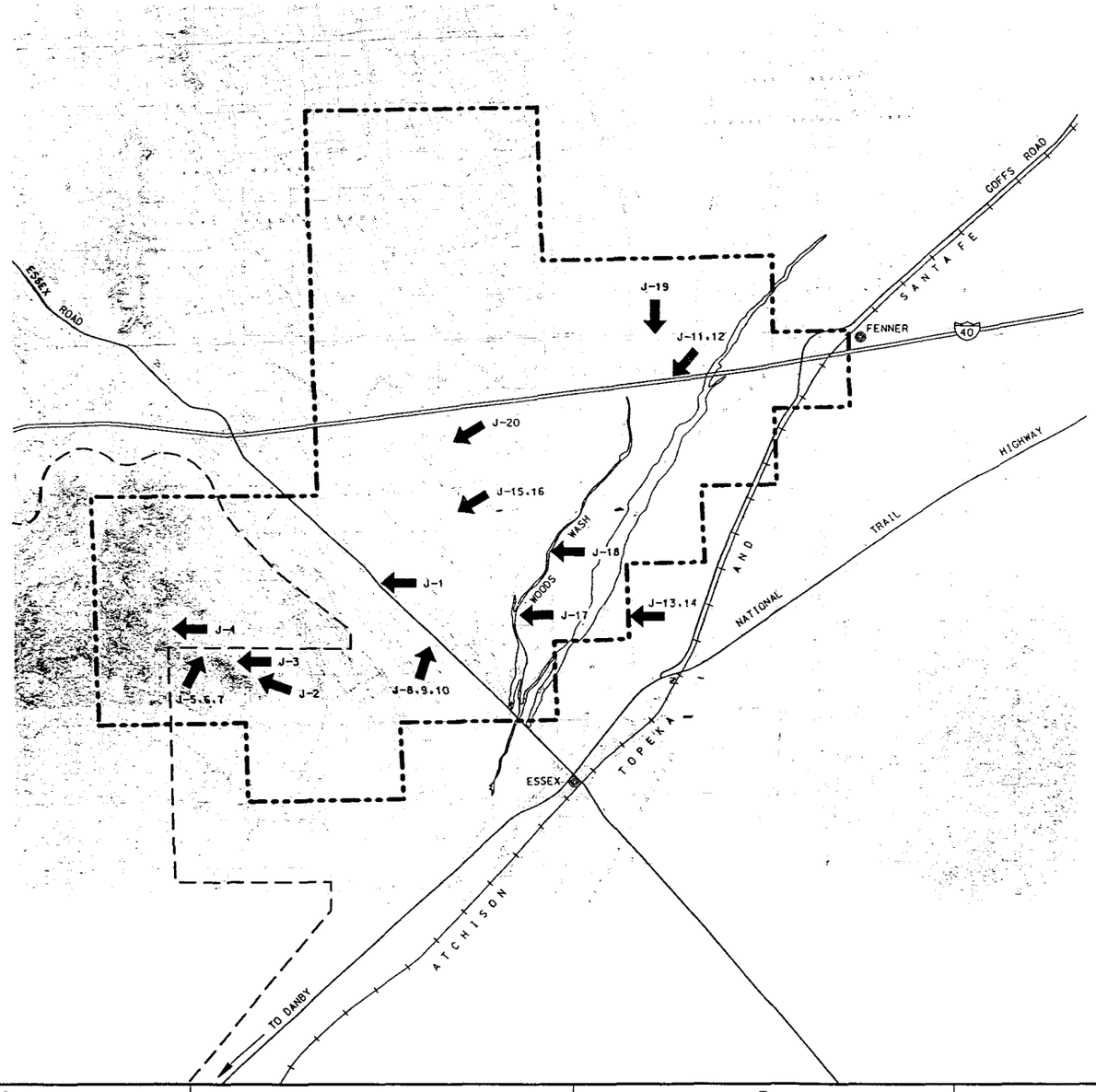

LEGEND:

- CAMP ESSEX SITE BOUNDARY
- INTERSTATE HIGHWAY
- RAILROAD
- CLIPPER MOUNTAIN WILDERNESS AREA
- PHOTO LOCATIONS

4000 2000 0 4000 8000 FEET

Revisions			
Symbol	Description	Date	Approved

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
ROCK ISLAND, ILLINOIS

CAMP ESSEX
NEEDLES, CALIFORNIA

PHOTO LOCATIONS

Designed by: J.D.RUSSEL			
Drawn by: K.D.MARKER			
Checked by: M.J.CIVIS			
Reviewed by: D.J.HOLMES	Scale:	Sheet reference number:	Project Number: J09CA027801
Approved by: CHARLES S. COX COL, CE	Date:		PLATE 5
	Drawing Code:		

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