



**US Army Corps
of Engineers**

HUNTSVILLE ENGINEERING
SUPPORT CENTER

DEFENSE ENVIRONMENTAL RESTORATION PROGRAM
FOR
FORMERLY USED DEFENSE SITES

ORDNANCE AND EXPLOSIVES
CHEMICAL WARFARE MATERIALS

ARCHIVES SEARCH REPORT

FINDINGS

AVON PARK AIR FORCE RANGE

AVON PARK, FLORIDA
OKEECHOBEE AND POLK COUNTIES

PROJECT No. I04FL028701

MAY 1996

PREPARED BY
U.S. ARMY CORPS OF ENGINEERS
ST. LOUIS DISTRICT

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Appendices

A	REFERENCES
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D	REPORTS/STUDIES
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1.0 Introduction

1.1 Authority

In 1986, Congress established the Defense Environmental Restoration Program at 10 U.S.C. 2701 et.seq. This program directed the Secretary of Defense to "carry out a program of environmental restoration at facilities under the jurisdiction of the Secretary."

In March, 1990, the EPA issued a revised National Contingency Plan. Under 40 C.F.R. 300.120, EPA designated DOD to be the removal response authority for incidents involving DoD military weapons and munitions under the jurisdiction, custody and control of DoD.

Since the beginning of this program, the U.S. Army Corps of Engineers has been the agency responsible for environmental restoration at Formerly-Used Defense Sites (FUDS). Since 1990, the U.S. Army Engineering and Support Center, Huntsville, has been the Mandatory Center of Expertise and Design Center for Ordnance and Explosives.

1.2 Subject

The site, **USAF Avon Park Range**, is located in Okeechobee, Highlands and Polk Counties, Florida. The Army Air Corps utilized the site during World War II as a training base for B-17 aircraft crews on air-to-ground bombing and gunnery ranges. The installation was also known as Avon Park Army Air Field and Avon Park Bombing Range. A large portion of the site is still an active range.

1.3 Purpose

This Archives Search Report (ASR) compiles information obtained through historical research at various archives and records holding facilities, interviews with individuals associated with the site or its operations, and personal visits to the site. All efforts were directed towards determining possible use or disposal of ordnance on the site. Particular emphasis was placed on establishing the types, quantities and area of disposal. Information obtained during this process was used in developing recommendations for further actions at the site.

1.4 Scope

The entire area of the formerly used defense site portion of the USAF Avon Park Range, approximately 111,000 acres, was considered in assessing the potential for ordnance and explosives and chemical warfare material contamination. The FUDS portion consists of 5 tracts as shown on Figure 1-1.

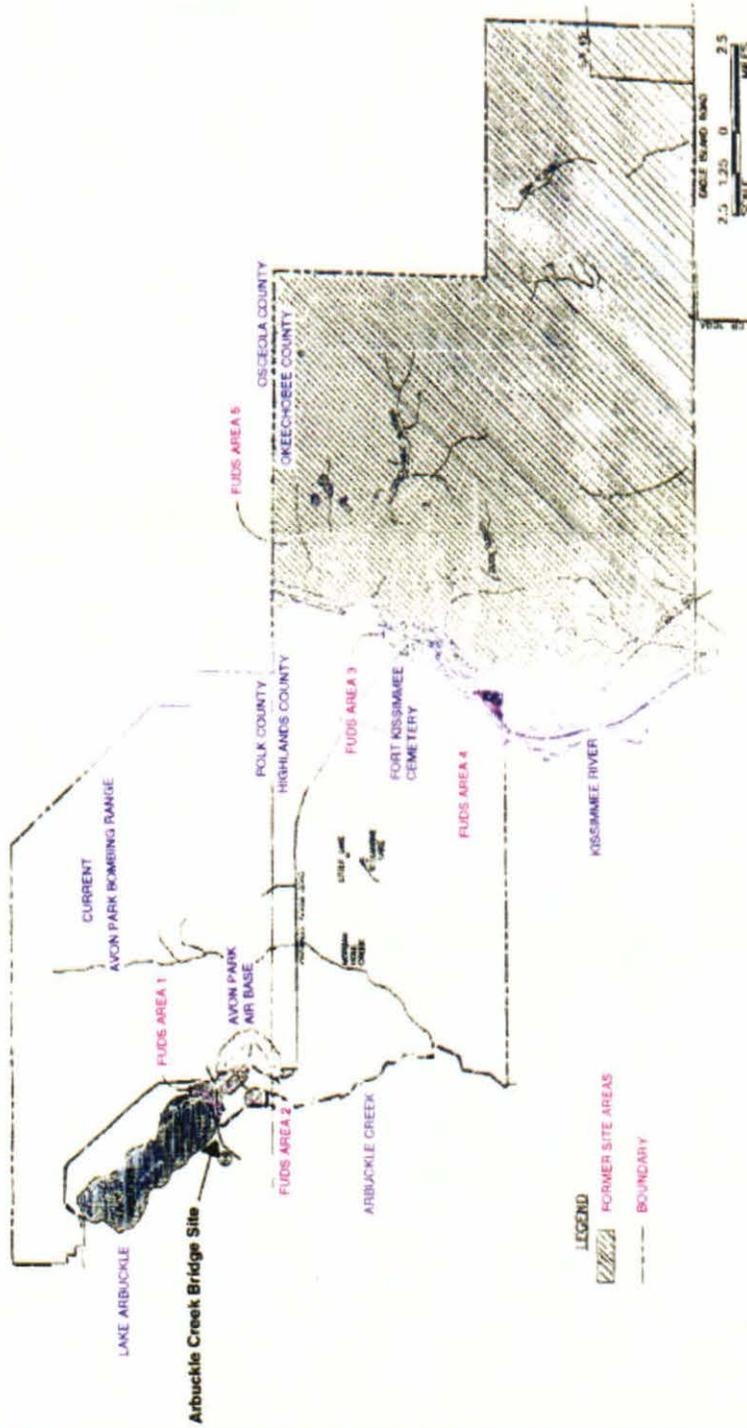


FIGURE I-1

**USAF AVON PARK RANGE
 OKEECHOBEE, POLK, &
 HIGHLANDS COUNTIES, FLORIDA
 PROJECT #104FLO28701
 SITE LOCATIONS MAP**

DATE: OCT 1995
 DATE OF MAP: 12 MAY 1984
 NO. OF MAPS: 1
 NO. OF SHEETS: 1

NOT TO SCALE

2.0 Previous Investigations

2.1 Corps of Engineers Documents

An Inventory Project Report (INPR) was completed on 24 December 1992 by the U.S. Army Corps of Engineers, Jacksonville District to establish this site as a Formerly Used Defense Site (FUDS) under the Defense Environmental Restoration Program (DERP). A copy of the INPR is included in Appendix D. An Ordnance and Explosives (OE) project investigation was approved for this site on 15 July 1993.

2.2 Other Reports

No other engineering or environmental study reports were found for this site.

3.0 Site Description

3.1 Land Usage

3.1.1 Location

The former Avon Park Air Force Range is located in Okeechobee, Highlands and Polk Counties, approximately 10.5 miles southeast of the city of Avon Park, Florida. The site location and vicinity are shown on Figure 3-1.

3.1.2 Past Use

The site was utilized by the Army Air Corps during World War II as a training base for the purpose of training B-17 aircraft crews with air to ground bombing range, and was named Avon Park Army Air Field. In 1947, the base was deactivated and placed in caretaker status. In 1949, the site was transferred to the Air Force and became known as Avon Park Air Force Base. In 1956, the site was renamed Avon Park Air Force Range, at which time structural improvements were made. During the period of ownership and control by the Department of Defense, approximately 800.00 acres were outgranted to and utilized first by the Department of Justice as a Federal Prison (1951 to 1957), and then by the state of Florida for a state correctional institution (1957 to present).

Prior to use by the military, most of the land was unimproved pasture and swamp areas.

3.1.3 Present Use

The Department of the Air Force still utilizes 106,112.27 acres. The remaining site was reported excess to the War Assets Administration (WAA) for disposal. Currently, the areas are being utilized for various purposes. Most of the FUDS area is still undeveloped and used for grazing, although various attempts have been made to plant vegetables on scattered tracts. Other portions of the former bombing range area continue to be used for hunting. Significant land use on other remaining parts of the site include a state correctional institution and a cemetery.

3.2 Climatic Data

The climatic data collected at Avon Park, Florida for the period of 1931-1993 shows an average annual precipitation of 52.74 inches. Approximately 59 percent of this amount falls in June through September. The climate in the study area is subtropical, characterized by short mild winters and long warm humid summers. Average annual temperature for the area is about 73 degrees Fahrenheit.

Summarized climatic data for Avon Park and wind data for Orlando which is located about 60 miles north of the study area are shown in the following tables:

CLIMATOLOGICAL DATA FOR AVON PARK, FL

MONTH	TEMPERATURE (°F)			PRECIPITATION (INCHES)		
	MONTHLY			MONTHLY		
	MAX	MIN	MEAN	MAX	MIN	MEAN
JAN	83	34	59	8.33	.00	2.21
FEB	85	43	64	9.66	.03	2.70
MAR	87	48	68	7.35	.40	3.12
APR	91	51	71	10.35	.00	2.74
MAY	94	60	72	13.06	.33	4.07
JUN	95	67	81	20.14	2.08	8.64
JUL	97	70	84	18.99	2.80	8.07
AUG	97	70	84	19.85	1.86	7.32
SEP	94	68	81	16.10	.36	6.85
OCT	90	61	76	11.26	.11	3.38
NOV	86	51	69	7.44	.00	1.73
DEC	83	42	63	4.43	.07	1.61
YEAR	87	58	73	80.08	34.86	52.74
YEARS OF RECORD	62	62	62	62	62	62

WIND DATA FOR ORLANDO, FL

MONTH	PREVAILING DIRECTION	WIND SPEED (MPH)	
		MEAN	PEAK GUST
JAN	NNE	8.9	48 (NW)
FEB	S	9.6	51 (W)
MAR	S	9.9	56 (SW)
APR	SE	9.3	53 (NW)
MAY	SE	8.8	68 (S)
JUN	SW	8.0	62 (W)
JUL	S	7.4	68 (W)
AUG	S	7.2	58 (SW)
SEP	ENE	7.7	54 (NW)
OCT	N	8.6	40 (W)
NOV	N	8.6	41 (NE)
DEC	NNE	8.6	43 (W)
ANNUAL	S	8.5	68 (W)
YEARS OF RECORD		43	8

3.3 Geology and Soils

3.3.1 Geology

The USAF Avon Park site is located in the Floridian section of the Coastal Plain

physiographic Province. This section is further divided into the Central Highlands province. The site occurs on the Osceola Plain. The Osceola Plain, a marine terrace, bounded on the west by the Lake Wales Ridge and on the east by lower lying marine scarps. Local relief is generally low (Ford and others 1990).

The surface drainage system in most of the area is poorly developed and instead runoff predominately drains into numerous sinks, closed depressions, lakes and grassy prairies. Rainfall percolates through the unconsolidated sands and clays to recharge the underlying Upper Floridian aquifer. After heavy rainfall, small intermittent streams flow to sinkholes where the water either percolates rapidly, or ponds, to form prairie lakes. During extended dry periods, these channels and lakes are usually dry.

The west-central peninsula of Florida consists of igneous and metamorphic basement rocks overlain by 4,000 feet of sedimentary rocks, principally limestones. These geologic units, and the description of their general lithology are summarized in Table 3-1. The top of the limestone bedrock tends to be very irregular varying more than 100 feet in elevation over a distance of a few hundred feet. This irregular surface was formed by dissolution of the limestone caused by acidic ground water. Other effects of dissolution activity are caverns, sinkholes, pinnacles, solution pipes, and a "honeycomb-structure" of voids in the limestone .

AGE	STRATIGRAPHIC UNIT	LITHOLOGY	THICKNESS (FT)
Recent and Pleistocene	Undifferentiated sand and clay	Interbedded sand and clay	10-120
Miocene	Tampa Limestone	White to gray, sandy fossiliferous limestone	50-300
Oligocene	Suwannee Limestone	Fossiliferous, yellow to white, fine-grained limestone	
Eocene	Crystal River Formation	Soft, chalky, white to tan coquinoid limestone	60-150
	Williston Formation	do	
	Inglis Formation	Hard, fossiliferous, brown to gray dolomitic limestone	95
	Avon Park Limestone	Soft to hard, fossiliferous, brown limestone	
	Lake City Limestone	do	

Table modified from Soil Survey of Polk County, Florida

3.3.2 Soils

The USAF Avon Park site encompasses a large area that includes several different types of soil. The soils differ mainly in their characteristics and not soil content. The soils are all sands and fine sand mixtures, they all are poorly and very poorly drained, and they are all deep soils (extending to depths well over 7 feet). The corrosive effects of the soil is high for uncoated steel and low for concrete.

The majority of the soil is in depressions, swamps, or grassy sloughs. The surface layer is dark gray or dark grayish brown fine sand. The subsoil generally grades to a lighter color as does the substratum to a depth over 80 inches. These soils generally have a high water table that is at a depth of 10 to 20 inches for 4 to 12 months of the year and below this level during long dry periods.

In other areas the water table, the majority of the year, is at or near the surface and becomes ponded after heavy rains and remains that way if the soil in that area is of low permeability. In these areas the soil has a higher content of silt and may even be an organic muck. These soils have a higher available water capacity (Ford and others 1990).

3.4 Hydrology

3.4.1 Groundwater

Two aquifer systems, the surficial, or water table aquifer and the Floridian aquifer, underlie the study area. The Floridian aquifer is the principal aquifer supplying most of the water used in the region. In the study area it is represented by limestones and dolomites of the Upper Floridian aquifer which includes the Lake City Limestone, Avon Park Limestone, Ocala Group Limestones, Suwannee Limestone, and the St. Marks Formation (Tampa limestone).

The top of the Floridian aquifer is defined as the first consistent limestone below which no clay confining beds occur. The configuration of the top of the aquifer is highly variable due to erosion and dissolution in the limestones that form its upper surface. The elevation of the top of the aquifer ranges from slightly below sea level to more than 100 feet above sea level. Subsurface information from nearby water wells indicates that the top of the Floridian aquifer at the site is about elevation 25 feet (MSL). The Floridian aquifer is unconfined at this location since an overlying clay aquitard is absent (Wetterhall 1964).

The regional direction of groundwater movement in the Floridian aquifer is from east to west. Water level data from wells in the site vicinity indicate that the local groundwater flow is to the west, under a gradient of about 8 feet per mile

(Fretwell 1988). Recharge of the Floridian aquifer occurs from the overlying watertable aquifer in areas where it is in direct contact with the Floridian or through leaky confining beds between the Floridian and the water-table aquifer. Recharge can occur where the limestone is exposed at the surface or overlain by a thin veneer of sand, and where there are lakes, sinks and rivers.

The shallow aquifer, or water table aquifer, is found where sands overlie the limestones and dolomites of the Floridian aquifer. The thickness of the shallow aquifer is highly variable due to large variations in the thickness of sands. The shallow aquifer may directly overlie the Floridian aquifer, or they may be separated by clays or other relatively impermeable units. Recharge to the water-table aquifer is almost entirely from local rainfall, except in those areas where it is hydraulically connected to the Floridian aquifer, which is the likely condition at this site. Discharge from the shallow aquifer may be by downward percolation into the Floridian Aquifer, seepage into streams, lakes, sinkholes, and pumpage from wells. The shallow aquifer is mainly used for small domestic supplies. The average hydraulic conductivity of the surficial sand aquifer in this region has been estimated as about 1.3×10^{-4} (Fretwell 1988). This aquifer is in an unconfined condition.

3.4.2 Surface Water

The study area which is located in the central part of Florida involves three individual sites:

The first site is located at the Lake Arbuckle and its surrounding areas. All the surface runoff drains into the Lake and the Arbuckle Creek. The Livingston Creek flows into the Lake from northwest and the control structure of the Lake releases water into the Arbuckle Creek. A stream gage for the Livingston Creek near Frostproof, Florida, about 10 miles upstream of the Lake, has a drainage area of 120 square miles with only two years of record (1990-1992). This gage shows a maximum peak flow of 1811 cubic feet per second (cfs) (08 July 1991) and a maximum stage of 45.56 feet (24 August 1992). The gage for the Arbuckle Creek near De Soto city has a drainage area of 379 square miles with 44 years record (1939-1992). The period of record shows an average discharge of 326 cfs, a maximum discharge of 7,380 cfs (23 September 1948) and a maximum stage of 44.96 FT-NGVD (12 September 1960). The minimum flow and stage at Arbuckle occurred on 10 September 1956 and are 275 cfs and 40.33 FT-NGVD.

The second site sits on the southeastern quarter of the Lake Kissimmee and its surrounding areas. All the surface runoff drains toward the Lake Kissimmee. The Kissimmee River is the west boundary of the Lake. A stream gage for the Kissimmee River at S-65, near Lake Wales, Florida, about 1 mile south of the site, has a drainage area of 1,607 square miles with 52 years of record (1929-1992). The

period of record shows an average discharge of 1,042 cfs, a maximum peak discharge of 11,100cfs (23 February 1988) and a maximum stage of 54.13 FT-NGVD (08 October 1969).

The third site which is located between the Kissimmee River and Highway 441 covers a large portion of the Okeechobee County. The Kissimmee River flows along the west boundary of the site. All the surface runoff drains toward the Kissimmee River. A stream gage for the Kissimmee River at S-65E, near Okeechobee, Florida has an indeterminate drainage area. The gage is about 10 miles downstream from the site with the average discharges of 2,188 cfs for a 34 years period (water year 1929-1962) and of 1,349 cfs for a 21 years record (water year 1965-1985) respectively. The period record for the Kissimmee River shows, a peak flow of 25,800 cfs (03 October 1969) and a maximum stage of 23.3 FT-NGVD (05 October 1969). Portions of the site are likely to be flooded by the Kissimmee River overbank flooding.

3.5 Ecology

The information on the endangered and threatened species for this site has been provided by the U.S. Fish and Wildlife Service (USFWS) and the Florida Game and Fresh Water Fish Commission.

The USFWS reported that the following Federally endangered or threatened species are known to exist on the USAF Avon Park Range: Bald eagle (Haliaeetus leucocephalus); endangered; red-cockaded woodpecker (Picoides borealis), endangered; grasshopper sparrow (Ammodramus savannarum), threatened; and Florida scrub jay (Aphelocoma coerulescens coerulescens), threatened. A Bald eagle nest was reported to occur in the vicinity of the site.

The Florida Game and Fresh Water Fish Commission reported that the following State endangered and threatened species occur on the Lake Hancock Small Arms and Bombing Range: gopher tortoise (Gopherus polyphemus); Florida scrub lizard (Sceloporus woodi); fox squirrel (Sciurus niger); Florida scrub jay; limpkin (Aramus guarauna); little blue heron (Egretta caerulea); snowy egret (Egretta thula); tri-colored heron (Egretta tricolor); white ibis (Eudocimus albus); southeastern American kestrel (Falco sparverius paulus); Florida sandhill crane (Grus canadensis pratensis); Bald eagle; loggerhead shrike (Lanius ludovicianus); osprey (Pandion haliaetus); red-cockaded woodpecker; crested caracara (Polyborus plancus); snail kite (Rostrhamus sociabilis); and Florida burrowing owl (Speotyto cunicularia floridana). Several Bald eagle and crested caracara nests, a breeding shorebird area, and several areas of rare oak-scrub habitats are known to be in the vicinity of the site.

No additional information on the occurrence of rare or endangered species or natural communities is known at this time. This does not mean that other state or federally-listed species may not be present within the areas of interest. An on site inspection by appropriate state and federal personnel may be necessary to verify the presence, absence, or location of listed species, or natural communities if remedial action is recommended as part of the final ASR.

3.6 Demographics

3.6.1 Center of activity

The U.S. Air Force Avon Park Range site is located near the city of Avon Park, Highlands County, Florida. The site is located in Highlands, Okeechobee, Osceola and Polk Counties, Florida, mostly in Okeechobee County. This section below addresses Avon Park and Okeechobee County.

3.6.2 Population density

City: Avon Park	County: Okeechobee
Area: 4.5 square miles	Area: 770 square miles
Population: 8,042	Population: 27,300
Density: 1,787 persons/square mile	Density: 35 persons/square mile

3.6.3 Types of businesses

Industry in the vicinity of Avon Park includes boat and marine equipment manufacturing, a hospital and citrus farming. The population of Avon Park changes significantly during the winter, due to the increase of seasonal residents during the winter months. Of the people in Okeechobee County employed by businesses about 35 percent are employed by retail trade businesses. Also prominent are services businesses at about 32 percent as well as construction businesses at about 9 percent and transportation businesses at about 6 percent. Foregoing percentages are at mid March 1991.

The number of business establishments in Okeechobee County can be broken down by type as follows: manufacturing 3.8%; agriculture 2.5%; services 30.9%; trade and financial 43.7%; and other 19.1%.

3.6.4 Types of housing

Housing in Avon Park is composed of both single family and multi-family dwellings. The median value of 1,647 specified owner-occupied housing units in Avon Park is \$40,600.00.

3.6.5 New development in the area

There is no significant new development in the Avon Park area.

3.6.6 Typical cross sections of the population

The part of the population under the age of 18 is 26.3%, and the part over the age of 65 is 24.2%. The median age is 37.6 years.

3.6.7 Information sources

U.S. Census reports as listed below:

- 1990 Census of Population and Housing, Okeechobee County, Florida
- 1990 Census of Population and Housing, Avon Park, Florida
- 1988 COUNTY AND CITY DATA BOOK, Land Area and Population, Okeechobee County, Florida
- COUNTY BUSINESS PATTERNS
- 1990, Okeechobee County, Florida

Telephone Interviews:

- Avon Park Chamber of Commerce, (813) 453-3350

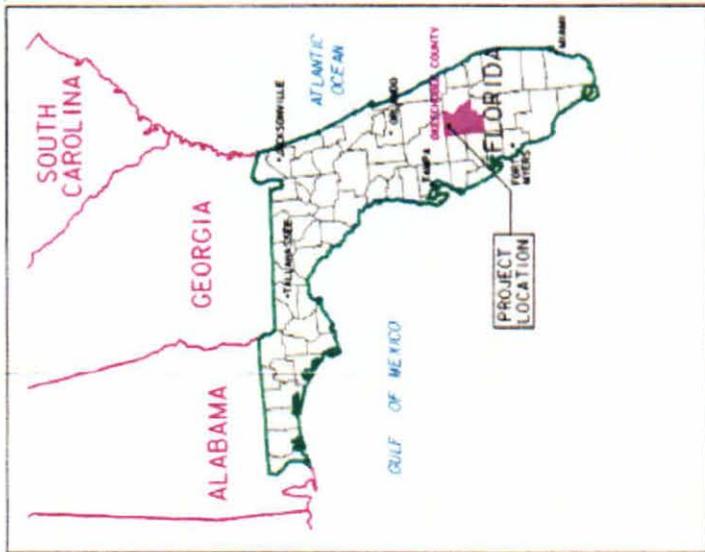
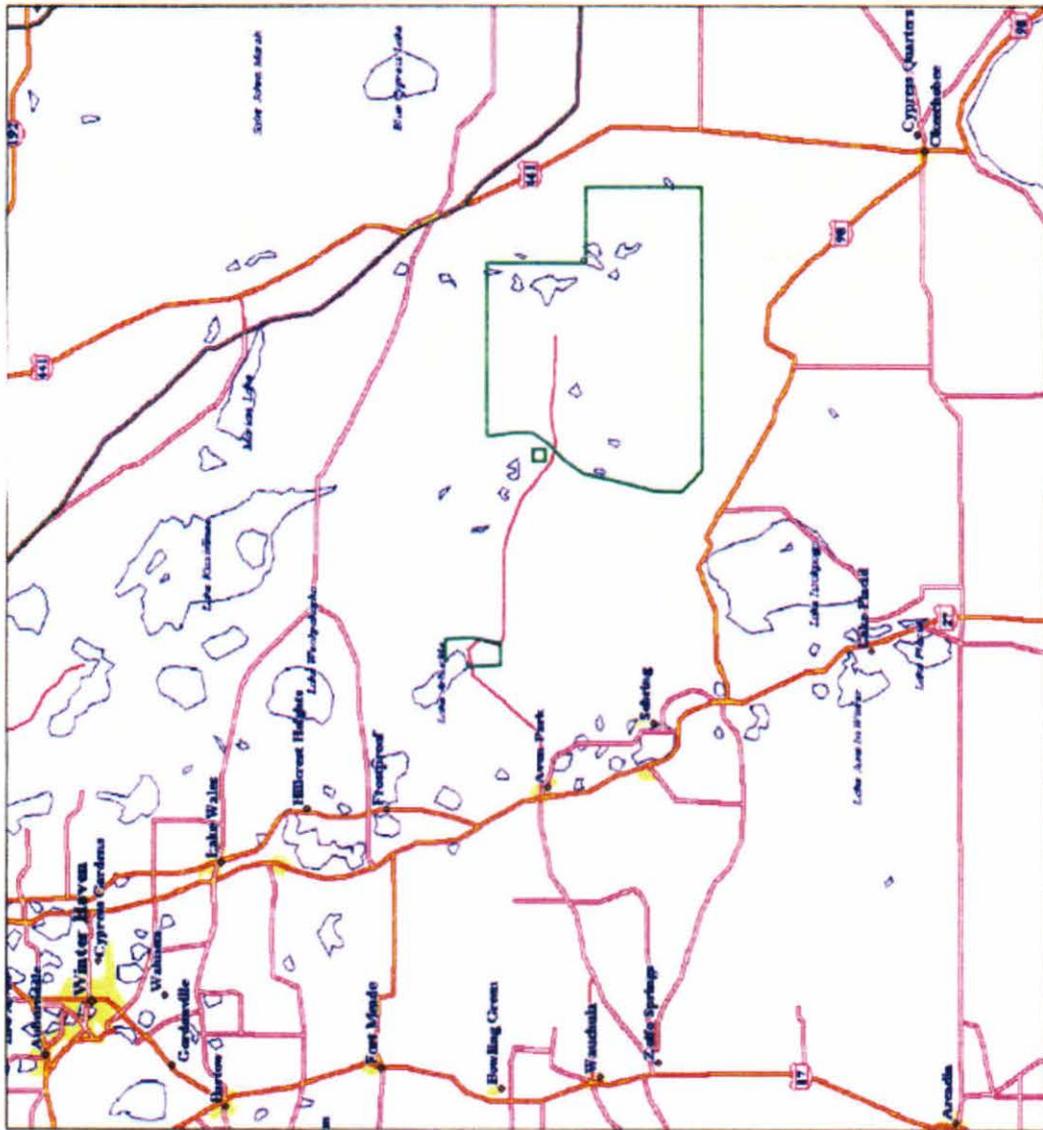


FIGURE 3-1
AVON PARK AIR FORCE RANGE
OKEECHOBEE, POLK, &
HIGHLANDS COUNTIES, FLORIDA
PROJECT #104FLO28701
VICINITY MAP

NOT TO SCALE

PROJ. DATE: OCT. 1995
 DATE OF MAP: 1995
 DRAWN BY: J. M. WATSON

4.0 Historical Ordnance Usage

4.1 Historical Site Summary

4.1.1 Dates of Operation

The U.S. Government acquired approximately 111,000 acres of land in Highland and Polk Counties, Florida, to establish the Avon Park General Bombing Range in early 1942. On 25 February 1942, the Bombing and Gunnery Range Detachment stationed at MacDill Field moved to Avon Park to locate sites for future bombing targets. The detachment constructed the targets and on 31 March 1942, the 97th Bomb Squadron stationed at MacDill Field opened the range with the first bombing mission (Avon Park Army Air Field 1942). Historical layout of the entire field is shown in Appendix K, K-1 and K-2.

Rapid expansion and construction at Avon Park General Bombing Range created a need for additional lands to meet the growing demands of its training requirements. The government acquired additional land in Okeechobee County bringing the total acreage to 218,224 (Avon Park Army Air Field 1943a).

On 28 October 1942, the 380th Base Headquarters and Air Base Squadron established a chemical section with its main function being supply and training. One end of the motor pool repair shop became the chemical warehouse. During early 1943 the base chemical section expanded and changed locations several times. The chemical section originally utilized two-thirds of Building T-526 but soon moved to a different location. Building T-541, the Motor Pool, became the new location of the chemical section. This site location lasted for five days, 9-13 April 1943. The chemical section then moved into the Technical Area where they conducted repair work and stored small items. An igloo in the Ordnance Area provided storage for incendiaries; however, since there was a large quantity of flares, the incendiaries were stored in the pyrotechnic building. In November 1943, the chemical section constructed a small shack near the Ordnance Area for the storage of toxic gases. Sometime earlier, the chemical section established a toxic gas yard to handle FS, CNB, and MR (molasses residuum) in drums. The section also established a chemical training area near the Athletic Field including two tents for gas chamber exercises using CN and C1 (Avon Park Army Air Field 1943b).

The Avon Park Station Hospital established a chemical section on 14 December 1942. The chemical warfare section attended the base gas school and received instruction in identifying chemical agents and methods of treating casualties. The chemical section maintained a building outside its regular facility for decontamination of personnel and materials (Avon Park Army Air Field 1943c).

By 8 November 1943, the field name changed to Avon Park Army Air Field (AAF). The Avon Park AAF personnel trained medium and heavy bombardment replacement training crews for overseas duties and also operated the bombing and gunnery ranges, provided base services to sub-posts, and provided services and training for Engineer Aviation Battalions, Airdrome Squadrons, and Aviation Squadrons (Avon Park Army Air Field 1943a).

By the end of 1943, crews trained on fourteen completed targets at Avon Park AAF with one target under construction. The targets included seven practice bombing targets, one demolition target, one simulated village target, one land-borne moving target, one incendiary target, one strafing target, one aerial ground gunnery target, one land skip bombing target, and one water practice bombing target (Avon Army Air Field 1943a).

The 88th Bombardment Group assigned to Avon Park AAF on 1 November 1943, used the following types of aircraft B-17F's, B-17G's, F-9's, RA-24A's, RA-24B's, P-47D's, P47G's, and UC-78's (Avon Park Army Air Field 1944a).

Immokalee AAF became an auxiliary field of Avon Park on 25 January 1944, and shared the field with units from Hendricks Field, Sebring, Florida.

On 31 December 1945, the Air Force declared surplus, approximately 111,000 acres of Avon Park AAF land located east of the Kissimmee River including bombing range areas (Headquarters Avon Park AAF 1945). The Army Air Forces retained the remaining portion of the air field for a general bombing range and it became a satellite field to MacDill Field. Currently the U. S. Air Force controls the western portions of the former Avon Park AAF Air Force and uses the land for bombing and other activities.

4.1.2 Uses of Chemical Warfare Materials

4.1.2.1 Chemical Warfare Buildings

The following list describes buildings used in conjunction with chemical warfare activities (U.S. Engineer Office 1945).

T-265	Decontamination Building	25' x 51'
	Wing	8' x 18'
T-812	Gas Storage-Chemical	6' x 16'
T-1038	Gas Chamber	16' x 24'

4.1.2.2 Chemical Warfare Training

On 16-17 February 1943, the Third Air Force Mobile Chemical Unit conducted anti-incendiary and anti-gas demonstrations at Avon Park AAF. The Mobile Unit conducted numerous incendiary and decontamination demonstrations throughout 1943. The base chemical section subjected personnel to frequent tear gas or smoke attacks (Avon Park Army Air Field 1943b).

On 11 February 1944, a Mobile Chemical Unit conducted demonstrations for all personnel at Avon Park AAF on the defense against incendiary bombs (Avon Park Army Air Field 1944b). The next day the Mobile Unit gave demonstrations in gas attack procedures.

During August 1944, troops received chemical warfare training at Avon Park AAF. This training included live mustard gas demonstrations, training with different types of detectors, working with impregnated clothing, and exercises in a mustard contaminated area (Avon Park Army Air Field 1944c). The actual contaminated training area is unknown.

4.1.2.3 Base Gas Schools

The chemical section at Avon Park AAF conducted a total of six base gas schools during 1943 (Avon Park Army Air Field 1943b).

10-26 February 1943
12-28 April 1943
21 June-7 July 1943
28 July-11 August 1943
20 September-8 October 1943
25 October-5 November 1943

4.1.2.4 Chemical Corps Permit

On 29 September 1952, the Chemical Corps requested a permit through the Chief of Engineers authorizing approximately 200 acres of land for experimental work. It further states the land and required buildings had previously been granted for the past two winters to conduct this work (Directorate of Operations 1952).

4.1.2.5 Controlled and Other Critical Items of Equipment

According to a Report of Controlled and Other Critical Items of Equipment, dated 28 February 1945, Avon Park AAF had 5 and 37/48 M1 detonating gas identification sets on hand (Third Air Force 1945).

4.1.3 Use of Conventional Ordnance

4.1.3.1 Ordnance Buildings

The following list describes buildings used in conjunction with ordnance activities at Avon Park AAF (U.S. Engineer Office Savanna 1945).

T-1	Ordnance Warehouse	48' x 112'
T-2	Bomb Sight Storage	24'4" x 41'4"
T-9	Armament Building	20' x 52'
T-24	Ord. Warehouse & Shop	48' x 112'
T-26	Bomb Sight Storage	24'4" x 41'4"
T-34	Armament Building	20' x 52'
T-65	Armament	20' x 60', 10' x 20', 7' x 16'
T-77	Gunnery & Armament Bld.	40' x 110'
T-87	Armament Building	20' x 100'
T-88	Armament Building	20' x 100'
T-543	Ordnance Repair Shop	48' x 112'
T-808	Small Arms Ammunition & Warehouse	20' x 64', wing 3' x 5'
T-809	Ammunition Assembly & Main Shop	33' x 96'
T-810	Pyrotechnic Storage	20' x 28'
T-811	Storage/Igloo	20' x 40'
T-815	Fuze Storage	5' x 10'
T-816	Fuze Storage	5' x 10'
T-817	Fuze Storage	5' x 10'
T-818	Fuze Storage	5' x 10'
T-819	Fuze Storage	5' x 10'
T-820	Storage/Igloo	20' x 22'
T-821	Storage/Igloo	20' x 22'
T-822	Storage/Igloo	20' x 22'
T-824	Pyrotechnic Magazine	15' x 16'
T-825	Segregated Storage	10' x 40'

4.1.3.2 Range Descriptions

The following table describes excessed training areas and bombing targets at Avon Park (Headquarters Avon Park Bombing Range 1943, Headquarters Avon Park Army Air Field 1944, Headquarters Army Air Base MacDill Field 1946). All range locations are shown on Plate 1 in the Report Plates section and Historical Maps K-1 and K-2 in Appendix K.

Description	Location	Type
Target XI	Located 16.5 miles southeast of main field at latitude 27°34'40" north, longitude 81°05'10" west	Land skip bombing
Target XII	Located at latitude 27°33'57" north, longitude 81°02'07" west	Practice bombing target
Range XII	Located at latitude 27°31'20" north, longitude 80°58'25" west	Position firing course
Target XIII	Located at latitude 27°32'20" north, longitude 81°00'20" west	Practice bombing target
Target XIV	Located at latitude 27°28'50" north, longitude 81°30'50"	Practice bombing target
Target XV	Located at latitude 27°30'50" north, longitude 80°53'30" west	Practice bombing target
Range XIX	Located at latitude 27°31'55" north, longitude 81°06'15" west	Position firing course
Water Practice Bombing Target	Located in the southeastern section of Lake Kissimmee at latitude 27°53'00" north, longitude 81°12'20" west	Practice and skip bombing target
Area Bombing Target	Located 18 miles from the main field at latitude 27°36'50" north, longitude 81°03'20" west	Formation bombing

The following table describes inactive and active ranges which are located on the still active portion of Avon Park Bombing Range (state of Florida 1955, Headquarters, Avon Park Bombing Range 1943). All range locations are shown on Plate 1 in the Report Plates section and Historical Maps K-1 and K-2 in Appendix K. Detailed information is shown in Appendices C-1, C-2, C-3 and C-4.

Description	Location	Type
Target I	Located at latitude 27°43'40" north, longitude 81°24'40" west	Practice bombing target
Target II	Located at latitude 27°34'30" north, longitude 81°10'35" west	Practice bombing target
Target III	Located at latitude 27°41'25" north, longitude 81°15'15" west	Demolition bombing target
Target IV	Located at latitude 27°43'40" north, longitude 81°43'40"	Practice bombing target
Target V	Located at latitude 27°35'55" north, longitude 81°16'40" west	Submarine bombing target
Target VI	Located at latitude 27°33'35" north, longitude 81°19'40" west	Practice bombing target
Target VII	Located at latitude 27°34'35" north, longitude 81°15'50" west	Land borne bombing target
Range IX	Located 10.2 miles east of main field at latitude 27°37'00" north, longitude 81°11'00" west	Strafing and aerial ground gunnery
Target XX	Located at latitude 27°38'20" north, longitude 81°15'00" west	Incendiary target
OQ Range	Location unknown	.50 calibre ammunition
Rifle Range	Located in Section 29, Township 32 south, Range 30 east, and the impact area extends into Sections 15, 16, 20, 21, 22	1,000" pistol range

4.1.3.3 Types of Ordnance

According to a 10 April 1942 newspaper article, the Army Air Forces would begin bombing Avon Park General Bombing Range with bombs ranging in size from 15 lb. practice bombs to 2000 lb demolition bombs containing ½ ton of high explosives (Avon Park Army Air Field 1942).

Avon Park AAF had twenty-six thousand M1A1 practice bombs on hand and being stored in an open area on 3 July 1945 (Headquarters, Avon Park Army Air Field 1945).

4.1.3.4 Certificates of Clearance

On 22 November 1949, Project Engineer, John B. Campbell issued a Certificate of Clearance for portions of the Avon Park AAF described as follows (Corps of Engineers 1949).

All the portion of Section 25 and 36, Township 32 South, Range 29 East lying Southeast and Northeast, respectfully; all the land within the Boundaries of Section 29, 30, 31 and 32, Township 32 South, Range 30 East; and Section 5 and 6, Township 33 South, Range 30 East, known as the cantonment and Field Areas of the Avon Park Air Force Base, located in Polk and Highland Counties 10.5 miles East of Avon Park, Florida, have been given a careful visual search and have been cleared of all dangerous and/or explosive materials reasonably possible to detect. It is recommended that the lands be used for any purpose for which it is best suited.

This area is shown on Figure 4-1.

The 2702nd Explosive Ordnance Disposal Detachment, Robins Air Force Base, Georgia, issued a Certificate of Clearance on 22 September 1958, for the Avon Park Bombing and Gunnery Range land east of the Kissimmee River located in Section 2, Township 34 South, Range 31 East, in Okeechobee County, Florida. The detachment gave the land (consisting of a bluff bordering the river) a visual inspection and cleared it of all dangerous or explosive materials reasonably possible to detect (Robins Air Force Base 2702nd Explosive Ordnance Disposal Detachment 1958). This area is shown on Figure 4-2.

Copies of these certificates are included in Appendices C-5 and C-6.

4.1.3.5 Incidents With Ordnance

During 1946 two ordnance incidents occurred. On 25 May 1946, Richard Jones, a three year old resident of Avon Park, died after playing with a souvenir military fuze. A fisherman found the fuze in Arbuckle Creek and then carried it away.

In a letter discussing the improper disposition of bomb fuzes, Major Thomas L. Thacker determined during September or October 1945, approximately 200 live bomb fuzes in their original packaging containers (AN-M103

and AN-M101A2) were dumped from a bridge (the second entrance into the air field) into deep water in Arbuckle Creek (Headquarters, Avon Park Army Air Field 1946). During the spring of 1946, a severe drought lowered the water level in Arbuckle Creek, exposing the fuzes.

Personnel from Avon Park AAF searched the area for fuzes and disposed of any fuzes by demolition. To warn people of the dangers of explosives and to locate any other remaining fuzes, officials placed announcements in local newspapers and at schools.

The same letter implies personnel may have adopted improper disposal methods to expedite clearing the ordnance area. They may have disposed of other items in the same manner.

Another incident occurred involving the same type of fuzes on 9 November 1946. One child died and four others received injuries by a fuze found under a vacant house located in Avon Park. Six months prior to the incident, a fisherman found a fuze in Arbuckle Creek. A witness described the fuze to be approximately 18 inches long, without a propeller and containing marble-like materials (Headquarters, Avon Park Army Air Field 1946).

Arbuckle Creek and the subject bridge are identified on Plate 1 and Figure 4-1. A complete copy of the correspondence is included in Appendix C-7.

4.1.4 Biological Warfare Usage and Testing

4.1.4.1 Fort Detrick Usage

Fort Detrick officials conducted field trials using defoliants during March and April 1955 at undisclosed locations at Avon Park, Florida. The following list describes the chemicals selected for testing (Chemical Corps Research and Development Command, Biological Warfare Laboratories, Crops Division 1956).

1. Applied in oil: tributyl phosphate, pentachlorophenol, si-(ethyl-xanthogen) trisulfide, butyl 2,4-D and butyl d,4,5-T mixtures, and butyl 2,4,5-T alone.
2. Applied in water: 2-butyne-1, 4diol, ammonium thiocyanate, 2-sec-butyl- 4,6-dinitrophenol, disodium 3,6-endoxohexahydrophthalate, magnesium chlorate, (hexahydrate), monosodium cyanamid, sodium chlorate-sodium pentaborate mixture, and 3-amino-1,2,4-triazole.

3. Applied in acetone: 2,4-dichlorophenoxyacetamide. With the exception of butyl 2,4,5-T, tributyl phosphate, ammonium thiocyanate and 2,4-dichlorophenoxyacetamide, the chemicals were commercial formulations. Consequently, the results obtained were due to the combined effect of the active ingredient, additives such as surfactants, and solvents.

The following oils were tested as solvents.

- a. Diesel oil - distilled from petroleum after the kerosene fraction
- b. Deobase - deodorized kerosene, non-phytotoxic
- c. Varsol - a petroleum solvent
- d. Richsol - a highly volatile dry-cleaning fluid
- e. Sevacide - a phytotoxic oil

According to a 21 September 1955 memorandum, officials from Fort Detrick used several buildings at the base and range located at Avon Park. A group of ten to twenty men used the base six months each year in conjunction with a classified mission (Directorate of Real Property 1955). The memorandum did not state the number of years Fort Detrick used the base.

4.1.4.2 Biological Testing

The 3210th Chemical and Ordnance Test Group of the Armament Test Division which supported the Ordnance Department at Aberdeen Proving Ground, Maryland, conducted biological tests at Avon Park AAF. Sometime during 1 July-31 December 1951, the 3210th Chemical and Ordnance Test Group conducted a test investigating low volume and low altitude spraying of anti-crop agent (Air Proving Ground Command 1951).

4.1.5 Other Hazards

4.1.5.1 Hydrocyanic Acid Gas School

During 31 January through 2 February 1944, the Fourth Service Command conducted a Hydrocyanic Acid Gas School at Avon Park AAF (Corps of Engineers, c. 1944). Due to the large quantities of insects, rodents, etc. fumigation of property became necessary. The school trained personnel in the proper techniques of using hydrocyanic acid or methyl bromide as fumigants.

4.1.5.2 DDT Spraying

A letter from First Lieutenant Grover Morgan to the Commanding Officer MacDill Field, dated 9 August 1946, requests aerial spraying or dusting with DDT for 4,000

acres at Avon Park AAF to control the mosquitoes (Headquarters, Avon Park AAF 1946). The research team found no documentation indicating if the DDT spraying actually occurred.

4.2 Review of Historical Records

Records relating to the history of Avon Park AAF were reviewed at the following locations. The research team consisted of Ms. Shelia Thomas and Ms. Nancy Gerth, CELMS-PD-R. Under each location is a list of the Record Groups (RG) or accessions reviewed and a description of each relevant document copied.

**National Archives
8th and Pennsylvania
Washington, D.C. 20408
POC: Mr. Richard Peuser
(202) 501-5671**

RG 18 Records of the Army Air Forces

Entry Project Files - Air Fields, 1939-1942

Entry 2 (NM-6) Air Adjutant General
Boxes 2259, 2316

Entry 292 (NM-53) Central Decimal File, 1944-1946
Boxes 1264, 1468, 2258, 2260, 2283, 2284, 2285, 2286, 2314, 2315,
2800, 2801, 3193

Box 3194

Letter from Brigadier General Robert Kauch to the National Guard Bureau, Bombing and Gunnery Ranges for National Guard Units, dated 4 February 1948.

Entry 294 (NM-53) Air Adjutant General Formerly Security-Classified Bulky Decimal Files

Box 813

U.S. Corps of Engineers Jacksonville Map Bombing and Gunnery Range Layout Plan for Avon Park, Florida, dated December 1942.

RG 107 Records of the Office of the Secretary of War

Entry 74(102) Project Decimal File, 1943-1946
Boxes 126-133, 205

RG 153 Records of the Office of the Judge Advocate General

Entry Reservation Files, 1800-1953
Boxes 105-117

RG 165 Records of the War Department General and Special Staffs

Entry 74(102)
Box 7

Entry 484G
Boxes 7-9

Entry 484J
Box 4

RG 407 Records of the Army Adjutant General

Entry Project Decimal File, 1940-1945

**National Archives
Suitland Reference Branch
4205 Suitland Road
Suitland, Maryland 20409
POC: Mr. Rich Boylan
(301) 457-7182**

RG 77 Records of the Chief of Engineers

Accession A53-182

Entry 391 Construction Completion Reports, 1917-1943

Entry General Correspondence Relating to Air Fields and Related Facilities,
1940-1945
Boxes 9-11, 15, 16, 24-26

RG 92 Records of the Office of the Quartermaster General

Entry 1892 General Correspondence (Geographic File), 1936-1954

RG 175 Records of the Chemical Warfare Service

Entry 2 Index Briefs, 1918-1942

Entry 2B Correspondence with the War Department and other Government Agencies, Army Commands and Units, and Schools, 1942-1945
Boxes 31, 32, 34, 38, 45-51

Entry 4L Security-Classified Reports, Studies, Histories, and Other Records Relating to the Chemical Warfare Service, 1920-1946
Boxes 189, 190, 192-195

Entry 67A4900 Station Files, 1946-1954
Boxes 283-321, 324-329, 335, 337-338, 343, 350-354, 356, 359-361

RG 338 Records of the U.S. Army Commands

Entry 4th Service Command

Box 49

Report of Hydrocyanic Acid Gas Schools, dated c. 1943.

RG 341 Records of Headquarters U.S. Air Force

Entry 494 Correspondence Relating to Real Estate Facilities, 1948-1955

Box 85

1. Letter from Lieutenant Colonel Leon E. Bell to the Honorable Claude Pepper regarding Avon Park, dated 4 November 1949.
2. Letter from Colonel Joseph E. Gill to the Director of Legislation and Liaison, dated 24 October 1949.
3. Letter from Lieutenant Colonel Harvey Hogan to the Commanding General, 307th Bombardment Wing regarding the Declaration of Surplus, dated 19 August 1949.
4. Letter from Colonel B.R. Wimer to the Chief of Engineers regarding a request for report, dated 8 March 1949.

National Archives and Records Administration

Cartographic Center

8601 Adelphi Road

College Park, Maryland 20740-6001

POC: Reference Desk

(301) 713-6800

RG 269 Records of the General Services Administration

Entry 62, Accession NN3-269-84-24
Box 4

**Washington National Records Center
4205 Suitland Road
Suitland, Maryland 20409
POC: Ms. Velecia Chance
(301) 457-7010**

RG 77 Records of the Chief of Engineers

Accession A53-325
Box 53

RG 291 Records of the Property Management and Disposal Service

Accession 73-8
Box 3

Accession 66A-2712

Box 52

1. Certificate of Clearance issued by 1st Lieutenant James Thompson, dated 22 September 1958.
2. Letter from J. Edward Williams to J.H. Macomber regarding Land in Polk County, dated 9 February 1961.
3. Office Memorandum regarding Portion of Avon Park, dated 30 June 1960.
4. Letter from John H. Matthews to the Chief, Disposal Branch dated, 26 February 1960.
5. Letter from J. Edward Williams to Hon. Spessard Holland, dated 1 February 1961.

RG 341 Records of the U.S. Air Force

Accession 341-61A-1464

Box 14

1. Permit to Use Rifle Range at Avon Park Air Force Base, Florida, dated 4 August 1955.
2. Survey of Avon Park Air Force Base, Florida, dated 21 September 1955.
3. Declaration of Excess, Avon Park Air Force Base, Florida, dated 7 November 1952.

**National Personnel Records Center
Military Personnel Records
9700 Page Avenue
St. Louis, Missouri 63132-5100
POC: Mr. Wilson Sullivan
(314) 538-4085**

Accession 342-47A-4201
Box 1

Accession 342-47A-6141
Box 1-5

Box 2

1. Letter from First Lieutenant Lawrence Drew to the Commanding General, III Fighter Command, Drew Field regarding Fighter Demolition Bombing at Avon Park, 2 August 1943.
2. Message form from the Headquarters III Fighter Command to the Commanding Officer of Avon Park regarding bombing missions to be conducted by Bartow AAF and Fort Myers AAF, 20 July 1943.
3. Message form detailing types of aircraft used at various ranges including Avon Park, 20 July 1943.

Box 3

1. Letter from Lieutenant Colonel Ward W. Harker to the Commanding General, III Fighter Command regarding the procurement of dive-bombing ranges, 22 May 1944.
2. Letter from Lieutenant Colonel A.C. Strecker to the Commanding General Third Air Force regarding dive bombing targets, 24 May 1944.
3. Letter from First Lieutenant W.H. Prescott to the Commanding General III Fighter Command regarding submarine target located at Avon Park Bombing Range, 2 June 1944.

Accession 342-48A-4122

Box 1

1. Headquarters, Avon Park Bombing Range Investigation of Okeechobee Area, dated 21 May 1942.
2. Headquarters, Avon Park Army Air Field Cancellation of Leases - Bombing Range Property, dated 11 October 1945.

3. Headquarters, 3rd Air Force Investigation of Okeechobee Area, dated 10 May 1942.

Accession 342-48A-4123
Box 1

Accession 342-48A-6088

Box 2

Letter from Major Clarence Keen to the Commanding General, Continental Air Forces, Bolling Field regarding Disposition of Avon Park Army Air Field, 17 September 1945.

Accession 342-48C-6088
Box 1

Accession 342-49C-4005
Boxes 1-12

Accession 342-49L-4005
Boxes 1-19

Accession 342-50H-4002
Boxes 1-5

Accession 342-50I-4002
Box 1

Accession 342-50J-4002
Boxes 1-32

Box 2

1. Location Map of Avon Park's Auxiliary Fields.
2. Air photo of Avon Park, Florida, dated 2 February 1943.

Accession 342-54-A-6073, Boxes 1-4

Box 1

1. Letter from Captain Norbert J. Oswald to the Commanding General, Strategic Air Command regarding Bombing Ranges and Targets, dated 9 August 1947.
2. Letter from First Lieutenant Raymond A. Vogel to the Commanding General Fifteenth Air Force regarding the Decontamination of Avon Park

Bombing Range, dated 29 July 1946.

3. Letter from Colonel J.H. Houghton to the Commanding General MacDill Army Air Field regarding the Use of Bombing Range at Avon Park, dated 8 July 1946.

4. Letter from Colonel Bayard Johnson to the Commanding Officer, Miami Air Depot regarding Avon Park, dated 11 July 1946.

5. Training SOP Number 50-1, Bombing Avon Park Bombing Range, dated 10 May 1946.

Box 2

1. Letter from First Lieutenant R.H. Quindell to the Commanding General, Third Air Force regarding the Status of Range Report, dated 6 September 1943.

2. Letter from Brigadier General James E. Briggs to the Commanding General, Fifteenth Air Force regarding Avon Park Bombing and Gunnery Range, dated 9 November 1949.

3. Avon Park Bombing Range Map, no date.

4. Jacksonville Corps of Engineers Map Avon Park Bombing Range Additional Poorman Range, May 1944.

5. Jacksonville Corps of Engineers Map Avon Park Bombing Range Flexible Gunnery Range, May 1944.

6. Jacksonville Corps of Engineers Map Bombing and Gunnery Range, Additional Recreation Facilities, September 1943.

Accession 59A-6180

Boxes 1-26

U.S. Air Force Historical Research Agency

600 Chennault Circle

Maxwell Air Force Base

Montgomery, Alabama 36112-6424

POC: Mr. Archie DiFante

(334) 953-2392

Unit Histories

Box 234.487--234.489

File 00150463

Historical Survey 1941-1942 61st Flying Training Detachment Army Air Forces Contract Pilot School (Primary), Lodwick Aviation Military Academy, Avon Park, Florida.

File 00150464
Aerial Photograph Avon Park, dated 3 March 1942.

File 00150467
Discontinuance of AAF Base Unit, dated 6 November 1944.

Box 280.48-1--280.48-2

File 00169437
History of Avon Park Army Air Field, Avon Park, Florida, period:
7 December 1941 to 31 December 1942.

File 00169438
History of Avon Park Army Air Field, Avon Park, Florida, 1 January 1943 to
31 December 1943.

File 00169439
Historical Review of Station Hospital Avon Park Army Air Field Avon Park,
Florida, 31 December 1942 through 31 December 1943.

File 00169441
Annex 16, 922nd Quartermaster Boat Co. History from January 1943 to
January 1944.

Box 280.48-2--280.48-2

File 00169443
History Chemical Section Avon Park Army Air Field Avon Park, Florida,
1 January 1943 to 31 December 1943.

Box 280.48-2A--280.48-4

File 280.48-2A
History of Avon Park Army Air Field, Avon Park, Florida, period:
1 February 1944 to 1 March 1944.

File 280.48-4
History 88th Bombardment Group (H) Avon Park Army Air Field, Avon Park,
Florida, period: 1 January 1944 to 1 February 1944.

Box 280.48-5--280.48-7

File 280.48-6

History of Avon Park Army Air Field, Avon Park, Florida, period:
1 April 1944 to 1 May 1944.

File 280.48-7

Map Avon Park Bombing Range, dated 19 January 1944.

Box 280.48-8--280.48-12

File 280.48-8

History Avon Park Army Air Field, Avon Park, Florida, period: 1 June 1944
to 1 July 1944.

File 280.48-10

History of Avon Park Army Air Field Avon Park, Florida, period:
1 August 1944 to 1 September 1944.

Box 280.48-13--280.48-45

File 280.48-32

History of Avon Park Army Air Field (MacDill Field Fifteenth Air Force) for
June 1946.

File 280.48-34

History of Avon Park Army Air Field (MacDill Field Fifteenth Air Force) for
August 1946.

File 280.48-37

1. History of Avon Park Army Air Field for December 1946.
2. History of Avon Park Army Air Field for November 1946.

File 280.48-39

History of Avon Park Army Air Field for January 1947.

File 280.48-40

History of Avon Park Army Air Field for February 1947.

File 280.48-42

History of Avon Park Army Air Field for 1-30 April 1947.

Box 280.48-46--280.51-11

Box 234.489.100--234.492-300

Box 280.48-1--280.48-2

Box KWG-363-HI

Box KWG-363-HI--KWG-363-HI

Box K240.01--K240.01

File K240.01 vol. 1 July-Dec 1951
History of the Air Proving Ground Command 1 July to 31 December 1951,
Volume 1.

Box 234.487--234.489

Corps of Engineers Boxes

Box 02010490-02010520

Box 02010521-02010552

Box 02010553-02010574

Ordnance Storage Facilities for the Operational Training Unit at Avon Park
Field, Avon Park, Florida, dated 24 June 1942.

Box 02025367-02025417

Box 02031052-02031084 MacDill-Mabry (Dale)

Letter from C.F. Duncan to the Chief of Engineers, Department of the
Army regarding an "OQ" Gunnery Range located at Avon Park, Florida,
5 May 1948.

**Historical Office
U.S. Army Chemical-Biological Defense Command
Building E5183
Aberdeen Proving Ground, Maryland 21010-5423
POC: Mr. Jeff Smart
(410) 671-4430**

Report of Controlled and Other Critical Items of Equipment Avon Park Army Air
Field, dated 28 February 1945.

National Archives-Southeast Region
1557 St. Joseph Avenue
East Point, Georgia 30344
POC: Mr. Dave Hilkert
(404) 763-7477

RG 270 Records of the War Assets Administration

RG 103 Records of the Farm Credit Administration

Accession 52-A-118
Box 33

Federal Records Center-Atlanta
1557 St. Joseph Avenue
East Point, Georgia 30344
POC: Reference Archivist
(404) 763-7438

Finding aids were reviewed but no pertinent information was located.

Avon Park Public Library
116 E. Main St.
Avon Park, Florida 33825
POC: Reference Librarian
(813) 452-3803

U.S. Air Force

n.d. 56th Combat Support Squadron Avon Park Air Force Range Handout.
Vertical File. Avon Park Public Library, Avon Park, Florida.

Washington, Romona

1993 Base Natural Resource Office May Expand. *The News-Sun*. Highland
County, Florida. 22 September.

Byrne, Al

1994 Archaeological Dig Uncovers Remains at Range. *The News-Sun*.
Highland County, Florida. 30 January.

4.3.1 Sergeant First Class Campbell
Operations Sergeant
66th EOD
Cape Canaveral, Florida
DSN 467-9951
407/853-9951

Phone conversation with Randy Fraser, St. Louis District, Corps of Engineers:

Sergeant First Class Campbell is the unit's Operation Sergeant and has been assigned to the 66th for several years. I called the 66th EOD to discuss EOD type activity on the inactive portions of Avon Park Bombing Range. I explained to him that I was with the Army Corps of Engineers, and why the Corps was interested in these areas. He researched the unit's historical records but could not find any reports of past incidents pertaining to the property in question. He did say that they have responded to a few incidents in the past, maybe one or two a year. He could not tell me incident locations, he assumed they had been on the active portion of the range. The National Guard uses portions of Avon Park for training and the ordnance recovered was probably from their activities. Incidents included mortars (60mm and 81mm), and projectiles (undetermined sizes).

4.3.2 Detective Murous
Okeechobee County Sheriff's Department
941/763-3117

Phone conversation with Randy Fraser, St. Louis District, Corps of Engineers:

I talked to him about the inactive portion of Avon Park which was in Okeechobee County. Detective Murous is considered the bomb technician for Okeechobee County and has been with the Department for eight years. I wanted to know if he has ever responded to any military ordnance in the aforementioned area. He informed me that he has never had any ordnance items reported since he has been there. He asked another individual who has been with the Sheriffs Department for over twelve years and he could not recall any reported ordnance. He mentioned the fact that if any ammunition had been found and reported to law enforcement that he would have been the individual that would have responded initially. I informed him that we would be conducting a site visit during the week of 13 November. I arranged to meet with him during that week to discuss our itinerary and talk to him further. He warned me of the type of people we may encounter and recommended, if nothing else, stopping in at the Sheriff's office prior to adventuring out into the county. I asked him if he or another deputy would be interested in

accompanying us during the visit. He said he would go along if he was able to get away. He couldn't promise anything. I told him that I would talk to him prior to arriving to confirm our appointment.

Follow-up:

Detective Murous was contacted during the St. Louis District inspection team visit to the area. He introduced the team to Chief O.L. Raulerson and Captain Robert Kelly of the Okeechobee County Sheriff's Department. Both men have been long time residents of the area and were familiar with the bombing range property. Neither one could ever remember any live bombs or explosives being found in the area. They indicated that Mr. Payton Wilson and his son, Mr. Coot Wilson, own most of the range property.

4.3.3 Mr. Al Byrnes
Avon Park Air Force Base
Operations Office
941/452-4260

Phone conversation with Randy Fraser, St. Louis District, Corps of Engineers:

I spoke to Mr. Byrnes regarding the inactive portions of Avon Park Bombing Range. I explained to him that I was with the Army Corps of Engineers, and why the Corps was interested in these areas. I asked if he knew of any ordnance items being reported or recovered from the property in question. He told me that he could remember ordnance being found, but other than one incident that occurred recently (rocket being accidentally fired from an aircraft off the installation) he could not recall any details. He said that they had just recently published a document in which lists all ammunition used at Avon Park and that he would furnish me a copy. He also will send me a current map of Avon Park Bombing Range. I informed him of our plan to conduct a site visit and asked him if he would mind us stopping in to talk with him when we arrive. He said that he would be happy to assist us in any way he could. I'll wait until I receive the information before we discuss this further.

Follow-up:

After going over the documents and maps that Mr. Byrnes had sent us I called him back, thanked him for the information and reconfirmed our appointment with him. At which time we will discuss in detail our itinerary for the site visit. We need to ensure we get clearance from the Avon Park Range Control Tower prior to our site visit. Our investigation will come dangerously close to an active range.

4.3.4 Mr. Roger Grebing
Avon Park Air Force Range
Environmental Engineer
941/452-4298

Mr. Grebing was interviewed during the site visit by the St. Louis District inspection team. Mr. Grebing was familiar with the area and the various ordnance and explosives operations that had been carried out by the Air Force. He was not aware of any munitions or explosives remaining on any of the excessed portions of the facility.

4.3.5 Sergeant Stevens
Operations Sergeant, EOD
MacDill AFB
Tampa, FL
813/828-4406

Phone conversation with Randy Fraser, St. Louis District, Corps of Engineers:

We discussed EOD type activity on Avon Park Bombing Range. I explained to him that I was with the Army Corps of Engineers, and why the Corps was interested in these areas. He said that they only kept records for 12 months, and the unit has not been to Avon Park in nearly two years. I queried him on past incidents specifically in areas that were considered inactive (FUDES). I got the impression that he was not that familiar with the Avon Park Range. His information was very general and noncommittal. The only range that he had mentioned by name was the Nuclear Range, and what was used on this specific range, that being the Mk106 practice bomb. All other information was general and off the cuff. The following ordnance was mentioned: Practice Bombs BDU 38, BDU 33, and the Mk106; 2.75-inch Rockets, Practice and WP; Projectiles to include 105mm, 155mm, and 8", all being HE. He also mentioned they recovered a 500 lb. concrete filled M82 which he suspected of being accidentally released or a possible ricochet from its intended target. I asked him if they have ever recovered any M38A2 practice bombs, he said they have not. He also mentioned that they had recovered flares.

I was given a point of contact at Avon Park Operations, who might be able to help. His name is Al Byrnes, at 941/452-4260.

4.3.5 Mr. Payton Wilson
Owner, Latt Maxcy Corporation
941/635-4804

Phone conversation with Tom Freeman, St. Louis District, Corps of Engineers:

The Latt Maxcy Corporation owns a large portion of the land that was formerly used for the bombing and gunnery ranges during World War II. Mr. Payton Wilson indicated that he was somewhat familiar with the former use. He was aware of two piles of bomb scrap on his property. He said that no live bombs or ammunition had ever been encountered. The land was so sparsely populated that he questioned why the Government was even concerned about it. He did agree to have Mr. Bob Manson, who is in charge of security for the ranch and also an Okeechobee County deputy sheriff, accompany the St. Louis District inspection team on their site visit.

4.4 Air Photo Interpretation and Map Analysis

4.4.1 Interpretation of Aerial Photography

Photoanalysis and land use interpretation were done using the following listed photography:

<u>Photography Date</u>	<u>Scale</u>	<u>Source</u>	<u>Identifier(s) Frame(s)</u>
17 Mar 1952 & 07 Apr 1952	1:20,000	ASCS	3 thru 8; 144 thru 150; 52 thru 57; 154 thru 161; 196 thru 200; 80 thru 87
15 Mar 1958	1:20,000	ASCS	30 thru 35; 97 thru 103; 36 thru 43; 26 thru 32
10 Jan 1959	1:20,000	ASCS	33 thru 39; 201 thru 207
31 Jan 1962	1:20,000	ASCS	175 thru 184; 228 thru 235; 70 thru 72; 259 thru 260; 62 thru 69; 81 thru 95; 131 thru 145; 13 thru 28; 32 thru 47; 61 thru 76; 149 thru 163; 104 thru 119; 169 thru 179; 134 thru 140

22 Jan 1968	1:20,000	ASCS	94 thru 100; 152 thru 159
18 Mar 1974	1:20,000	ASCS	53 thru 60; 74 thru 80
23 Mar 1974	1:20,000	ASCS	40 thru 43; 48 thru 51; 129 thru 132; 234 thru 242; 287 thru 295; 38 thru 47; 17 thru 31; 35 thru 49; 277 thru 291; 259 thru 273; 211 thru 225; 193 thru 207; 143 thru 152; 122 thru 128

The maps cited at paragraph 4.4.2 (below) were used as references for the photography.

Photography listed above covering the Avon Park Range was examined. Features visible on the photography and considered to be significant are shown and described on Figures 4-3 through 4-6. The only significant ordnance-related feature definitively identified on the aerial photography was one formation bombing target in Area 5. Other ground disturbances or marks in Area 5 were noted but could not be confirmed as having been caused by ordnance activities. These marks were investigated as part of the site inspection.

<u>Figure</u>	<u>Year of Photo</u>	<u>Title</u>
4-3	1958	Area 1 and 2
4-4	1954	Area 3
4-5	1954	Area 4
4-6	1954	Area 5

Terrain at the site is flat and swampy. Sinkholes due to the solution of the underlying limestone are visible throughout. The drainage is irregular due to the karst topography. Canals can be found in areas of heavy karst. The Florida Turnpike Toll Road cuts through north of the study area. Dirt or gravel trails are visible throughout the western end of the study area, as are levees. Few man-made structures are visible in the area.

4.4.2 Map Analysis

The site was analyzed using the following maps:

(1) USGS 7.5 minute quadrangle maps:
Basinger, FL (1953), photorevised 1972;
Fort Kissimmee SE, FL (1953);
Fort Drum SW, FL (1953);
Fort Kissimmee SE, FL (1953);
Fort Drum SW, FL (1953);
Lake Arbuckle NE, FL (1952), photorevised 1972;
Lake Marian NW, FL (1953), photorevised 1972;
Lake Marian SW, FL (1953), photorevised 1972.

(2) Base Layout Plans: Two historical range maps, one dated September 1945, the other undated but from the World War II era.

(3) Real Estate Maps: none

Review of the above-cited map sheets confirms general descriptions found in paragraph 4.4.1 above. The maps were also useful in locating boundaries and identifying features on the photography.

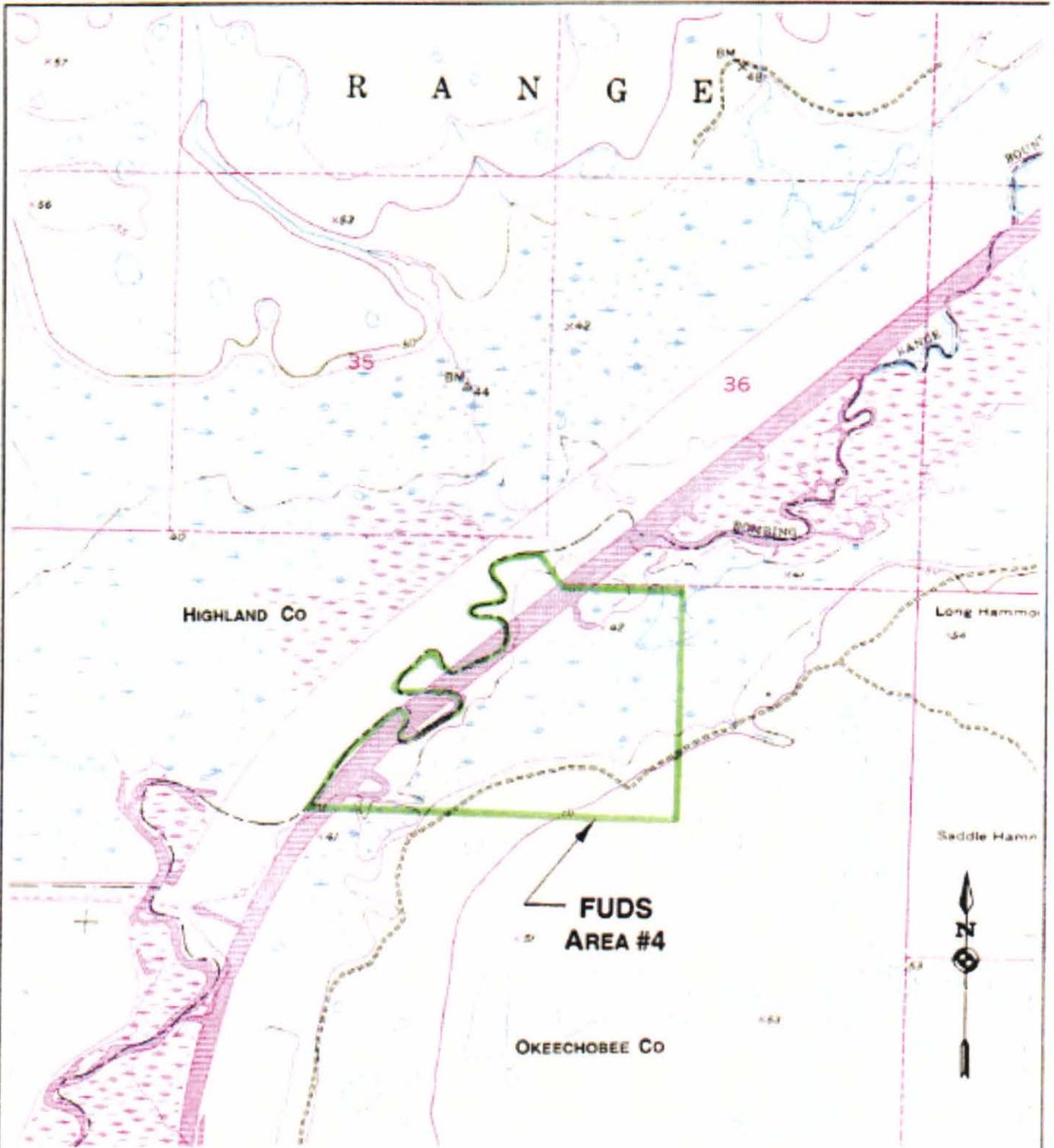


Figure 4-1

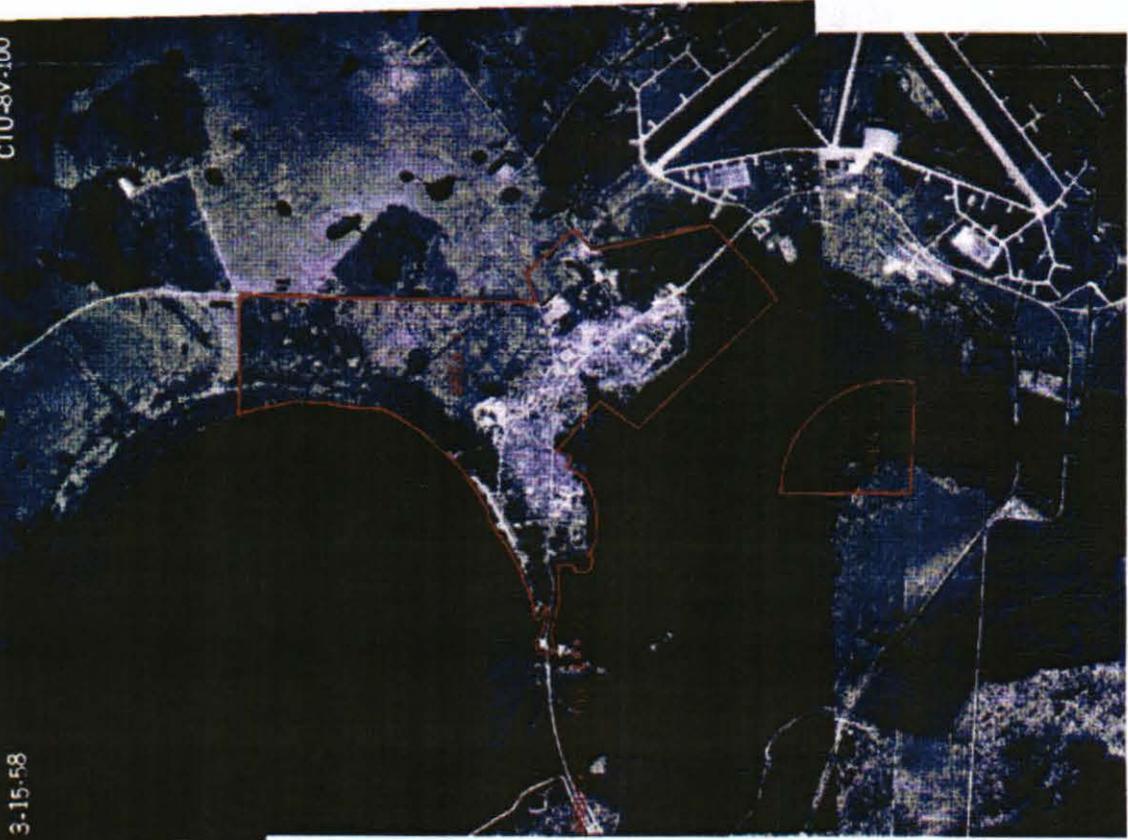
Legend:



Ordnance Clearance Area

USAF Avon Park Range
 Ordnance Clearance Area - 1958
 DERP-FUDS # I04FL028701
 Okeechobee County

CTU-8V-100



3-15-58

AREA 1 & 2

NO VISIBLE EVIDENCE OF ORDNANCE OR EXPLOSIVES.



NOT TO SCALE

FIGURE 4-3

USAF AVON PARK RANGE
 OKEECHOBEE, POLK, &
 HIGHLANDS COUNTIES, FLORIDA
 PROJECT #104FL028701
 1958 AERIAL PHOTO

PROJ. DATE: OCT 1995
 22 MAR 1996 5:28
 DATE OF PHOTO: 1958
 PHOTOGRAPHIC CENTER: GAITHER, WARDER & KOPPELSTADT



AREA 3

NO VISIBLE SIGNS OF ORDNANCE OR EXPLOSIVES. BARE AREA COULD POSSIBLY BE DISTURBED SOIL.

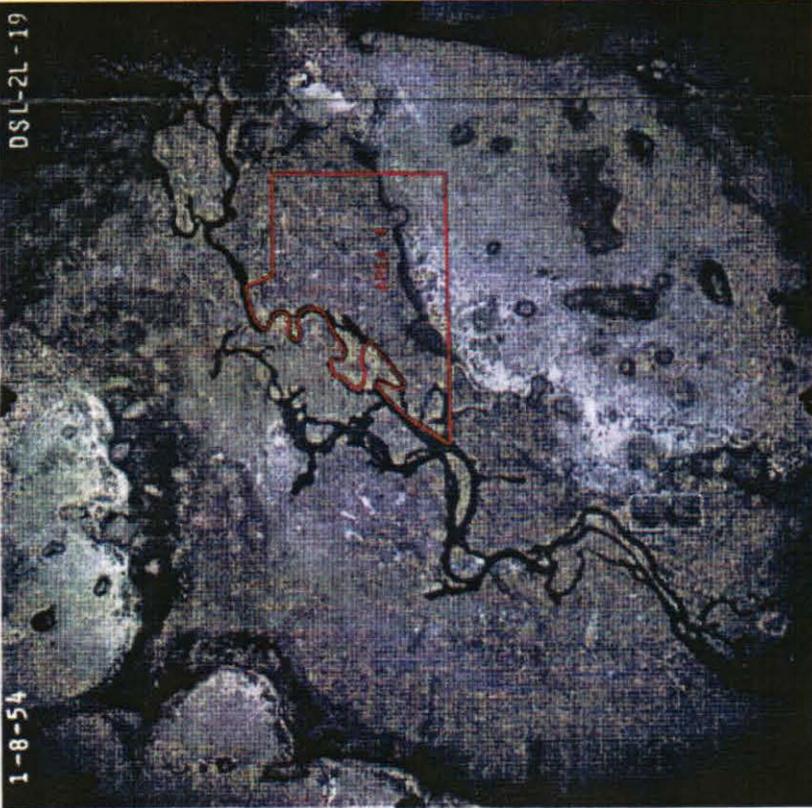


NOT TO SCALE

FIGURE 4-4

USAF AVON PARK RANGE
OKEECHOBEE, POLK, &
HIGHLANDS COUNTIES, FLORIDA
PROJECT #104FL028701
1954 AERIAL PHOTO

PHOTO DATE: OCT 1955	DATE OF PHOTO: 1954
13-441-100-701-4	13-441-100-701-4



AREA 4

NO VISIBLE EVIDENCE OF ORDNANCE OR EXPLOSIVES. USE FOR LIGHT-TONED POLYGONAL FEATURES CANNOT BE DETERMINED FROM IMAGERY.

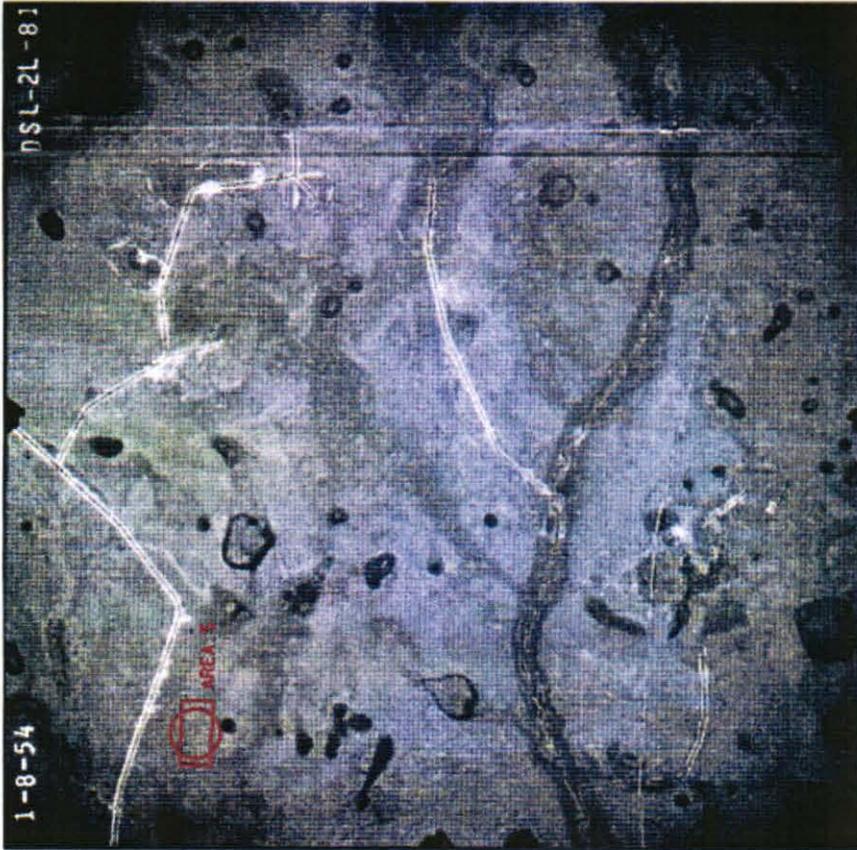


NOT TO SCALE

FIGURE 4-5

USAF AVON PARK RANGE
OKEECHOBEE, POLK, &
HIGHLANDS COUNTIES, FLORIDA
PROJECT #104FLO28701
1954 AERIAL PHOTO

PHOTO: DCL 1955	DATE OF PHOTO: 1954
KT REP: 198 0004	NO ORDNANCE PHOTO INTERPRELON ASSOCIATED



AREA 5

AREA TARGET IS VISIBLE. NO EVIDENCE OF MILITARY USE IS VISIBLE IN TARGET AREA. (No CRATERING).



NOT TO SCALE

FIGURE 4-6

USAF AVON PARK RANGE
OKEECHOBEE, POLK, &
HIGHLANDS COUNTIES, FLORIDA
PROJECT #104FL028701
1954 AERIAL PHOTO

PHOTO DATE: OCT 1955	DATE OF PHOTO: 1954
CU: 451198 2x38	NUMBER OF STRIPS: 278/41 (ON 40044.1)

5.0 Real Estate

5.1 Confirmed DoD Ownership

Between 1942 and 1944, the United States acquired 218,881.42 acres of land in Florida for use by the Army Air Corps as a bombing range. Of this total, 107,054.29 acres were acquired in fee by purchase and condemnation; 114.13 acres by licenses; and 111,713.00 acres by lease. In 1977, the United States acquired an additional 2.46 acres of easement, bringing the total acreage utilized to 218,883.88. The site was partially improved and named the Avon Park Army Air Field and Avon Park Bombing Range, later changed to Avon Park Air Force Range.

The site was utilized by the Army Air Corps during World War II as a training base for B-17 aircraft crews on air-to-ground bombing and gunnery ranges, and was named Avon Park Army Air Field.

In 1956, the site was renamed Avon Park Air Force Range. Improvements included storm drainage, sanitary sewer, electrical and water systems, roads, bridges, runways, fencing, and over 500 buildings, including: chapels; administration; dormitories; barracks; recreation; fire stations; mess halls; residences; and other miscellaneous structures. During the period of ownership and control by the Department of Defense, approximately 800.00 acres were outgranted to and utilized first by the Department of Justice as a Federal Prison (1951 to 1957), and then the state of Florida for a state correctional institution (1957 to 1966).

This real estate information was obtained from the Corps of Engineers, Inventory Project Report, included in Appendix D.

5.2 Potential DoD Ownership

No additional information found.

5.3 Significant Past Ownership other than DoD

No information was obtained during the archives research stating any significant ownership which could have left ordnance at the site.

5.4 Present Ownership

The Department of the Air Force still utilizes 106,112.27 acres of the site. There are five formerly used areas of Avon Park, Florida. These sites are identified as Area 1, Area 2, Area 3, Area 4, and Area 5. The Areas 1 and 2 are located adjacent to Lake Arbuckle in Polk County. Area 3 is located west of the Kissimmee

River in Highlands County. The majority of Area 4 is situated on the east side of the Kissimmee River, with a portion extending slightly onto the west side. Area 4 is located partly in Okeechobee County and partly in Highlands County. Area 5 is located east of the Kissimmee River, in Okeechobee County. Area 1 is located approximately eight miles northeast of the city of Avon Park on state Road 64. Area 2 is located less than a mile south of Area 1. Areas 3, 4, and 5 are located approximately thirteen miles east of Area 1. These areas are identified on Plate 1 in the Report Plates section, and also as Figure 1-1 in the Conclusions and Recommendations volume.

The leases covering 111,713.00 acres were terminated as follows: 30 leaseholds originally acquired by condemnation covering 897.84 acres on 30 June 1946, two leases covering 52,743.14 acres on 20 November 1946, and 110 leases covering 58,072.02 acres on 5 December 1946. Licenses covering 114.13 acres were terminated on 12 July 1963. The terms and conditions of the leases and licenses and the termination notices or if there were any restorations required are unknown as copies of these instruments could not be located. The disposal information was taken from the real estate map and audited file. This portion of the site is mainly undeveloped marsh land.

In 1957, approximately 400 buildings and structures were disposed of utilizing Air Force and Federal Prison personnel. On 12 August 1959, the Air Force reported 304.00 acres excess to the General Services Administration (GSA). By quitclaim deed dated 6 October 1961, GSA conveyed 304.00 acres to a private individual. This portion of the site is mainly undeveloped. In 1963, the Air Force determined that an existing cemetery site on the Avon Park Air Force Range was surplus to its needs.

By quitclaim deed dated 7 July 1965, the Secretary of the Air Force conveyed 3.74 acres to the Fort Kissimmee Cemetery Association. This portion of the site is still utilized as a cemetery.

On 2 December 1966, the Air Force reported 581.60 acres and 104 buildings and structures as excess to GSA and on 2 November 1971, the Air Force withdrew 44.86 acres from excess status and modified the declaration of excess to contain 536.74 acres. Of this 536.74 acres, 126.28 acres together with all improvements were conveyed by quitclaim deed dated 10 October 1969 and correctional quitclaim deed dated 12 February 1970, through the Secretary of Health, Education and Welfare to the state of Florida, for use and benefit of the Avon Park Correctional Institution. The deed retained easements for the benefit of the U.S., restricted the use of the property to educational purposes for a period of 30 years and contained a reverter clause, a recapture clause and a restoration clause. This land is currently utilized as a state correctional institute. The remaining portion of the 536.74 acres

(410.46 acres) was conveyed by quitclaim deed dated 10 February 1975, to the state of Florida, together with all improvements, and including the rights of the U.S. in and to the storm drainage, sanitary sewer, electrical and water systems located on the entire Avon Park Air Force Range. The deed contained no recapture or restoration clauses, but did contain maintenance clauses relating to the utility systems. This portion of the site is part of the correctional facilities.

On 2 August 1983, the Air Force reported 100.00 acres excess to GSA. By quitclaim deed dated 17 September 1986, GSA conveyed this 100.00 acres to a private individual. Most of the above properties were conveyed subject to existing easements.

6.0 Site Inspection

6.1 Site Inspection 10 - 12 January 1996

During the period of 10 - 12 January 1996 personnel from the St. Louis District listed below travelled to Florida to conduct a site visit at the former USAF Avon Park Range.

Gregg Kocher, Health & Safety Specialist
Randy Fraser, Health & Safety Specialist

The visit consisted of an investigation of small arms ranges in and around the cantonment area which is now owned and occupied by the Florida Department of Corrections. In addition, a physical investigation was conducted of the former bombing targets located in Okeechobee County, which are currently owned by private individuals and/or corporations. The bombing targets are located east of the Kissimmee River and the active Avon Park bombing ranges.

6.2 Activities on 10 January 1996

The site inspection team arrived in Orlando at approximately 11:30 AM and proceeded directly to Avon Park Air Force Bombing Range arriving around 2:30 PM. There we met with Al Byrnes, who is the supervisor for base operations. Although most of the sites were further east of Avon Park Bombing Range, we would be near and possibly over active ranges. Clearance was obtained through flight operations.

The remainder of the day was spent on the Formerly Used Defense Site (FUDS) property currently owned and operated by the state of Florida Department of Corrections. The property includes the correction facility, housing (occupied and unoccupied), maintenance buildings, office buildings, dog kennels, gardens, and a small arms range. The land not occupied by structures consists of cultivated farm land, cut and maintained grass areas and thick vegetated swamp land. Much of the old cantonment area of the base seems to be made up of office buildings, base housing (unoccupied), and occupied housing for correction facility staff. The small arms range is currently being utilized by the Department of Corrections. The cultivated fields are and have been used for growing vegetables for the correctional facility. No evidence of ordnance nor explosive residue was found on the facility.

The bridge over Arbuckle Creek, is the suspected location into which numerous bomb fuzes had been dumped. The approximate location of this site is shown on Plate 1 in the Report Plates section. This site was inspected and photographed. The bridge is located approximately 100 feet from the current main entrance to both

the correction facility and the active Avon Park Bombing Range. The creek is approximately 40 feet wide at this location with no obvious solid banks . The water depth is approximately 4 feet (best guess). A fishing camp is located about 75 feet upstream from the bridge, and the bridge is apparently a popular fishing spot. It was impossible to determine if any fuzes remained submerged.

6.3 Activities on 11 January 1996

The second day we were scheduled to investigate the former bombing targets east of the Kissimmee river. Because of the terrain, this site visit was accomplished with the use of a helicopter. We were picked up at the Orlando International Airport by Bulldog Airlines and flown to the Latt Maxey ranch. The Latt Maxcy Corporation now owns the land where several targets were located. We met with Bob Manson who was to accompany us during the site visit. Mr. Manson, in addition to being a sworn county deputy sheriff, is an employee of the Latt Maxcy Corporation and very familiar with the property. Mr. Manson would prove to be a valuable asset during this site visit. We were warned by Mr. Manson of the possibility of encountering poisonous snakes in the area. From there we flew directly to Sebring Airport to refuel. This fuel stop gave us an opportunity to plug in the coordinates in the helicopter's GPS. It was then we discovered that because of faulty equipment all navigation from then on out would be done using our hand held unit, which proved very reliable. We departed Sebring Airport approximately 11:45 AM.

The entire site is primarily flat marshlands with soggy grasslands, palmetto bushes, and palm trees, with numerous small ponds dotting the landscape. It would have been close to impossible to accomplish this site visit using conventional methods. Animal life includes but not limited to cattle, deer, wild boar, alligators, and poisonous snakes. The last of the group limited our on-ground investigation seeing that much of the area was covered with water.

One thing that we did notice about the terrain is that there were numerous patches of palmetto bushes. *These patches were circular and varied in size anywhere from 5 to maybe 30 or 40 feet in diameter.* Dozens of these patches were scattered throughout a relatively small area. From the air these patches looked a great deal like bomb craters. In addition , there were numerous ponds, some full, others with little or no water. It appears that these ponds go through stages depending on the rain fall. Some of the larger dried up ponds resemble bomb targets from the air. This land has gone unchanged for decades and its very likely that aerial photography could interpret many of these features as target sites.

NOTE: Points of Interest are designated as specific areas and correspond with the site visit map. A plan of the site visit area designations is shown on Figure 6-1. Site visit photographs are presented in Appendix I.

Areas #14, #13, #15, and #12 in this order were the first sites to be investigated. Area #13 was identified in documentation as the location of XIX, a Position Firing Course, while #'s 14 and 15 were identified through aerial photographs as having ground marks that may be an indication of ordnance impacts. The three sites were surveyed from the air due to conditions being too wet and soft to land the helicopter. Several patches of palmetto brush were piled throughout the area designated as site #13. We were informed by Mr. Manson that this site had been cleared using heavy equipment, the purpose of this clearing was not known. Area #12 also had a large dried up pond which can be seen in photo #20. No evidence of ordnance nor explosives were found at these sites.

Area #11, the skip bombing target was next to be inspected. We flew over the site which was completely covered with water. Nothing was observed that would indicate the presence of a target. The site was a rectangular shaped clearing approximately 1 mile long and maybe a ¼ mile wide. We were able to find hard ground nearby to land. We conducted a ground inspection of what we could. The entire site was covered with approximately 4 - 6 inches of water with grass being about knee high. We were able to get nearly 300 yards into the site before the water became too deep to continue. We were concerned with snakes; therefore, discontinued our ground inspection. Of what we were able to see, no signs of ordnance nor former ordnance related activities were found. Mr. Manson told us of a pile of old bombs nearby. We returned to the air to search out this pile. We located the cache approximately 1 mile NW of the Land Skip Bombing Target. We landed on an unimproved road located nearby. We inspected the debris and determined that no live explosives or ordnance was present. The pile consisted of numerous 100-pound practice bombs, mostly M38A2's. A few M85's, concrete practice bombs were also present. The location of this debris pile is N 27° 35' 11.8", W 81° 05' 39.8". The condition of the bombs were as such that they most likely had been recovered from the skip bombing target. Because of the low level of drops, bombs usually retained their original shape, unlike bombs dropped from a high altitude, which normally are smashed upon impact.

The next site was the "Area" Practice Bombing Target, Area #8 which was easy to detect from the air. An aerial recon was done in addition to a ground inspection. The terrain was dry and we were able to land. The target outline was very noticeable and could easily be followed on the ground. The outline had originally been done with some sort of limestone material, which has seemed to have caused a change in the vegetation which grows there. Located near the center of the target (N 27° 36' 23", W 81° 03' 19.9") was the remains of a scrap pile. We did find a few practice bomb (M38A2) components, small pieces of tail fins and body parts. The area seemed to have been cleaned up with the small insignificant debris being left behind. There were other pieces of metal debris present which obviously, were not bomb components. No additional evidence was discovered anywhere on the target site.

From there we proceeded to Practice Bombing Target XIII, area #6. We were unable to land in the vicinity of the target so the investigation was completed from the air. No evidence of the target could be located. We found three concrete footings located at N 27° 37' 11.8", W 81° 00' 14.8". There was most likely a fourth footing in the thick brush that we couldn't see. These appear to be the base of what I believe to be the remains of an observation tower. The area adjacent to this site had at one time been cultivated and turned into tomato fields. These fields are no longer used for growing tomatoes.

The next site to inspected was Area #5 which per the INPR, was the Bombing/Gunnery Range. A ground inspection was conducted on site. It was relatively dry with knee high vegetation. We were not able to locate any ground disturbances or debris that would indicate any type of ordnance related activities took place.

We then went to Areas #9 and #10. These sites were considered points of interest due to the unusual ground marks that appeared on the aerial photographs. Observation was from the air, again the land was too wet to land. Nothing out of the ordinary was located in these areas.

From there we went to Areas #4 and #3. Area #4 on the quad sheet shows the target in the southern portion of a figure-8 shaped low spot. We located this terrain feature and it turned out to be a large marshy lowland that we would not be able to investigate from the ground. No signs of a bombing target remained. In area #3 we found what appeared to be a series of rectangular tracts of land. Each tract was bordered by roads on all sides and consisted of swampy wetlands. There was nothing present that would indicate this site was used as a target. Mr. Manson informed us that these tracts of land were sold to individuals for the purpose of hunting. Each lot was individually owned and because of this ownership hunting was allowed on any of the other tracts. Sort of a time-share for hunters.

Area #2 designated as Position Firing Course XII was also covered with marshy wetlands which made it impossible to land. We flew over the site but could see nothing that would indicate any type of firing course, range or target. There were a couple low areas that if it had been raining would probably become ponds. Again when these ponds are dry, or nearly dry they do take on the appearance of targets.

Area #1 designated as target XV, Practice Bombing Target. We set down right at the coordinates given as the target site and conducted a thorough inspection of the site. This area had been cultivated in the past and is presently used for grazing cattle. Because of the extensive amount of grazing, the ground inspection was easy to complete. No evidence of ordnance nor explosives were found. This land was not owned by the Latt Maxcy Corporation.

Area #16, XIV, Practice Bombing Target like many of the others was very marshy. Inspection therefore was conducted from the air. No signs of a target were present.

Areas #17 and #18, were designated as points of interest due to ground marks located in aerial photos. No signs of ordnance and explosives, nor ordnance related activities were discovered.

After completing the target inspections the site team returned to the Maxey ranch to drop off Mr. Manson. From there we proceeded to the Lake Kissimmee Target.

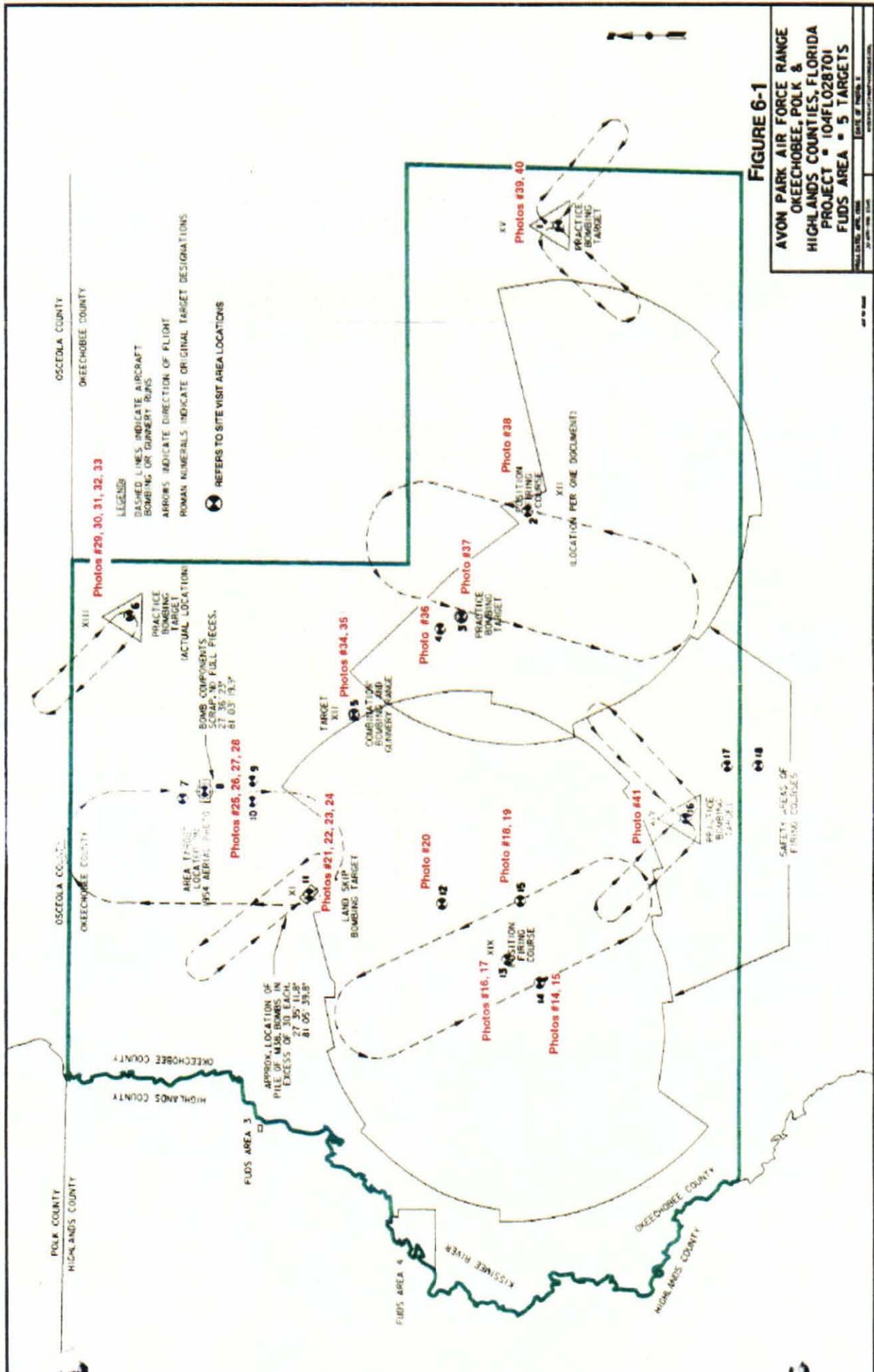
We flew over the lake but could see no remains of any target or any type of platform. Because of water color, subsurface visibility was poor, only about 2 feet. We then flew over Area #20 which is directly adjacent to the lake, another possible location for this target. This was marshy lowlands that could very well have been under water and part of the lake depending on the amount of rain in the area. Again no remains of any type of platform nor any other man-made structures were found.

From there we returned to the Orlando Airport.

6.3 Summary of Site Visit Findings

Aside from the bombing target located at area #8, no noticeable targets were found. Area #12 had a large dried up pond in the vicinity. The skip bombing range, area #11 was a cleared out area maybe a mile long and nearly a quarter of a mile wide. In Area #4, the target was centered in the southern portion of a figure 8 lowland (dried up pond). Another way to look at it is that these ponds, at one time, may have been the actual targets. All of these features were very noticeable from the air.

Besides the rusty practice bomb bodies (large pile at N 27° 35' 11.8", W 81° 05' 39.8" and debris in Area #8 N 27° 36' 23", W 81° 03' 19.9"), no other evidence of ordnance nor explosives was found.



POLK COUNTY
 HIGHLANDS COUNTY
 OKEECHOBEE COUNTY
 OSCEOLA COUNTY

Photos #29, 30, 31, 32, 33

LEGEND

DASHED LINES INDICATE AIRCRAFT BOMBING OR GUNNERY RAIS

ARROWS INDICATE DIRECTION OF FLIGHT

ROMAN NUMERALS INDICATE ORIGINAL TARGET DESIGNATIONS

☉ REFERS TO SITE VISIT AREA LOCATIONS

ACTUAL LOCATION

PRACTICE BOMBING TARGET

LAND SKIP BOMBING TARGET

COMBINATION BOMBING AND GUNNERY RANGE

POSITION FIRING COURSE

PRACTICE BOMBING TARGET

PRACTICE BOMBING TARGET

LOCATION PER ONE DOCUMENT

SAFETY AREAS OF FIRING COURSES

Photos #25, 26, 27, 28

Photos #21, 22, 23, 24

Photos #16, 17

Photos #14, 15

Photos #18, 19

Photo #20

Photo #36

Photo #37

Photo #38

Photos #39, 40

Photo #41

APPROX. LOCATION OF PILE OF M36 BOMBS IN EXCESS OF 30 EACH
 27 35' 11.8"
 81 05' 39.8"

AREA 17-HOLE LOCATED IN 954 AERIAL PHOTO
 27 35' 23"
 81 05' 19.7"

BOMB COMPONENTS SCRAP NO. FULL PIECES
 27 35' 23"
 81 05' 19.7"

FIGURE 6-1

AVON PARK AIR FORCE RANGE
OKEECHOBEE, POLK & HIGHLANDS COUNTIES, FLORIDA
PROJECT # 104FL028701
FLDS AREA # 5 TARGETS

DATE OF PHOTO 1
 DATE OF PHOTO 2
 DATE OF PHOTO 3
 DATE OF PHOTO 4
 DATE OF PHOTO 5

0 1 MILE

7.0 Evaluation of Ordnance Presence

Historical research from various sources indicates that the U. S. military acquired the entire Avon Park Army Air Field and Bombing Range, some 218,000 acres, beginning in 1942. The site was comprised of two distinct portions of land. The first was approximately 107,000 acres west of the Kissimmee River that the government purchased. The remaining 111,000 acres, east of the Kissimmee River, were leased tracts that the government returned to the control of the owners in 1946. During World War II both portions were used for aerial bombing practice.

7.1 Description of FUDS Tracts

Five tracts of land which were once part of the Avon Park facility have been declared excess and are now considered Formerly Used Defense Site (FUDS) property. These tracts are listed below and shown on Plate 1.

7.1.1 FUDS Area 1

Area 1 was a highly developed part of the operations area of the former air field. Improvements included paved roadways, numerous buildings, and appurtenant support structures (sewers, water system, etc.). Historical maps indicate that there was a skeet range located in the northern part of this area. Additionally, the extreme southern tip of this tract was partially covered by a safety fan from another small arms firing range. The map does not show any other range firing points or targets in Area 1.

Area 1 is also the location where 200, M103 bomb fuzes were dumped into Arbuckle Creek from the bridge at the entrance gate in 1946. Two children were killed in Avon Park that year when they were playing with fuzes that had been recovered from the creek by fishermen. The Arbuckle Creek bridge site is shown on Plates 1 and 3; also, on Figures 4-1 and 4-3 of this volume.

Area 1 was included in an ordnance clearance operation that was carried out in November 1949. At that time the land was declared safe for any use. Details of this clearance are included in Section 4.1.3.4 of this report.

The St. Louis District site inspection team visited these various locations in FUDS Area #1 in January 1996 and found no evidence of any remaining ordnance or explosives. The St. Louis District team had interviewed Mr. Al Byrnes, Range Operations, and Mr. Roger Grebing, Environmental Engineer, both of the active Avon Park Air Force Range. Neither one had ever heard of any ordnance nor explosives being found in this area.

7.1.2 FUDS Area 2

Area 2 is an undeveloped forested tract that does not appear to have ever been improved. There are no roads through this area and it is generally inaccessible.

7.1.3 FUDS Area 3

Area 3 is the site of a small cemetery within the boundaries of the still active Avon Park Air Force Base. The cemetery was there before the time of government use and there were no military operations carried out there.

7.1.4 FUDS Area 4

Area 4 is an undeveloped tract of land along the Kissimmee River which is also a part of the larger Area 5. An ordnance investigation, undertaken in September 1958, declared the land clear.

7.1.5 FUDS Area 5

Area 5 is the largest tract of the FUDS properties comprising close to 111,000 acres. Area 5 contained six practice bombing targets (PBT) and two position firing courses (PFC). Locations of these ranges are listed below and are shown on Plate 2.

DESCRIPTION	LATITUDE	LONGITUDE	
	DEG MIN SEC	DEG MIN SEC	
PRACTICE BOMBING TARGETS (PBT)			
XI Land Skip Bombing Target ..	27 34 40	..... 81 05 10	
XII Bombing/Gunnery Range ...	27 33 57	..... 81 02 07	
XIII PBT North (per map)	27 37 20	..... 81 00 20	Actual Location
XIII PBT South (per document)	27 32 30	..... 81 00 20	
XIV PBT	27 28 50	..... 81 03 50	
XV PBT	27 30 50	..... 80 53 30	
Area PBT (per document)	27 36 50	..... 81 03 20	
Area PBT (per air photo)	27 36 23	..... 81 03 23	Actual Location
POSITION FIRING COURSES (PFC)			
XII PFC	27 31 20	..... 80 58 25	
XIX PFC	27 31 55	..... 81 06 15	

Interviews with Okeechobee County sheriffs and owners, who are familiar with this site, indicated that no ordnance nor explosives, other than the bomb scrap piles have ever been found there since the time of military use.

Aerial photography of FUDS Area #5 shows only one bomb target outline still existing. This was the target known as the Area Bombing Target. The location on the air photo is different than that specified in the historical documents. No other target locations were visible on any of the air photos; however, there are a few ground disturbances in the vicinity of the various sites.

The St. Louis District, Corps of Engineers, made an inspection of this area in January 1996 and located the bomb target areas with a global positioning system unit. Besides checking the bomb target locations, the team also inspected the ground marks identified on the aerial photography. The team was able to find two remaining features of the bombing targets. The first was the outline of the Area Bomb Target and the other was some of the observation tower supports near Target XIII. The on-site inspection revealed that the ground disturbances observed on the aerial photography were natural features.

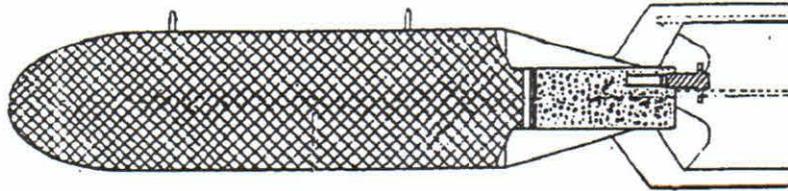
The site inspection team also discovered ordnance debris near two of target center locations. Fragments found were from M38 practice bombs. Other metal items were found, but were too corroded to make positive identification. No live ordnance nor explosives were discovered.

8.0 Technical Data of Ordnance and Explosives

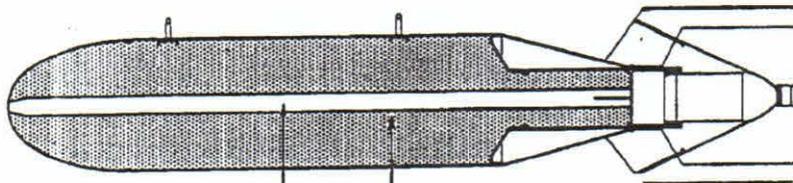
Data sheets are provided in this section for ordnance items which could be encountered on this site. Possible existence has been identified through review of historical documents, air photo interpretation, or a personal site visit by the ASR inspection team.

<u>Identification</u>	<u>Description</u>	<u>Page</u>
M38A2	100-pound practice bomb	8-2
M103	Fuze	8-3
M101A2	Fuze	8-4

BOMB, PRACTICE, 100-POUND, M38A2



With M3 spotting charge



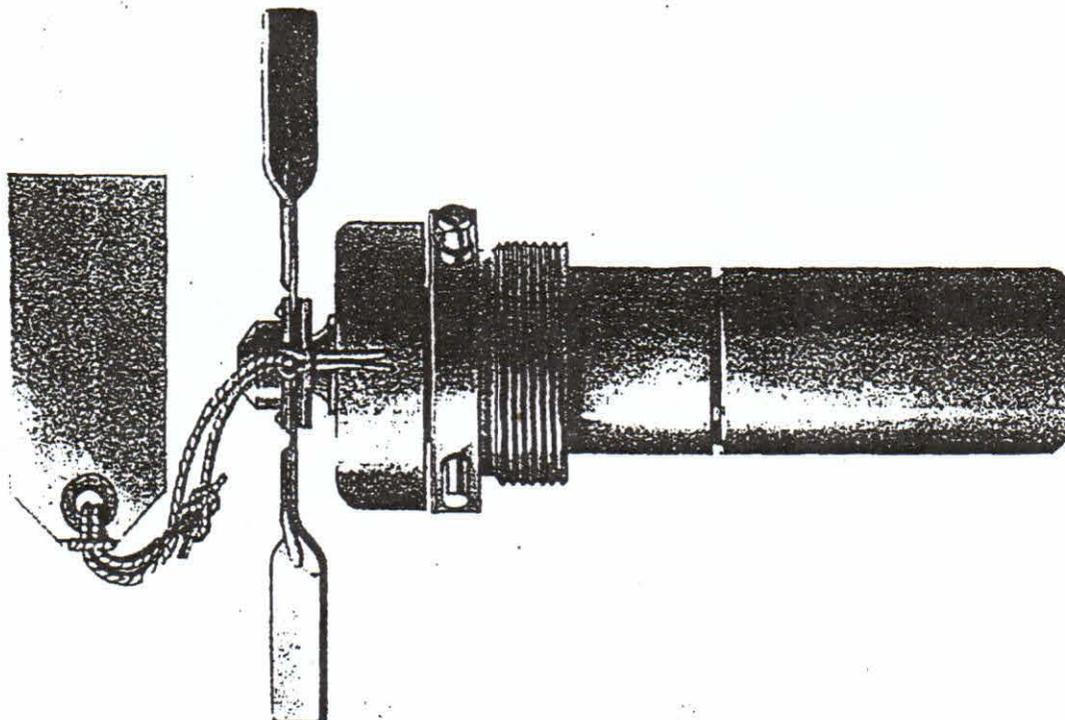
WOODEN
SUPPORT
ROD SAND
FILLING
With M4 spotting charge

Description: This bomb simulates a General Purpose (GP) bomb of the same size. The bomb is constructed of light sheet metal with the box type fins welded to the bomb body. The spotting charge is assembled in a sleeve at the base of the bomb, within the fin box. Authorized spotting charges are the M1A1, M3, and M4. When using the M4 spotting charge a wooden support rod is installed in the bomb. The bombs are sand filled.

Over-all Length	47.5 inches
Diameter	8.13 inches
Weight empty	15.7 pounds
Weight sand loaded & spotting charge	100 pounds

Reference	OP 1664, Feb 54
	Complete Round Chart #5981,
	Oct 44

FUZE, BOMB, NOSE, M103 (AN-M103)

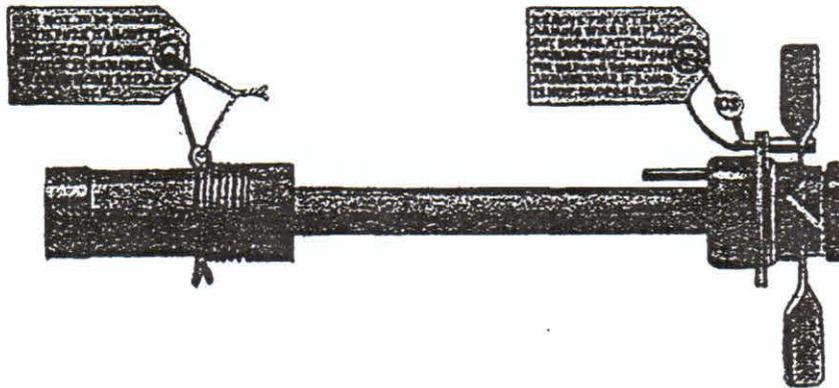


Description: Fuze, Bomb, M103 is an arming vane type with mechanical delay in arming. It is used in all General Purpose (GP) bombs, the M-series demolition bombs which preceded the GP series, the 4,000-pound Light Case bomb, and in the 650-pound depth bomb. It is used for high-altitude land bombardment, and also against water targets. Its action on impact is selective, instantaneous or 0.1 second delay.

Over-all length: 7.0 inches
Diameter: 2.7 inches
Weight 3.7 pounds

Reference: TM 9-1904, Ammunition Inspection Guide,
Mar. 1944

FUZE, BOMB, TAIL AN-M101A2



Description: Fuze, Bomb, Tail, AN-M101A2 is an arming vane type tail fuze which arms after 158 revolutions of the arming vane and acts to detonate the bomb upon impact with a delay determined by the primer-detonator assembled. As issued, either Primer-detonator, M14, 0.25-second delay, or nondelay, is assembled to the fuze. These may be replaced in the field by an M14 Primer-detonator of 0.1-second delay, 0.01-second delay, or 0.24-second delay. It is authorized for use in General Purpose, Semi-Armor Piercing, and chemical bombs of 500 to 600 pounds.

Over-all length: 12.6 inches
Diameter: 1.5 inches
Weight 2.9 pounds

Reference: TM 9-1980, Bombs for Aircraft, Dec. 1950

9.0 Evaluation of Other Site Information

No additional information regarding any areas of potential environmental concern for this site was found during the archives search process.