US Army Corps
of Engineers®
Rock Island District

Defense Environmental Restoration Program
for
Formerly Used Defense Sites

Ordnance and Explosives Archives Search Report

For the former

Naval Auxiliary Landing Field

Charlestown, Rhode Island

Project Number D01RI000804

27 April 1999

FINAL

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DEPARTMENT OF THE ARMY
ROCK ISLAND DISTRICT, CORPS OF ENGINEERS
CLOCK TOWER BUILDING - P.O. BOX 2004
ROCK ISLAND, ILLINOIS 61204-2004

REPLY TO
ATTENTION OF

http://www.mvr.usace.army.mil

CEMVR-EC-DO

2 June 2009

MEMORANDUM FOR RECORD

SUBJECT: Missing Technical Advisory Group (TAG) Package Transmittal Letter for Naval Auxiliary Landing Field, Project Number D01RI000804

1. A review of project records present at the U.S. Army Corps of Engineers, Rock Island District and Huntsville Center, revealed that the TAG package for the subject site exists. However, the transmittal letter from Huntsville Center was not located.

2. The TAG package was examined and is considered complete. Therefore, the subject report has been finalized without the transmittal letter, and the TAG review date, 27 April 1999, was used as the date of the final report.

Christopher J. Churney
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DISCLAIMER

The purpose of this archives search report is to present the findings of research undertaken for this specific Formerly Used Defense Site (FUDS) property. All of the factual information found during the research is included in this "Findings" volume. Reference may be made in this volume to a separate "Conclusions and Recommendations" volume. In some instances, the Conclusions and Recommendations volume contained recommendations of individuals performing the analysis that may contain inferences or conjecture not supported in subsequent reviews. Because these statements are not always factual in nature, the US Army Corps of Engineers has determined the Conclusions and Recommendations volumes, where they exist, do not necessarily represent the opinion of the USACE and are not available for public release. The Risk Assessment Code (RAC) form that was contained in the Conclusions and Recommendations volume has been inserted in a separate Appendix of this finalized report.

DEFENSE ENVIRONMENTAL RESTORATION PROGRAM
for
FORMERLY USED DEFENSE SITES

FINDINGS

ORDNANCE AND EXPLOSIVES ARCHIVES SEARCH REPORT

For

NAVAL AUXILIARY LANDING FIELD
CHARLESTOWN, RHODE ISLAND

PROJECT NUMBER D01RI000804

27 APRIL 1999

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ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR
NAVAL AUXILIARY LANDING FIELD
CHARLESTOWN, RHODE ISLAND
PROJECT NUMBER D01RI000804

ACKNOWLEDGMENTS

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ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR
NAVAL AUXILIARY LANDING FIELD
CHARLESTOWN, RHODE ISLAND
PROJECT NUMBER D0IR00804

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ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR
NAVAL AUXILARY LANDING FIELD
CHARLESTOWN, RHODE ISLAND
PROJECT NUMBER D01RI000804

1. INTRODUCTION

a. Subject and Purpose

(1) This report presents the findings of an historical records search and site inspection for ordnance and explosives (OE) presence located at the Naval Auxiliary Landing Field (NALF), Charlestown, Rhode Island (see plate 1 for general location map). The investigation was performed under the authority of the Defense Environmental Restoration Program for Formerly Used Defense Sites (DERP-FUDS).

(2) The purpose of this investigation was to characterize the site for potential OE presence, to include conventional ammunition and chemical warfare material (CWM). Experienced ordnance experts through complete evaluation of historical records, interviews and on-site visual inspection results conducted this investigation.

b. Scope

(1) This investigation focused on approximately 631.3 acres of property that was used by the War Department. The site was used during World War II (1943 to 1945) as a naval auxiliary landing field for the Quonset Point Naval Air Station (NAS), Rhode Island. At the end of World War II, the site remained in operation, becoming an alternate landing site for Quonset Point NAS, until its closure in 1970.

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

(3) For the purpose of this report, OE presence consists of live ammunition, live ammunition components, CWM or explosives which have been lost, abandoned, discarded, buried, fired or thrown from demolition pits or burning pads. These items were manufactured, purchased, stored, used, and/or disposed of by the War Department or the Department of Defense (DOD). Such

ammunition or ammunition components are no longer held accountable or under record control of any Department of Defense organization or activity.

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

2. PREVIOUS INVESTIGATIONS

a. 1996 Preliminary Assessment

(1) The US Army Corps of Engineers, New England District, conducted a Preliminary Assessment of the Naval Auxiliary Landing Field under the DERP-FUDS. At that time, the Findings and Determination of Eligibility (FDE), dated 1 February 1988, concluded that the Naval Auxiliary Landing Field located in Charlestown, Washington County, Rhode Island had been used by the War Department (see document E-12).

(2) The FDE further concluded that there were eligible categories under the DERP-FUDS program, since the site was used by the Department of the Navy and identified as an Auxiliary Landing Field. An Ordnance and Explosives (OE) project was recommended, and DERP-FUDS project number DO1RI000804, the principal subject of this report, was assigned (see document E-12 and table 2-1).

TABLE 2-1
DERP-FUDS PRELIMINARY ASSESSMENT PROJECTS

Project Number	DERP Category	Present Phase	Comments	Location
DO1RI000801	HTRW	RI/FS	On-going Study	See Plate 1 Areas
DO1RI000802	BD/DR	Complete	Building Removal	See Document E-8
DO1RI000803	CON/HTRW	Complete	Fuel Tank Removal	See Document E-8
DO1RI000804	OE	SI	Ordnance or Explosives Presence	Entire site 631.3 Acres (See Plate 2)

b. Other Investigations

No other investigations pertinent to this site were located.

3. SITE DESCRIPTION

a. Existing Land Usage

(1) The Naval Auxiliary Landing Field is located in Washington County, Charlestown, Rhode Island (see plate 1). Total site acreage consisted of approximately 631.3 of flat coastal plain, which was predominately cleared of vegetation for buildings, runways, and other paved surfaces. Current land usage is described in table 3-1.

TABLE 3-1
CURRENT LAND USAGE

Area	Former Usage	Present Owners	Current Usage	ACREAGE	Comments
A	Ammunition Administration Offices	City of Charlestown, Rhode Island	Park and Recreation Area	1	see plate 3
B-1	Machine-gun Range (Shoot-In-Butt)	Department of the Interior: US Fish & Wildlife Service	Wildlife Refuge	2	see plate 3
B-2	Fill Area	Department of The Interior US Fish & Wildlife Service	Wildlife Refuge	2	see plate 3
C	High Explosive Storage	Department of the Interior US Fish & Wildlife Service	Wildlife Refuge	2.1	see plate 3
D	Small Arms, Detonator, And Fuse Magazines	Department of the Interior US Fish & Wildlife Service	Wildlife Refuge	1.3	see plate 3
E	Pyrotechnic And Inert Magazines	Department of the Interior US Fish & Wildlife Service	Wildlife Refuge	1	see plate 3
F	Skeet and Trap Ranges	Department of the Interior US Fish & Wildlife Service	Wildlife Refuge	6	see plate 3
G	Dump Site	City of Charlestown, RI	Landfill and Dump Site	6	see plate 3
H	Hunter Island Dump Site	Department of the Interior US Fish & Wildlife	Wildlife Refuge	3	see plate 3

TABLE 3-1 Cont. CURRENT LAND USAGE					
Area	Former Usage	Present Owners	Current Usage	ACREAGE	Comments
I	Pistol Range	Department of The Interior US Fish & Wildlife	Wildlife Refuge	2	see plate 3
J	Remaining Land	Department of the Interior US Fish & Wildlife Service & City of Charlestown, RI	Wildlife Refuge Charlestown Recreational Development	604.9	see plate 3
* Indicates approximate acreage			TOTAL	631.3	

(2) Today, the project lands are owned by the Department of the Interior, US Fish and Wildlife Service who manage the Ninigret Wildlife Refuge, and the City of Charlestown, Rhode Island who developed a large recreational complex in the area.

b. Climatic Data

(1) Rhode Island is on the south coast of New England and is in the portion of the country strongly influenced by the prevailing westerly winds. Winters are cold and summers are warm. Both the start and the end of the warm period are influenced by the moderating effect of the Atlantic Ocean. In winter the ground is frequently, but not continuously, covered with snow.

(2) In winter, the average temperature is 30 degrees Fahrenheit and the average daily minimum temperature is 20 degrees. In summer, the average temperature is 70 degrees, and the average daily maximum temperature is 80 degrees. Even with the maritime influence, however, extreme low and high temperatures are often noted. The record extremes recorded at the Naval Auxiliary Landing Field are -8 degrees Fahrenheit and 100 degrees Fahrenheit.

(3) Thunderstorms occur approximately 21 days each year, and most frequently during the summer. The average amount of precipitation for this region is 22 inches. During the months of April through September about 45 percent of this will normally be realized in the form of rain showers.

(4) Seasonal snowfall averages 36 inches. The greatest snow depth ever recorded at one time was 30 inches. On average, 19 days have at least 1 inch of snow on the ground (see references B-23 and B-26).

c. Topography

The former Naval Auxiliary Landing Field is located along the south-central coastal area of Rhode Island. The site occupies essentially all of a small peninsula reaching into Ninigret Pond, formerly called Charlestown Pond. This is the largest of several barrier beach ponds along the coast, protected from Block Island Sound by a narrow strip of barrier beach. The site is located about one-mile inland from the sound, with the elevation reported to be anywhere from 25 to 32 feet above sea level.

d. Geology and Soils

(1) Glacial ice sheets several thousand feet thick covered all of what is now Rhode Island during the Pleistocene epoch, which began 2.5 to 3 million years ago. As the glacier moved south, it scoured and picked up older glacial deposits, bedrock, and soil. The final deposition of glacial material occurred during the Wisconsin glaciation 10,000 to 12,000 years ago. As the glacier melted and receded, it deposited unconsolidated material consisting mainly of unsorted glacial till and beds of meltwater-sorted sand, gravel and silt. The meltwater and eroded material it carried caused a landscape of kames, eskers, terraces, and fluvial deposits.

(2) Glacial deposits found in the Ninigret Pond area are comprised of three types, these being Outwash Deposits, Till Deposits, and Charlestown and Block Island Moraine. The area of land now owned by the City of Charlestown contains approximately 50 percent of Outwash and 50 percent of Till Deposits. The Ninigret Wildlife Refuge is almost totally formed with Outwash deposits, except two small areas of Till Deposits close to Coon Cove, and across Ninigret Pond.

(3) The former Naval Auxiliary Landing Field contains 10 different soil types. The majority of acreage is made up of Bridgehampton silt loam, with a 0 to 3 percent slope, and Urban Land, which include the landing fields, paved roads, parking lots and taxiway and generally have a 5 percent slope. The remaining types, in much smaller percentages, include: Houghton, Pawcutuck, Beaches, Narragansett, Hinckley, Enfield, Tisbury and Cut and Fill (see references B-24, B-49, and B-50). A description of soil types may be found in document F-10.

e. Hydrology

(1) The project area, which lies southwest of the Pawcatuck River drainage basin and south of the Charlestown Moraine, has no natural surficial drainage brooks or streams. However, wetlands and freshwater ponds do exist on the project property and are probably fed, in part, by underground freshwater springs. Ground water in the project area is generally located at approximately six foot, and is the primary source of water for the cities usage. Almost all surface drainage is directional towards Foster Cove to the west, or into Ninigret Pond which surrounds the peninsula (see reference B-24).

(2) Tides do not have a significant effect on Ninigret Pond, which borders the landing field's south side. A line of breakwater beaches separates and protects the pond from the Atlantic Ocean (Block Island Sound). Limited tidal flows are realized at the Charlestown Breachway (see map L-4, and photograph K-5).

f. Natural Resources

(1) The landing field site is an area inhabited by a variety of both state and federal endangered and threatened species. At least 20 state-endangered species of plants grow on the property, and a number of endangered birds occasionally frequent, or even nest on the property. Several species remain year around, however others, primarily migratory waterfowl, appear in the spring and fall using the Middle Atlantic Flyway.

(2) The Rhode Island Division of Fisheries and Wildlife provided a list of endangered species for both the Federal Government and the State of Rhode Island (see document E-2). Table 3-2 summarizes the lists to include just those species that inhabit the former site.

g. Historical/Cultural Resources

(1) The Public Archaeology Laboratory, Inc. (PAL, Inc.) published a Phase 1a Documentation Study or Reconnaissance Archaeological Survey on the Naval Auxiliary Landing Field at Charlestown, Rhode Island, in February 1992. The study furnishes an in-depth historical overview of the Charlestown area, drawing information from numerous private collections, state site files, organizations, and other investigative sources (see reference B-50).

(2) Native American burial sites are known to have existed on the property. An intact burial ground is known to exist under the north-south runway, and there is a potential for additional undiscovered sites to be located near sites and sensitivity testing zones which were formerly reported (see references B-47 and B-50). Natural and Cultural resources are summarized in table 3-2.

(3) As a result of the Phase 1a archaeological survey of the NALF project area, four testing zones were identified. Previous archaeological research (RIHPC 1974, Senulis Survey) located five prehistoric sites on the project property. One of these sites, the Foster Cove Site, has been placed on the National Register of Historic Places (see references B-47 and B-50).

TABLE 3-2
NATURAL and CULTURAL RESOURCES

Resource Classification	Type	Status
Wildlife (vertebrate)	Bald eagle	Endangered (Federal)
	Peregrine falcon	Endangered (Federal)
	Piping plover	Endangered (Federal)
	Roseate tern	Endangered (Federal)
	Northern harrier	Endangered (State)
	Black-throated blue warbler	Endangered (State)
	Yellow-breasted chat	Endangered (State)
Wildlife (invertebrate)	American burying beetle	Endangered (Federal)
	Barrens bluet damselfly	Endangered (State)
	Banded bog skimmer Dragonfly	Endangered (State)
	Regal fritillary Butterfly	Endangered (State)
Vegetation	Small-whorled pogonia	Endangered (Federal)

TABLE 3-2 (Cont.) NATURAL and CULTURAL RESOURCES		
Resource Classification	Type	Status
Vegetation (Cont.)	Sandplain gerardia	Endangered (Federal)
Historical		None Identified
Archeological/Cultural	Late Woodland Indian Camp Site By Foster Cove	Placed on the National Register
	Native American Intact Burial Site Under N-S Runway	Considered sensitive Coordinate intrusive Activities with SHPO
Archeological/Cultural (Cont.)	Native American Chipping debris & tool fragments	Considered sensitive Coordinate intrusive Activities with SHPO
	Native American Chipping debris Listed as Zone 4	Small island and a peninsula east of Ninigret Pond
NOTE 1: A complete list of State endangered vegetation species that are located on site are listed in document E-6.		
NOTE 2: Maps of Archeological/Cultural locations are listed in documents E-7 and E-10.		

4. HISTORICAL ORDNANCE PRESENCE

a. Chronological Site Summary

(1) Except where otherwise noted, the following information was extracted from the History of U.S. Naval Air Station, Quonset Point, Rhode Island, circa 1950's, (see reference B-82).

(a) The Federal Government's control of the area began between April and September 1942 when the Department of the Navy acquired by condemnation 631.3 acres of land near Charlestown, Rhode Island.

(b) On 6 September 1942, the Secretary of the Navy approved the construction of auxiliary landing fields under the control of Quonset Point. The construction of the first of three runways was begun at NALF in the late spring of 1942, even before land acquisition formalities were completed.

(c) Initial runway, billeting, administrative, messing, roads and grounds, general troop/station support, and ordnance storage facilities construction on the base was accomplished to support a heavy bomber squadron (VB) consisting of 24 torpedo bomber aircraft (see reference B-82 and maps L-7 and L-8).

(d) General construction at the facility continued during WWII to accommodate an increased squadron support mission. On 29 December 1943, the station support complement was increased to accommodate 45 carrier aircraft and 8 scouting planes. On 26 January 1944 the station support complement was increased to 120 carrier aircraft and 20 scouting planes. In late 1944, the station support complement increased to 161 fighter planes (132 being night fighters), 19 reconnaissance, weather, photography, or general utility aircraft, and 41 scouting planes (see reference B-82 and document E-3).

(e) Ordnance related structures consisted of a ready magazine, inert storage magazine, pyrotechnic magazine, small arms magazine, fuze and detonator magazine, high explosive magazine, a machine gun range (shoot-in-butt), and both a skeet and a trap range. The skeet range consisted of a range house, 1 low-skeet house, one high-skeet house, a control house (used by both ranges), and a tower and a storage building (used by both ranges). The Trap range consisted of a range house, 1 low-skeet house, a control house (used by both ranges), and a tower (shared by both ranges) (see maps L-1, L-7, documents E-3 and F-2).

(f) Pilot training for the projected station complement of Charleston was scheduled to commence on 1 January 1943. However, due to construction delays, the base was not ready for usable completion until 15 May 1943. The first fighter bomber contingent arrived at Charleston on 1 June 1943 to commence training with TBF Avenger Aircraft (see document F-13).

(g) Following the period of training commencement, Quonset sent various composite squadrons, fighter squadrons, torpedo and bombing squadrons, and a night carrier air group (fighter and torpedo squadron) to Charleston for training. In February 1944, Charleston was selected as the principal night fighter base on the Atlantic Coast. Following this action, night fighter squadrons were formed and solely night fighter squadron units trained at Charlestown until November 1944. In November 1944, NACTULANT (Night Attack and Combat Training Unit-Atlantic) was formed, which required individual fighter pilot training versus fighter squadron training. From this time until the end of WWII, NACULANT pilots were trained at Charleston (see document F-13).

(h) Following WWII, Charleston remained open to support two Carrier Air Groups, which rotated between the station and carriers at sea. Also, the Secretary of the Navy established a Navy Air Navigation Electronic Project at Charleston.

(i) On 31 March 1947, the Carrier Air Group units were transferred to Quonset Point, and air operations were maintained only from 0700 to 1800 hours.

(j) On 31 May 1950, the facility was disestablished. Although redesignated an Outlying Field for Quonset NAS, only a crash crew and minimum facilities were provided there (see document F-12).

(k) On 26 June 1951, Charleston was established as an auxiliary landing field to NAS Quonset for fleet carrier operations, and 1952 facility maps display a proposed jet fueling area and a stabilized landing area following this establishment (see document F-15 and maps L-1 and L-2).

(l) Although squadrons utilizing the station during this time period could not be identified, the Rhode Island Air National Guard stored items of OE in some of the ammunition storage facilities in 1953 (see document E-5).

b. Ordnance Related Records Review

(1) Research efforts for the former Naval Auxiliary Landing Field began with a thorough review of all reports, historical documents, and reference material gathered during the archival search. During this review, an effort was made to focus on areas of confirmed and/or potential OE presence. While the general history of air operations at NALF is well documented, few documents relating to the storage and use of ammunition at NALF were found. No historical documents were found indicating the expenditure of ammunition on the installation property itself, except for the use of small arms ammunition and 20mm cannon ammunition at the machine gun (shoot in butt) range.

(2) Several documents and photographs were found which would suggest or confirm an ordnance association with the Naval Auxiliary Landing Field during establishment and operation.

(a) A letter from the Navy Department, dated 9 October 1942, reveals plans for construction of machine gun butts to be built at the new auxiliary airfields (see document F-1).

(b) A letter from the US Naval Air Station, Quonset Point, RI, dated 1 May 1943, discusses anti-aircraft defense plans for the outlying fields (see document F-2).

(c) Two maps from the Public Works Department, Naval Auxiliary Air Facility, Charlestown, dated 30 June 1943, show proposed construction, and includes a 25 & 50 yard pistol range near the southwest end of the NE-SW runway (see map L-7 and L-8).

(d) A photograph dated 12 October 1943, shows the newly constructed ammunition storage magazines and a machine gun range located on the south side of the north-south (17-35) runway (see document K-2).

(e) A bimonthly report on facilities, dated 1 March 1945, gives the total of aircraft and personnel assigned to NAAF Charlestown and furnishes location, elevation, and runway information (see document E-3).

(f) An aerial photograph, dated 18 October 1945, displays the newly constructed waste treatment facility and nearby dump site, and Hunter Island (at the end of north-south runway 30) prior to both being used as for aircraft burial and dumping sites.

(g) A Summary Report on Facilities with Ammunition Storage Capabilities, dated 4 October 1946, furnishes storage data on the various ordnance storage structures at Charlestown (see document E-4).

(h) A general development plan from the Navy Bureau of Yards & Docks, dated 29 July 1952, shows the fenced magazine area for ammunition storage, and the skeet & trap ranges (see document L-1).

(i) Public Works Drawing No. 2318, dated 30 June circa 1950's, (year partially obliterated), shows the machine gun range and ammunition storage location of NAAF Charlestown. It also shows a dump used for aircraft burial near the sewage disposal area (see document L-2).

(j) An Ammunition and Explosives Stowage Inspection Report, dated 29 October 1953, gives the explosive type and limit for which the five ammunition structures were licensed. Building #56 contained inert practice bombs. Buildings #57 and #59 were empty. Building #58 contained 600 each, sub-caliber aircraft rockets (SCAR), material maintained by the Rhode Island Air National Guard, who also used Building #60 to store .50 Caliber Ammunition (see documents D-4, E-5, and plate 1).

(k) An aerial photograph dated 21 April 1954 shows that both the Hunter Island dump, and the dump by the waste disposal site, were continually being used (see photo K-4).

(3) At various times numerous naval aviation combat and training units were assigned to NALF during its existence. The types of aircraft within these units were fighters, torpedo, dive and glide bombers, anti-submarine warfare patrol, photo reconnaissance, target towing, transport and trainers. A compendium of ordnance carrying aircraft as shown in Table 4-1. This information was obtained from a series of official installation history publications covering the development of NAS Quonset Point and Auxiliary Airfields (Reference B-82). The information concerning ordnance stores carried on these aircraft was extracted from the book, The Concise Guide to American Aircraft of World War II, by David Mondey (see reference B-81).

Table 4-1
Ordnance Carrying Aircraft Stationed at NALF and Authorized Stores

Model	**Popular Name**/Mission	Authorized Ordnance
AM-1	**Mauler** Attack/Bomber	Small caliber, 20mm, torpedoes, 5-in rockets, bombs, mines
TBF-1	**Avenger** Dive/Torpedo Bomber	Torpedo, 500 and 2,000-lb bombs, Small arms ammunition cal.30, .50, 325-lb depth charge
FM-1	**Wildcat** (variant) Fighter/Dive Bomber	Small arms ammunition cal.50, 5-in rockets 250-lb bombs
FM-2	**Wildcat** (variant) Fighter/Dive Bomber	Small arms ammunition cal.50, 500-lb bombs
SNJ	**Texan** (variant) Aerial Photography/Reconnaissance/Target Towing	Small arms ammunition, cal. .30
J2F-6	**Duck** Observation/Anti-submarine Warfare	325-lb depth charges
SNJ-4	**Texan** (variant) Aerial Photography/Reconnaissance/Target Towing	Small arms ammunition, cal. .30
SNJ-5	**Texan** (variant) Aerial Photography/Reconnaissance/Target Towing	Small arms ammunition, cal. .30
FG-10	**Corsair** (variant) Fighter/Attack	Small arms ammunition cal. .50, 250-lb, 500-lb, 1000-lb bombs, 5-inch rockets
F4U-1D	**Corsair** (variant) Fighter/Attack	Small arms ammunition cal. .50, 1000-lb bombs, 5-inch rockets

Table 4-1 (cont.) Ordnance Carrying Aircraft Stationed at NALF and Authorized Stores		
Model	**Popular Name**/Mission	Authorized Ordnance
F4U-4	**Corsair** (variant) Fighter/Attack	Small arms ammunition cal. .50, 1000-lb bombs, 5-inch rockets
F6F-5	**Hellcat** Fighter/Dive Bomber	Small arms ammunition cal. .50, 1000-lb bombs, 5-inch rockets
TBM-1	**Avenger** (variant) Bomber/Torpedo Bomber	Torpedo, 500 and 2,000-lb bombs, Small arms ammunition cal.30, .50, 325-lb depth charge
TBM-5	**Avenger** (variant) Bomber/Torpedo Bomber	Torpedo, 500 and 2,000-lb bombs, Small arms ammunition cal.30, .50, 325-lb depth charge
TBM-3E	**Avenger** Bomber/Torpedo Bomber	Torpedo, 500 and 2,000-lb bombs, Small arms ammunition cal.30, .50, 325-lb depth charge
SB2C	**Helldiver** (variant) Dive Bomber	Small arms ammunition, cal. .30, 5-inch rockets, 500-lb bombs
SB2C-4	**Helldiver** (variant) Dive Bomber	Small arms ammunition, cal. .30, 5-inch rockets, 500-lb bombs
SB2C	**Helldiver** (variant) Dive Bomber	Small arms ammunition, cal. .30, 5-inch rockets, 500-lb bombs
SB2C-5	**Helldiver** (variant) Dive Bomber	Small arms ammunition, cal. .30, 5-inch rockets, 500-lb bombs
SBW-4E	**Helldiver** (Canadian built) Dive Bomber	Small arms ammunition, cal. .30, 5-inch rockets, 500-lb bombs
OS2U	**Kingfisher** Air-sea rescue	Small arms ammunition cal.30, 100-lb bomb 325-lb depth charge
PBY-5A	**Catalina** (variant) Air-sea Rescue, Observation	Small arms ammunition, cal. .30
PBY-6A	**Catalina** (variant) Air-sea Rescue Observation	Small arms ammunition, cal. .30

(4) A complete list of sources utilized to verify the presence of OE at the Naval Auxiliary Landing Field is included in Appendix A, Reference Sources and includes the following: see Appendix A, Reference Source.

(a) National Archives
(b) Regional Archives
(c) The Military History Institute
(d) US Army Center for Military History
(e) Explosive Ordnance Disposal Units (EOD)

(f) Local Law Enforcement Agencies
(g) County Court House
(h) Local Historical Societies
(i) Local Libraries
(j) Local Residents

c. Interviews With Site-Related Personnel

(1) Mr. Webster is an experienced aviation historian and archeologist. His efforts included the excavating of the remains of nine aircraft from a NALF Charlestown dump, and documenting the remains of four more in the Hunter Island dump. During his tenure as a museum curator, and while performing archeological activities, he has never come in contact with, or heard of any confirmed reports of, OE at the landing field (see document I-1).

(2) Col. Brady heads the Charlestown City Police Department. A complete records check at the station showed no OE related responses at the Naval Auxiliary Landing Field. One incident, initially perceived to be ordnance related, dealt with an apparent weather gathering device which had fallen onto an off shore island. This was an inert item and considered totally unrelated to military activity. He stated that since the base closure in 1974, responses to NALF for any reason were rare (see document I-2).

(3) Ms. Godden is a former real estate agent and long time local resident. Since her husband had taken pilot training at the field, and she had been an employee of NALF, Ms. Godden felt that little information would have escaped them. She stated that only small amounts of ammunition and explosives were ever maintained at the field, because the base was built for training. Air defenses were never set up, and she could not recall that any special area was established as a disposal area for unserviceable munitions. She did recall that during a school meeting something had been said about the Navy using an area at the end of one runway for dumping unspecified material (see document I-3).

(4) Mr. Andres works in the Charlestown office of the US Fish & Wildlife Service. During the interview he showed the site investigation team several different sizes of projectiles from small arms to fragmented 20mm practice rounds. He stated he had heard many stories of various finds throughout the Ninigret Park area. However, the only confirmed OE finds he knew of were the aforementioned at the Shoot-in-Butt range (see document I-4).

(5) Mr. Hebert is the Supervisor at the Charlestown office of the US Fish & Wildlife Service. He stated that reports of small arms and 20mm ammunition being found in various locations on the former NAAF are quite common, and still occur.

The Machine Gun Range (Shoot-in-Butt) is the only area he can confirm as having an OE presence.

(6) Mr. Mowry works with the Rhode Island Bomb Squad, which is located with the State Fire Marshall. He had no personal knowledge of OE items being found at the Charlestown site. Mr. Stan Davies, also a member of the squad, did recall an unconfirmed report of a fisherman snagging a small belt of 20mm ammunition out of a pond at the Naval Auxiliary Landing Field. The office files contained no records of responses to OE incidents on the site.

5. SITE ELIGIBILITY

a. Confirmed Formerly Used Defense Site

(1) Former land usage of the Naval Auxiliary Landing Field by the Department of the Navy has been confirmed and was summarized in the Corps of Engineer Findings and Determination of Eligibility (FDE) document (see document E-12). Actual site acreage consisted of approximately 631.3 acres.

(2) By 12 June 1982 all acreage that had been acquired for the Department of the Navy, by fee, was deeded to the City of Charlestown, RI (two parcels totaling 227.4 acres), or transferred by letter to the Department of the Interior (three parcels totaling 403.9 acres. No ownership of the former Naval Auxiliary Landing Field remains with the Department of Defense (DOD) (see plate 4).

b. Potential Formerly Used Defense Site

There were no potential Formerly Used Defense Sites found during the course of this investigation.

6. VISUAL SITE INSPECTION

a. General Procedures and Safety

(1) During the period of 21 through 30 October 1997, members of the Assessment Team traveled to the site of the Naval Auxiliary Landing Field. The primary task of the team was to assess OE presence and potential due to it's former usage as an auxiliary landing field in support of the Quonset Point Naval Air Station, as stated in the Inventory Project Report (INPR). The site inspection was limited to non-intrusive methods; i.e. subsurface sampling was not authorized nor performed.

(2) Real estate rights-of-entry were not obtained nor deemed necessary, as the land in question was accessible to the team.

(3) A site safety plan was developed and utilized by the assessment team to insure safety from injury during the site inspection of this facility. Prior to the inspection, a briefing was conducted which stressed that only military Explosive Ordnance Disposal (EOD) personnel (see reference B-4) should handle OE.

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

(5) The team walked all of the suspect areas, thoroughly investigating all possible locations where OE might have been stored, handled, expended, or disposed of. The team stopped at various points to observe and take photographs throughout the administrative, runway, ammunition storage, and the former range areas.

(6) The site is being broken down into sub-sites for this report. There is evidence that there is an OE presence at the site (see plate 3).

b. Area A: Ammunition Administrative Area

(1) This area is now owned by the City of Charlestown, and consists of approximately 1 acre. This real estate was utilized as an administrative and operations area to include those facilities required for quality control of both ordnance and ammunition commodities (see plate 2).

(2) Although not specified on base maps, some ordnance was sometimes stored in facilities other than magazines. Common practice was to store pyrotechnics in the control tower for emergency signaling. There may have also been similar pyrotechnics in a small structure (or vehicle) near the runway manned only during flight operations. In addition, small low explosive items (e.g. fire extinguisher cartridges, engine starter cartridges, or egress components) were likely stored in, or adjacent to, hangars. Also, ammunition was typically stored in law enforcement/security facilities as well as shooting clubs. There is no evidence of any sort of ammunition items ever physically being stored in this part of the field. Buildings which are listed as "ordnance" in this case probably refer to small arms or aircraft armament storage areas (arms rooms), weapon maintenance, classroom or simulation areas (see map L-1).

(3 The site inspection team discovered no remaining structural evidence of these buildings. All administrative buildings have been demolished and replaced with a large recreational complex (see photo J-1).

(4) No evidence of OE was discovered in this area.

c. Area B-1: Machine Gun Range (Shoot-in-Butt)

(1) This area consists of a 2-acre parcel that includes the Ammunition Ready Magazine (Building 55), and Shoot-in-Butt target located across the taxiway from Building 55.

(2) Ready Magazines were routinely used as ammunition staging areas for aircraft loading. Shoot-in-Butt targets were used by pilots and maintenance personnel to establish and confirm the accuracy of both .30 and .50 caliber machine guns, and the fixed 20mm cannon mounted on the aircraft (see plates 2 and 3).

(3) The Shoot-in-Butt target is now without the constructed wooden frame that normally surrounded the sides and top of the sloped concrete facing. Evidence of OE in the form of 20mm projectiles and small arms were found on the exposed concrete and in the remaining target sand. Much of this sand was removed and used as road fill for area B-2 (see photo 8 and plates 3 and 5).

(4) The Ready Magazine, Building 55, consists of concrete block walls erected on a concrete pad. The door is no longer affixed, and the roof, constructed of marine plywood and asphalt shingles, provides little protection from the elements (see photo J-2 and plate 5).

(5) No evidence of OE was discovered in the Ready Magazine (Building 55) area. Small arm and 20mm residue in the form of practice and ball projectiles were found in the remaining earth cover of the Shoot-in-Butt target's sloping backstop. No high explosive, high explosive incendiary, or complete rounds of ammunition were located.

d. Area B-2: Fill Area

(1) This area consists of an access road to the Wildlife Area. There are two authorized access roads into the Ninigret Wildlife Refuge. Access to the east entrance is by a well-maintained macadam road, whereas access to the west entrance is via a dirt road from State Highway 1. Soil removed from the Shoot-in-Butt target was used to surface approximately 2 acres of the western entrance road.

(2) Evidence of OE was found on the shoulders of the western entrance road. Although no belted ammunition or complete rounds were found, there were numerous projectiles. Identified in both this area, and the Machine Gun Range (Shooting-in-Butt) were small arms projectiles of .30 and .50 caliber, and those from 20mm ball and practice rounds. No high explosive or high explosive incendiary projectiles were found (see documents J-8, J-9, L-6 and plate 5).

e. Area C: High Explosive Storage Area

(1) This area consists of 2.1 acres of land with a ¼ inch corrugated steel arch earthen covered igloo in the center. The structure, building 60, which measures 25 by 50 feet has double metal doors facing a concrete reinforced barricade. Constructed on a concrete foundation, it remains in a moderately good state of repair, with the exception of the doors and upper ventilation system. This igloo was licensed for high explosive storage as late as 29 October 1953, and was used by the Rhode Island Air National Guard for storage of their .50 Caliber ammunition. During fleet carrier operations, aircraft armament in the form of, 20mm cannon, 5-inch rockets, torpedoes, 325 lb. depth charges and high explosive bombs ranging in size from 100 to 2000 pounds would have been stored here (see table 4-1, document E-5 and F-15, photo J-7, maps L-1 and 2, and plates 2, 3, and 5).

(2) The igloo is identified as a deteriorated bunker, one of two identified for demolition and disposal by a construction estimate and sketch (see document E-8). The area immediately behind building 60 was identified as the Inland Toxic Waste Dump, and has clearly been used as a disposal area, since a myriad of discarded items clutter the ravines and the areas just off the service road.

(3) The site inspection team spent considerable time at this location and found no evidence of OE.

f. Area D: Small Arms, and Fuse and Detonator Magazine Area

(1) This area is comprised of two separate igloos and the land surrounding them totaling 1.3 acres. Many types of aircraft were stationed at NALF for training and fleet carrier operations. Ammunition stores would have included small arms ammunition (normally .30 caliber and .50 caliber), and 20mm cannon ammunition. Also stored were some of the associated fuzing and armament components, and cartridge and propellant activated devices (see table 4-1, document E-5 and F-15, photo J-7, maps L-1 and 2, and plates 2, 3, and 5).

(2) The small arms magazine, building 58, is a ¼ inch corrugated steel arch earthen covered igloo constructed on a concrete foundation. The magazine, which measures 25 by 50 feet, directly faces the service road and has no protective barricade. Weathered wooden doors are present, but locking devices are not currently functional. This structure was licensed for up to 10,000 lb. of smokeless powder when the Rhode Island Air National Guard used it for storage of 600 rounds of 2.25-inch subcaliber aircraft rockets (SCAR). Several models of SCAR rockets were manufactured, each possessing the same ballistic characteristics of the 3.5, 4.5 or 5-inch high explosive or smoke munitions (see documents D-4, E-5, photo J-5, and plate 2, 3, and 5).

(3) The Fuse and Detonator Magazine, Building 59, is of Keyport Type construction, using ¼ inch corrugated steel arch which is earth covered and barricaded. The igloo measures 6 feet by 8 feet 8 inches, and was licensed in 1953 to store up to 15,000 pounds of high explosives. At the time of that inspection, however, the structure was not being used.

(4) These buildings were licensed for storage of various explosive materials, but the search, which included the immediate areas, failed to reveal any evidence of a remaining OE presence.

g. Area E: Pyrotechnic and Inert Magazine Area

(1) This area incorporates two separate magazines and the surrounding area. Total acreage involved is 1 acre. The Inert Magazine would have held all empty bombs, rocket warheads, inert training and ammunition devices, and armament components such as arming wires. During carrier operations, aircraft ammunition stores which needed storage in the Pyrotechnic Magazine included all the pyrotechnic devices, signal flares and aircraft and safety related items needed (see table 4-1, document E-5 and F-15, photo J-7, maps L-1 and 2, and plates 2, 3, and 5).

(2) The Pyrotechnic Magazine, Building 57, is of Keyport Type construction, using ¼ inch corrugated steel arch which is earthen covered but unbarricaded. The igloo measures 6 feet by 8 feet 8 inches, and although licensed to store up to 10,000 pounds of smokeless powder it was empty during a 1953 inspection (E-5). Ninigret Refuge uses this structure as a rest area and rain shelter on one of their hiking trails. Both doors have been removed, and several bench seats have been added (see document E-5, map L-6, and photo J-4).

(3) The Inert Storage Magazine is made of wood frame with corrugated asbestos siding placed upon a concrete foundation. This is the largest building used for ammunition storage, measuring 24 feet by 36 feet by 14 feet. Two wooden

doors, which were padlocked during the site investigation, face outward towards the service road. The site inspection team did not enter the building, but were informed by Ninigret Park personnel that although some old park service equipment remained within, it wasn't considered a true storage facility.

(4) This building was licensed for storage of up to 8000 cubic feet of inert ordnance materials. 100-pound MK 15 Water/Sand Filled (WSF) practice bombs were stored there in 1953 by the Rhode Island Air National Guard. According to historical documents, training aircraft were capable of carrying practice bombs that were also potentially stored here. Targets for bombing, strafing, and rocket practice were within easy flying distance of the field (see document E-5, I-1, J-3, and plates 2, 3, and 5).

(5) These buildings were licensed and used for pyrotechnic and inert ordnance storage, however, information gathered during interviews, research and a search of the immediate areas failed to reveal a remaining presence following site closure.

(6) The site inspection team found no evidence of OE in this area.

h. Area F: Skeet and Trap Ranges

(1) This area contains two separate ranges that are located within separate 3 acre parcels. Located in a low-lying region of the park, the former range is now heavily overgrown by weeds and underbrush. This is detailed in the General Development Plan furnished as document L-1, and Map L-7.

(2) The Trap range consisted of a range house, 1 low-skeet house, a control house (shared by both ranges), and a tower (shared by both ranges) (see map L-1 and documents E-3 and F-2). The Trap Range is separated from the Skeet Range by a fence line.

(3) The skeet range consisted of a range house, 1 low-skeet house, one high-skeet house, a control house (shared by both ranges), and a tower and storage shed (both shared by both ranges). These were located in close proximity to a service road, which after years of natural reclamation progress, is now maintained as a nature trail by park personnel.

(4) The site investigation team completed an extensive search in both portions of this area. The land has been completely overgrown with brambles, brush and small trees. There was no remaining evidence of buildings, concrete foundations, shooting walk or position hardstand found.

(5) No evidence of OE was discovered in either portion of this area.

i. Area G: Dump Site

(1) This area, consisting of approximately 6 acres, was utilized as a naval trash dump from the 1940's until site closure in 1974. The City of Charlestown continues to use the dump area for disposing of concrete rubble and other material (see documents I-1 and I-3, E-8 and E-11, F-11, L-3, and plate 3).

(2) An extensive visual search of this area was completed with no evidence of OE found.

j. Area H: Hunter Island Dump Site

This area consists of approximately 3 acres and is located at the end of NW - SE Runway 30. A comparison of photographs in Appendix K shows the transformation from island to a peninsula with a pond and road. Between the years 1954 and 1969, four damaged aircraft, formerly used as fire fighting hulks, were buried on the island and covered with building debris in 1969. This area has been mentioned as potential Hazardous Waste Site Hunter Island (see document E-8). Several personnel interviewed have heard stories circulating about belts of 20mm ammunition being found here. Local law enforcement agencies and EOD units have no reports to substantiate this. Historical documentation has not been found which indicates this region of the Ninigret Park was ever used as an ammunition disposal area (see documents E-8, F-14, I-1, I-4, I-5, I-6, K1 through K-6, and L-1).

(2) No visual evidence of OE was found after an extensive search of this area.

k. Area I: Pistol Range

(1) This area consists of approximately 2 acres of land located just off the Southwest end on the Northeast-Southwest runway. This heavily overgrown portion of land is bordered by a runway, a taxi-way, and Ninigret Pond. The area, part of the Ninigret Park and Refuge, displayed no evidence of access roads, paths, or signs of recent entry. A Public Works Map of the facility, dated 30 June 1943, shows a 25 & 50 Yard Pistol Range located in this area, however, it is not included in more recent maps. This map also shows many proposed changes to the Auxiliary Landing Field, which could indicate that this range was envisioned, but never constructed.

(2) The assessment team found no visual evidence of a firing range, small arms or OE usage in this area.

l. Area J: Remaining Land

(1) This area consists of all property identified as part of the former Naval Auxiliary Landing Field, other than that contained within Areas A through I. This land is now a nature preserve in the Ninigret Park and Refuge Area, or part of a recreational complex. Remaining lands total 604.9 acres.

(2) The assessment team found no historical documentation substantiating an OE usage in this area and no visual evidence of OE within this area.

7. EVALUATION OF ORDNANCE HAZARDS

a. General Procedures

(1) The site was evaluated to determine confirmed, potential, or uncontaminated ordnance presence. **Confirmed ordnance and explosive (OE) presence** is based on verifiable historical record evidence or direct witness of OE items (with explosive components and/or inert debris/fragments) since site closure. Additional data is not needed to identify a confirmed site. Verifiable historical record evidence is based on OE items actually seen on site since site closure and authenticated by; historical records (Archive Records, Preliminary Assessment Reports, Site Investigation Reports), local fire departments and law enforcement agencies/bomb squads, military Explosive Ordnance Disposal (EOD) Units, newspaper articles, photographs or maps. Direct witness of OE items consists of the site inspection team(s) and other credible witnesses as determined by the ASR Research Team Leader (landowners, workers on-site, service members who served there, etc.) verifying that they have seen OE presence on the surface or subsurface since site closure.

(2) **Potential ordnance and explosive (OE) presence** is based on a lack of confirmed OE presence. Potential OE presence is inferred from records, present day site features, non-verifiable direct witness, or indirect witness. Additional field data is needed to confirm potential ordnance subsites. Inference from historical records is based on no OE items actually seen on site since site closure and would include common documentation (records, aerial photographs, maps) indicating possible OE presence derived from common practice in production, storage, use or disposal at that time and from records indicating known OE usage. Potential ordnance presence could also be based on indirect witness or from present day site features.

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

b. Area A: Ammunition Administration Area

Area A is considered to be **uncontaminated.** This area of the Naval Auxiliary Landing Field was where base administrative and classroom training facilities were located. Buildings to store small arms weapons and training devices were not uncommon in student training areas, but these buildings have been removed and the area is now a grass covered recreational complex. There is no historical, interview, or physical evidence that indicates a past or remaining OE presence/burial in the area.

c. Area B-1: Machine Gun Range (Shoot-in-Butt)

Area B-1 is considered to be **uncontaminated.** Members of the site inspection team and the Rhode Island Fish and Wildlife Service discovered the presence of surface OE residue, but further investigation revealed that only practice and ball projectile from 20mm cannon ammunition, and from both .30 and .50 caliber rounds, were used in this area. Historical documentation also supports this find. There were no signs of high explosive or high explosive incendiary components, or of any belted or complete rounds found in this area. None of the expended projectiles were manufactured containing energetic material.

d. Area B-2: Fill Area

Area B-2 is considered to be **uncontaminated.** All forms of OE material described above were contained in the earth transported from Area B-1 to surface the western access road. None of the projectiles discovered contained energetic material, nor were any complete rounds encountered.

e. Area C. High Explosive Storage

Area C is considered to be an area of **potential ordnance presence.** The team performed a surface visual inspection of this area, which included the inland dumpsite, to the greatest extent possible. In addition, no historical documentation, interview information, or physical evidence substantiates a remaining ordnance presence in this area. However, obvious deposits of military usage era trash and debris, and common practices performed during that era indicate the possibility of an OE burial in the dumpsite portion of this area.

f. Area D. Small Arms and Fuse and Detonator Magazines

Area D is considered to be **uncontaminated.** While there is historical evidence to substantiate a past ordnance (storage) presence in both of these igloos, the structures and the area immediately surrounding them appeared visibly free of ordnance. The site inspection team discovered no explosive ordnance or residue.

g. Area E. Pyrotechnic and Inert Magazines

Area E is considered to be **uncontaminated.** Historical evidence substantiates a past ordnance (storage) presence in both of these igloos. No historical, interview or physical evidence displays a remaining OE presence following site closure. The structures and the area immediately surrounding them appeared ordnance free during the site inspection team's search. No explosive ordnance or residue was discovered.

h. Area F. Skeet and Trap Range

Area F is considered to be **uncontaminated.** While there is historical evidence to substantiate a past presence and usage of small arms on both of these ranges, evidence such as concrete hardstand, or structures could not be found, either due to demolition, removal, or the process of natural reclamation. The areas where buildings, firing positions or targets were located appeared completely ordnance free. No explosive ordnance or residue was discovered.

i. Area G. Dump Site

Area G is an area of **potential ordnance presence.** There is historical evidence to substantiate a past presence of inert MK 15 Mk 2 100 lb. practice bombs in this area which are delivered totally devoid of energetic material. No historical, interview or site inspection team findings confirm an energetic OE or OE residue presence in this area, but the discovery of practice bombs appears to confirm that this was dump for excess or unwanted inert material and not an ordnance disposal area. The site inspection team walked the former dump area in its entirety and found no evidence or indications of OE or OE related items ever having been used in this area. However, due to common disposal practices of that era, the possibility of OE bearing an energetic presence exists. When obvious deposits of military usage material, such as the practice bombs are present it indicates the possibility of an OE burial in this area exists.

j. Area H. Hunter Island Dump Site

Area H is an area of **potential ordnance presence.** Historical evidence substantiates a presence of buried military aircraft. While reports of 20mm ammunition being found in the pond have been documented, no historical documentation or physical evidence substantiates the dumping of OE in this area. The site inspection team completed an extensive search of the Hunter Island area and found no physical evidence of OE or ordnance related items. This area has been confirmed as a naval dumping ground, and since common practices performed during the military use era indicates the possibility of an OE burial in this area, this is considered sufficient to consider this as having a potential ordnance presence.

k. Area I. Pistol Range

Area I is considered to be **uncontaminated.** A 25 & 50 Yard Pistol Range was included on only one Public Works Map, which also included many proposed changes to the airfield. Interviews with local residents failed to confirm that this range was ever in existence. The site inspection team completed a thorough search in the area, failing to uncover any small arms ammunition or associated components, firing positions, target locations or backstops. No physical evidence of OE or ordnance related items were discovered.

l. Area J. Remaining Land

Area J is considered to be **uncontaminated.** This area includes the administrative areas, and the former locations for personnel barracks, mess facilities, fueling facilities, classrooms, recreation facilities, and other structures, runways, and land unrelated to ordnance or explosive activities. It is unlikely that any OE or CWM would have been present in this area at the time that the Naval Auxiliary Landing Field was declared surplus or thereafter. No OE was found in this area by the assessment team and there have been no reports of surface or buried OE here since site closure.

8. SITE ORDNANCE TECHNICAL DATA

a. End Item Technical Data

While there are some general and specific references to ordnance stored on the site, no complete listing of ordnance stored at the Naval Auxiliary Landing Field could be found. Tables 8-1 and 8-2 on the next four pages have been developed to establish a list of items that could have potentially been stored at NALF. Some ordnance types were likely contingency stock for

operations against enemy ships and submarines and other types were available for practice against targets located at off-site ranges previously referred to in this report. It is based upon available documentation and from what is known of the aircraft models stationed at NALF. Drawings and additional information for these items may be found in documents D-1 through D-5. This information is merely reference material and must not be construed as suggesting that this ordnance contaminates the former NALF today.

Table 8-1
Bombs, Rockets and Torpedoes Possibly Stored at NALF

Nomenclature	Filler	Authorized Fuze(s)
Bomb, 100-lb, GP, AN-M30	53.3-lbs 50/50 Amatol or 56.6-lbs TNT	AN-M103, AN-M100A2, M103 M118, M119, M112, M100 M106, AN-M100A1
Bomb, 250-lb, GP, AN-M57	123.7-lbs 50/50 Amatol or 129-lbs TNT	AN-M103, AN-M100A2, M103 M118, M119, M112, M100 M106, AN-M100A1
Bomb, 500-lb, GP, AN-M43	264.5-lbs 50/50 Amatol or 280-lbs TNT	AN-M103, AN-M101A2, M103 M118, M119, M112, M113 M106, M101, AN-M101A1 M106, AN-Mk 230
Bomb, 500-lb, GP, M43	264.5-lbs 50/50 Amatol or 280-lbs TNT	AN-M103, AN-M101A2, M103 M118, M119, M112, M113 M106, M101, AN-M101A1 M106, AN-Mk 230
Bomb, 500-lb, GP, AN-M64	264.5-lbs 50/50 Amatol or 280-lbs TNT	AN-M103, AN-M101A2, M103 M118, M119, M112, M113 M106, M101, AN-M101A1 M106, AN-Mk 230
Bomb, 1,000-lb GP, M44	536.6-lbs 50/50 Amatol or 566-lbs TNT	AN-M103, AN-M102A2, M103 M118, M119, M114, M106 AN-M102A1, AN-Mk 230
Bomb, 1,000-lb GP, AN-M44	548-lbs, Amatol	AN-M103, AN-M102A2, M103 M118, M119, M114, M106 AN-M102A1, AN-Mk 230
Bomb, 1,000-lb GP, AN-M65	548-lbs, TNT	AN-M103, AN-M102A2, M103 M118, M119, M114, M106 AN-M102A1, AN-Mk 230
Bomb, 2,000-lb GP, M34	1061-lbs, Amatol	AN-M103, AN-M102A2, M103 M118, M119, M114, M106 AN-M102A1, M102 AN-Mk 230
Bomb, 2,000-lb GP, AN-M34	1061-lbs, Amatol	AN-M103, AN-M102A2, M103 M118, M119, M114, M106 AN-M102A1, M102 AN-Mk 230

Table 8-1 (cont.)
Bombs, Rockets and Torpedoes Possibly Stored at NALF

Nomenclature	Filler	Authorized Fuze(s)
Bomb, 2,000-lb GP, AN-M66	1096-lbs, TNT	AN-M103, AN-M102A2, M103 M118, M119, M114, M106 AN-M102A1, M102 AN-Mk 230
Bomb, 500-lb, SAP, AN-M58	154-lbs 50/50 Amatol or 156-lbs TNT	AN-M103, AN-M101A2, M103 M118, M119, M113, M106
Bomb, 500-lb, SAP, AN-M58A1	148.5-lbs 50/50 Amatol or 156-lbs TNT	AN-M103, AN-M101A2, M103 M118, M119, M113, M106
Bomb, 1,000-lb SAP, AN-M59	307-lbs 50/50 Amatol or 318-lbs TNT	AN-M103, AN-M102A2, M103 M118, M119, M114, M106 AN-102A1
Bomb, 1,000-lb AP, M52	58.35-lbs explosive D	AN-M102A2, AN-M102A1 M102
Bomb, Depth, 325-lb, AN-Mk 17M1	TNT, 234-lbs	AN-Mk 219 or AN-Mk 221 or AN-Mk 234 or AN-Mk 224
Bomb, Depth, 325-lb, AN-Mk 41	226-lbs, TNT	AN-Mk 219 or AN-Mk 221 or AN-Mk 234 or AN-Mk 224
Bomb, Depth, 350-lb, AN-Mk 44	250-lbs, Torpex	AN-Mk 219 or AN-Mk 221 or AN-Mk 234 or AN-Mk 224
Bomb, Practice, 3 lb AN-MK 23	Black Powder Spotting Charge, .028 lbs	PD
Bomb, Practice, 3 lb AN-MK 5, Mod 1	Black Powder Spotting Charge, .028 lbs	PD
Bomb, Practice, 4.5 lb AN-MK 43	Black Powder Spotting Charge, .028 lbs	PD
Bomb, Practice, 17 lb M37	Smoke Charge Composition, .75 lbs (Spotting Charge)	PD
Bomb, Practice 20 lb M45	Black Powder Spotting Charge, .13 lbs	PD
Bomb, Practice 20 lb M48	Black Powder Spotting Charge, .13 lbs	PD
Bomb, Practice, **100 lb Mk 15	Inert (sand or water filled) or Mk 4 or 7 Signal	None or optional Mk 247
Bomb, Practice, 300 lb Mk1	Black Powder, 4 lb	BD

Table 8-1 (cont.)
Bombs, Rockets and Torpedoes Possibly Stored at NALF

Nomenclature	Filler	Authorized Fuze(s)
Bomb, Practice, **100 lb M38A2 w/spotting charge M1A1 w/28 gage blank shotgun shell	Inert (sand or water filled) or optional 3 lbs black powder	Optional base initiated fuze is used with black powder charge.
Bomb, Depth, 350-lb, AN-Mk 47	Torpex	AN-Mk 219 or AN-Mk 221 or AN-Mk 234 or AN-Mk 224
Bomb, Depth, 650-lb AN-Mk 29	TNT, 464-lbs	AN-Mk 219 or AN-Mk 221 or AN-Mk 234 or AN-M103 AN-Mk 224 and AN-Mk 229
Bomb, Depth, 650-lb AN-Mk 37	TNT, 464-lbs	AN-Mk 219 or AN-Mk 221 or AN-Mk 234 or AN-M103 AN-Mk 224 and AN-Mk 229
Bomb, Depth, 650-lb AN-Mk 38	TNT, 464-lbs	AN-Mk 219 or AN-Mk 221 or AN-Mk 234 or AN-M103 AN-Mk 224 and AN-Mk 229
Rocket, 2.25-Inch,Sub-caliber Aircraft Rocket ** w/Mk 10, Mk 11, Mk12 or Mk 13 Rocket Motor	Ballistite, 1.12 to 1.75-lbs, depending upon motor model	Inert warhead
Rocket, 5.0-Inch, HE001		
Warhead, Mk1 Mod 0	TNT, 8.6-lbs	Mk 148 Mod 0
Motor, 3.25-inch Mk 7 Mod 0	Ballistite, 8.5-lbs	
Rocket, 5.0-Inch, HE005		
Warhead, Mk1 Mod 0	TNT, 8.6-lbs	Mk 146 Mod 0
Motor, 3.25-inch Mk 7 Mod 0	Ballistite, 8.5-lbs	
Rocket, 5.0-Inch, HE007		
Warhead, Mk1 Mod 0	TNT, 8.6-lbs	Mk 146 Mod 0 and Mk 148 Mod 0
Motor, 3.25-inch Mk 7 Mod 0	Ballistite, 8.5-lbs	
Rocket, 5.0-Inch, HE009		
Warhead, Mk1 Mod 0	TNT, 8.6-lbs	Mk 148 Mod 0 and Mk 149 Mod 0
Motor, 3.25-inch Mk 7 Mod 0	Ballistite, 8.5-lbs	
Rocket, 5.0-Inch, HE022		
Warhead, Mk1 Mod 0	TNT, 8.6-lbs	Mk 147 Mod 0
Motor, 3.25-inch Mk 7 Mod 0	Ballistite, 8.5-lbs	
Rocket, 5.0-Inch, HE023		
Warhead, Mk1 Mod 0	TNT, 8.6-lbs	Mk 157 Mod O and Mk 148 Mod 0

Table 8-1 (cont.)
Bombs, Rockets and Torpedoes Possibly Stored at NALF

Nomenclature	Filler	Authorized Fuze(s)
Motor, 3.25-inch Mk 7 Mod 0	Ballistite, 8.5-lbs	
Rocket, 5.0-Inch, HE024		
Warhead, Mk1 Mod 0	TNT, 8.6-lbs	Mk 157 Mod 0 and Mk 149 Mod 0
Motor, 3.25-inch Mk 7 Mod 0	Ballistite, 8.5-lbs	
Torpedo, Mk 13		Exploder, Mk8
Warhead, Mk 13	Torpex 600-lbs	
Booster	Tetryl	
Fuel	Ethyl Alcohol	
Igniter, MK 6 Mod 2	17 grains black powder 153 grains celluloid	
Torpedo, Mk 14 *		Exploder, Mk 8
Warhead, Mk 16, Mod 6	HBX, 643-lbs	
Torpedo, Mk 15 *		Exploder, Mk 6, Mod 13
Warhead, Mk 17, Mod 3	HBX, 825-lbs	
Torpedo, Mk 18 *		Exploder, Mk 8 or Mk 9
Warhead, Mk 18, Mod 3	HBX, 575-lbs	
Torpedo, Mine Mk 24 *		Exploder, Mk 142
Warhead, Mk 24	HBX-1, 92-lbs	

* Information on components other than fuzes and warhead was not available.
** Historical documentation indicate these items have been stored on NALF.

Table 8-2
Small/Medium Caliber Ammunition Stored or Possibly Stored at NALF

Item	Model	Filler
Small Arms Ammo	M2 Ball	Lead Antimony
** .30 Cal	M2 AP	Tungsten Chrome Steel
** with gilding metal	M1 Tracer	Tracer Composition
** jacket		Lead Antimony
	M1 Ball	Lead Antimony
	M1 Incendiary	*Incendiary Composition
		Lead, Steel
w/Propellant		Single base powder
w/Primer, Percussion		
Small Arms Ammo	M1911 Ball	Lead Antimony
.45 Cal		
w/gilding metal jacket		
w/Primer, Percussion	F.A. 70	0.37 gr., Primer Composition
Propellant		5 gr., smokeless powder

Table 8-2 Small/Medium Caliber Ammunition Stored or Possibly Stored at NALF		
Item	Model	Filler
Small Arms Ammo .50 Cal		
**	M2 Ball	Lead Antimony
**	M2 AP	Tungsten Chrome Steel
**	M1 Tracer	Tracer Composition Lead Antimony
	M1 Incendiary	*Incendiary Mixture Steel/Lead Antimony Single base propellant
w/Propellant w/Primer, Percussion w/gilding metal jacket		
Cartridge, 20-mm HE-I w/Fuze, Percussion Mk I w/Primer M36 or M37	Mk I	Cast TNT, .148 to .150-lbs *Incendiary composition FNH Powder, Type II, .066-lbs Cold drawn steel projectile body
** AP-T (Ball) w/Primer M36 or M37 ** w/Tracer	M75	Tracer Mix FNH Powder, Type II, .066-lbs Cold drawn steel projectile body

* A mixture of various metallic salts (oxidizers), pyrophoric metals.
** Indicates item confirmed since site closure.

b. Chemical Data of Ordnance Fillers

Table 8-3 provides a summary of the chemical data for the fillers contained in the ordnance listed in Tables 8-1 and 8-2.

Table 8-3 Chemical Data of Ordnance Fillers		
Explosive Material	Synonym(s)	Chemical Formula *
Torpex		Mixture
41.6 percent RDX		$(CH_2NNO_2)_3$
39.7 percent TNT		$(CH_3)C_6H_2(NO_2)_3$
18.0 percent Aluminum Powder		AL
.7 percent Bees Wax Binder		-
RDX	Cyclotrimethylenetrintramine	$(CH_2NNO_2)_3$
Smokeless Powder	Nitrocellulose; Pyroxylin; Cellulose Nitrate	$[C_6H_8O_5(NO_2)_3]_n$

Table 8-3 (Cont.)
Chemical Data of Ordnance Fillers

Explosive Material	Synonym(s)	Chemical Formula *
HBX - various mixtures of:	High Blast Explosives	
TNT		$CH_3)C_6H_2(NO_2)_3$
RDX		$(CH_2NNO_2)_3$
Aluminum		$CaCl_2$
Calcium Chloride		Al
D2 Wax		
84 percent parafin wax		-
14 percent nitrocellulose		$[C_6H_8O_5(NO_2)_3]_n$
2 percent lecithin		-
TNT	Trinitrotoluene	$(CH_3)C_6H_2(NO_2)_3$
Tracer Composition		
Various Combinations		
Strontium Nitrate		SrO_2
Polyvinyl Chloride	PVC	CH_2=CHCl
Strontium Peroxide		SrO_2
Incendiary Composition		Mg & Al and one of
Various proportions of a mixture		following:
of Magnesium Aluminum metals		
Barium Nitrate		$Ba(NO_3)_2$
Ammonium Nitrate		NH_4NO_3
Iron Oxide		Fe_2O_3
Potassium Chlorate		$KClO_4$
Amatol		
Ammonium Nitrate		NH_3NO_4
TNT		$CH_3C_6H_2(NO2)_3$
Ballistite	Double-base Powder	
60% Nitrocellulose		$[C_6H_8O_5(NO_2)_3]_n$
39% Nitroglycerin		$CH_2NO_3CHNO_3CH_2NO_3$
0.75% Diphenylamine		$(C_6H_5)_2NH$
Black Powder		
74% Potassium Nitrate	Salt Peter; Niter	KNO_3
11% Sulfur		S
15% Charcoal		C
Double Based Powder	Ballistite	$(C_6H_8O_5(NO_2)3)n$
60% Nitrocellulose	Guncotton; Pyroxylin	$CH_2NO_3CHNO_3$
39% Nitroglycerin		CH_2NO_3
	Stabilizer DPA	
0.75% Diphenylamine		$(C_6H_5)_2NH$
Red Phosphorus		P_4
Tracer Compound		
16% Polyvinyl Chloride		Mg
26% Magnesium Powder		$Sr(NO_3)_2$
52% Strontium Nitrate		

9. OTHER ENVIRONMENTAL HAZARDS

a. Hazardous, Toxic, and Radiological

The site investigation team did not find any evidence to indicate there were potential sites/sources of HTRW other than those identified in the DEPR-FUDS Findings of Fact, Project No D01RI000801 dated 1 February 1988 (see document E-12).

b. Building Demolition/Debris Removal

There was sufficient evidence found to confirm the presence of buildings and debris presence that could be attributed to Department of Defense usage. A BD/DR project has been established for the Naval Auxiliary Landing Field (DERP Project No. D01RI000800) and the work was performed under Contract No. DACA33-86-C-0041 entitled "Demolition of Structures and Tanks, Former U.S. Navy Auxiliary Landing Field, Charlestown, Rhode Island" by MacDonald and Watson Waste Oil Co., Inc. of North Scituate, Rhode Island. The status of an initiative from the City of Charlestown to clean up more of the former installation is uncertain. This involved two waste sites (potential) called Hunter Island and Inlet Sites, two bunkers (igloos), and a pump house (see documents E-8 and E-11). Corrugated asbestos siding was used in the construction of the Inert Storage Magazine, Building 56(Area E). This should be included as a concern should this building be considered for future removal or destruction. The site inspection team did not find any additional structures during the course of the investigation that would warrant BD/DR removal.

ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR
NAVAL AUXILIARY LANDING FIELD
CHARLESTOWN, RHODE ISLAND
PROJECT NUMBER D01RI000804

APPENDIX A

REFERENCE SOURCES

APPENDIX A

REFERENCE SOURCES

The following organizations and personnel are acknowledged for their support

Organizations	Name	Telephone	Nature of Support
GOVERNMENT SOURCES			
FEDERAL AGENCIES			
Department of Defense			
DOD, Explosive Safety Board 2461 Eisenhower Avenue Alexandria, VA 22331	Computer Search (DDESB)	(703) 325-8624	No information.
Defense Library on Disk Pentagon Library, RM 1A518 Washington, DC 20301-6000	Computer Search (DLOD)	(703) 697-4658	No information.
Defense Technical Information Center 8725 John J. Kingman Road, Suite 0944 Fort Belvoir, VA 22060-6218	Computer Search (DTIC)	(703) 767-8274	No information.
Historical Accident Data Base USATCES, SIOAC-ESM Savanna, IL 61074-9639	Computer Search (DDESB)	(815) 273-8730	Nautical chart.
Army			
Defense Logistics Studies Information Exchange Logistics Management College Fort Lee, VA 23801	Computer Search (DLSIE)	(804) 734-4007	No information.
U.S. Army Chemical School Fisher Library, Bldg. 1081 Fort McClellan, AL 36205-5000	Richard Pastorett	(205) 848-4414	No information.

REFERENCE SOURCES (CON'T)

The following organizations and personnel are acknowledged for their support

Organizations	Name	Telephone	Nature of Support
GOVERNMENT SOURCES			
FEDERAL AGENCIES (con't)			
Army (con't)			
60th EOD Fort Dix, NJ 08640	SGT Burke	(908) 562-3538	No information.
Rock Island Arsenal Museum ATTN: SMCRI-PCA-M, Bldg 60 Rock Island, IL 61299	Chris Leinicke	(309) 794-5021	Technical manuals Furnished.
U.S. Army Ordnance Museum Attn: ATSL-DOS-M Bldg 2601 Aberdeen Proving Grounds, MD 21005-5201	Mr. Roger Godin	(410) 278-3602	Several old manuals Furnished.
Center of Military History ATTN: DAMH-RAS 1099 14 Street N.W. Washington, DC 20005-3402	Staff	(202) 761-5416	See Appendix B, Sec II, Parts A and B.
IOC Historical Office ATTN: AMSIO-EAH, Bldg 390 Rock Island Arsenal Rock Island, IL 61299	Tom Slattery	(309) 794-1450	No information.
U.S. Army CBDCOM Attn: AMSCB-CIH Aberdeen Proving Grounds, MD 21010	Kathleen Ciolfi	(410) 671-4430	No information.
NIMA/IDS National Imagery & Mapping Agency 5801 Tabor Avenue Philadelphia, PA 19120-5098	Mr. Steven	(800) 826-0342 (301) 227-2495	Aeronautical / nautical charts, topographic maps.

The following organizations and personnel are acknowledged for their support

Organizations	Name	Telephone	Nature of Support
GOVERNMENT SOURCES			
FEDERAL AGENCIES (con't)			
Army (con't)			
US Military History Institute Carlisle Barracks, Library & Archives Carlisle, PA 17013-5008	Mike Winey, Louise Friend, and John Slonaker	(717) 245-3434, 3601, and 3611	No information.
U.S. Army Tech Ctr for Explosive Safety ATTN: SIOAC-ESM Savanna, IL 61074	Shirley Daniels	(815) 273-8772	Reference Sources.
U.S. Army Tech Ctr for Explosive Safety ATTN: SIOAC-ESM Savanna, IL 61074	Shirley Daniels	(815) 273-8772	Reference Sources.
USACE, New England Division 424 Trapelo Road Waltham,MA 02254-9149	Andrea Cooney, Robert L. Batt	(978) 318-8269	Furnished Documents And maps.
USACE, Office of History Humphries Engineering Center 7701 Telegraph Rd. Alexandria, VA 22310-3865	Staff	(703) 355-3558	See Appendix B, Sec II, Parts A and B.
AIR FORCE			
Air Force Historical Research Agency 600 Chennault Circle Maxwell AFB, AL 36112-6424	Thomas Dean	(205) 953-6884	No information.
USAF Environmental Technical Applications Center (OL-A) 151 Patton Avenue, Rm 210 Ashville, NC 28801	Janet Wall	(704) 271-4404	Local climatological data (LCD) annual summary.

REFERENCE SOURCES (CON'T)

The following organizations and personnel are acknowledged for their support

Organizations	Name	Telephone	Nature of Support
GOVERNMENT SOURCES			
FEDERAL AGENCIES (con't)			
AIR FORCE (cont)			
Air Force History Research Agency (AFHRA) 600 Chennault Drive Maxwell AFB, AL 36112-6424	Ann Webb Mickey Russell	(205) 953-2395	No information.
Navy			
EOD Mobile Unit (MU) #2 Detachment Newport 1176 Howell Street Newport, RI 02841	GMCS Alvin Larkins	(401) 841-3301	No information.
Marine Corps Historical Center Bldg. 58, Washington Navy Yard Washington, DC 20374	Staff	(202) 433-3483	See Appendix B, Sec II, Parts A and B.
Naval Construction Battalion Center Attn: CODE 10H-NAVFAC Historian 10 23d Avenue Port Hueneme, CA 93043-4310	Dr. Vince Transano	(805) 982-5913	Photos and documents.
Naval War College Archives 686 Cushing Road Newport, RI 02841-1207	Dr. Evelyn Cherpack	(401) 841-2435	Area maps.
Naval Historical Center Washington Navy Yard, Bldg 57 Washington, DC 20374	Staff	(202) 433-3171	See Appendix B, Section II, Parts A and B.
NAVEODTECHDIV Technical Library 2008 Stump Neck Road Indian Head, MD 20640-5070	Betty Arboghast Dawn Risko	(301) 743-6834	No information.

REFERENCE SOURCES (CON'T)

The following organizations and personnel are acknowledged for their support

Organizations	Name	Telephone	Nature of Support
GOVERNMENT SOURCES			
FEDERAL AGENCIES (con't)			
Navy (Cont)			
Naval Historical Center Technical Library Washington Navy Yard Washington, DC 20374	Mark Wertheiner	(202) 433-3607	No information.
U.S. Naval Civil Engineering Support Office Bldg 20, 1023rd Avenue Port Hueneme, CA 93403-4310	Bob Brickley Cliff Ledderer	(805) 982-5593	Maps and photos provided.
U.S. Naval Engineering Facilities Command (Northern Division) Industrial Highway Philadelphia, PA	Jack Hayes	(610) 595-0764	No information.
U.S. Naval Engineering Facilities Command Code 14B, Room 10N59 200 Stovall Street Alexandria, VA 22332-2300	Jack Kane	(703) 428-0436	No information.
U.S. Naval Engineering Facilities Command (Northern Division) 10 Industrial Highway Philadelphia, PA 19113-2090	George Weise	(610) 595-0567 Ext: 128	No information.
U.S. Navy Directive and Records Management Code CNO N09B35 Washington Navy Yard, Bldg 166 901 M Street SE Washington, DC 20374	Lt Gilbert	(202) 433-4194	No information.

REFERENCE SOURCES (CON'T)

The following organizations and personnel are acknowledged for their support

Organizations	Name	Telephone	Nature of Support
	GOVERNMENT SOURCES		
National Archives Records Administration			
NARA, Archives I (Modern Military) Pennsylvania Ave & 7th St Washington, DC 20408	Staff	(202) 501-5385	See Appendix B Section II, Parts A and B.
NARA, Archives I (Navy) Pennsylvania Ave & 7th St Washington, DC 20408	Staff	(202) 501-5671	See Appendix B Section II, Parts A and B.
NARA, Archives I (Old Military) Pennsylvania Ave & 7th Washington, DC 20408	Staff	(202) 501-5390	See Appendix B Section II, Parts A and B.
NARA, Archives II (Cartographic/Architectural Br.) 8601 Adelphi Rd. College Park, MD 20740	Staff	(301) 713-7040	See Appendix B Section II, Parts A and B.
NARA, Archives II (Civil Reference Branch) 8601 Adelphi Rd. College Park, MD 20740	Staff	(301) 713-7250	See Appendix B Section II, Parts A and B.
NARA, Archives II (Motion Picture Branch) 8601 Adelphi Rd. College Park, MD 20740	Staff	(301) 713-7060	See Appendix B Section II, Parts A and B.

REFERENCE SOURCES (CON'T)

The following organizations and personnel are acknowledged for their support

Organizations	Name	Telephone	Nature of Support
	GOVERNMENT SOURCES		
FEDERAL AGENCIES (con't)			
National Archives Records Administration (con't)			
NARA, Archives II (Still Picture Branch) 8601 Adelphi Rd. College Park, MD 20740	Staff	(301) 713-6660	See Appendix B Section II, Parts A and B.
NARA, Archives II (Textual Branch) 8601 Adelphi Road College Park,MD 20740	Staff	(202) 501-5385	See Appendix B Section II, Parts A and B.
National Personal Records Center 9700 Page Ave. St. Louis, MO	Bill Siebert Wilson Sullivan	(314) 538-4085	See Appendix B Section III, Parts A and B.
NARA, Suitland Brance 4205 Suitland Road (Civil and Military) Suitland, MD 20409	Staff	(301) 457-7190	See Appendix B, Section II, Parts A and B.
NARA-New England Region 380 Trapelo Road Waltham, MA 02154	Stan Tozeski	(617) 647-8104	See Appendix B Section II, Parts A and B.
Washington National Records Center 4205 Suitland Road Suitland, MD 20409	Staff	(301) 457-7000	See Appendix B Section II, Parts A and B.
Library of Congress			
Library of Congress Geography and Map Division Washington, DC 20536	Staff	(202) 707-5522	See Appendix B Section II, Parts A and B.

REFERENCE SOURCES (CON'T)

The following organizations and personnel are acknowledged for their support

Organizations	Name	Telephone	Nature of Support
	GOVERNMENT SOURCES		
FEDERAL AGENCIES (con't)			
Smithsonian Institution			
Smithsonian National Air & Space Museum Historical Research Division Washington, DC 20560	Staff	(202) 357-3133	See Appendix B Section II, Parts A and B.
Department of Agriculture			
USDA-Natural Resources Conservation Service 60 Quaker Lane, Suite 46 Warwick, RI 02886	Jeannie Commerford	(401) 828-1300	Provided soil survey.
Department of Commerce			
NOAA; National Climatic Data Center Federal Bldg. Ashville, NC 28801	Yolanda Goosch Sam McCowan	(704) 271-4272	Local Climatological Data Reports.
NGS, Information Services N/NGS 12, SSMC#F, Station 9244 1315 E-W Highway Silver Spring, MD 20920-3282	Joan Rikon	(301) 713-2692	No information.
General Services Administration			
GSA, Region I Real Property Division 702 John W. McCormack Post Office and Courthouse Boston, Massachusetts 02109	J. W. O'Connell, Director	(617) 223-2651	Draft Environmental Impact Statement.

REFERENCE SOURCES (CON'T)

The following organizations and personnel are acknowledged for their support

Organizations	Name	Telephone	Nature of Support
GOVERNMENT SOURCES			
FEDERAL AGENCIES (con't)			
Department of the Interior			
U.S. Fish & Wildlife Service Shoreline Plaza, Route 1A P.O. Box 307 Charlestown, RI 08213	Charlie Hebert Gary M. Andres	(401) 364-9124 (401) 364-9124	Furnished.maps, local information, and Small arms projectiles.
U.S. Geological Survey EROS Data Center Sioux Falls, SD 57198	Customer Service	(606) 594-6151	Provided Aerial Photos.
U.S. Geological Survey ESIC and Information Center Bldg. 810 Denver Federal Center Denver, CO 80225	Customer Service	(303) 202-4200 (303) 202	Provided Topographical Maps and referals.
U.S. Geological Survey Earth Science Information Center (ESIC) 1400 Independence Road Rolla, Mo 65401	Staff	(573) 308-3500	No information.
Department of the Interior Geological Survey Reston, VA 22092	Dave Keys	(703) 648-5956	No information.
State Agencies			
Rhode Island Dept of Environmental Management Division of Parks & Recreation Ives Road Warwick, RI 02818	Larry Mouradjian	(401) 884-2010	No information.

REFERENCE SOURCES (CON'T)

The following organizations and personnel are acknowledged for their support

Organizations	Name	Telephone	Nature of Support
GOVERNMENT SOURCES			
State Agencies (cont)			
Rhode Island Department of Environmental Management Division of Parks & Recreation 2321 Hartford Avenue Johnston, RI 02919	Steve Wright	(401) 277-2632	Furnished referrals.
Rhode Island State Fire Marshall State Bomb Squad 24 Conway Avenue (Bldg #42) Quonset/Davisville Industrial Park North Kingston, RI 02852	Stan Davies	(401) 294-0861	No information.
Rhode Island Department of Environmental Management Divisions of Natural Heritage and Water Resources Providence, RI 02852	Carolyn Wemuth Alicia Good	(401) 277-3434 (401) 277-3961	No information.
Rhode Island Department of Enviornmental Management (State Office) 235 Promenade Street Providence, RI 02881-0803	Timothy Keeney	(401) 277-2771	No information.
State of Rhode Island and Providence Plantations Historical Preservation/Heritage Commission Old State House, 150 Benefit Street Providence, RI 02903-1209	Edward F. Sanderson	(401) 277-2678	No information.
Rhode Island State Library State House, Room 208 Providence, RI 02903	Staff	(401) 277-2473	No information.

REFERENCE SOURCES (CON'T)

The following organizations and personnel are acknowledged for their support

Organizations	Name	Telephone	Nature of Support
GOVERNMENT SOURCES			
State Agencies (cont)			
Rhode Island Army National Guard ATTN: TAGRI-PAO 1051 North Main Street Providence, RI	LT Gloria Haggerty	(401) 457-4150	No information.
Rhode Island Department of Environmental Management Division of Fish and Wildlife 4808 Tower Hill Road Wakefield, RI 02879	Staff	(401) 789-3094	Referral to state biologist.
Rhode Island Economic Development Corporation Quonset/Davisville Division 1330 Davisville Road (Bldg #404) North Kingston, RI 02852	Rick Sciola	(401) 277-3134	Furnished Maps, Drawings and Photos.
Rhode Island State Archives 337 Westminster Street Providence, RI 02906	Kenneth S. Carlson	Not Furnished	Internet Response No information.
Rhode Island Historical Society Library 121 Hope Street Providence, RI 02906	Rebecca Colesar	(401) 331-8575	No information.
Rhode Island Department of Environmental Management Division of Fish & Wildlife (Field Headquarters) Box 218 West Kingston, RI 02892	Chris Raithel	(401) 277-1267	Furnished endangered Species listing.

REFERENCE SOURCES (CON'T)

The following organizations and personnel are acknowledged for their support

Organizations	Name	Telephone	Nature of Support
GOVERNMENT SOURCES			
State Agencies (cont)			
Metropolitan District Commission (New England Coastal Fortifications) 20 Somerset Street Boston, MA 02108	Al Schroder	(617) 727-1188	No information.
University of Rhode Island Pell Marine Science Library Narragansett Bay Campus Narragansett, RI 08228	Roberta Doran	(401) 874-6161	Furnished a bibliography and copies taken from EIS performed by GSA.
Rhode Island Enviornmental Protection Agency Environmental Research Lab Library 27 Tarzwell Drive Narragansett, RI 02882-1198	Reference	(401) 782-3025	No information.
New Jersey National Guard 177th Fighter Squadron/HO Atlantic City International Airport Pleasantville, NJ 08232	TSGT Michael Stowe	(609) 645-6072	Referred to Mr. Larry Webster for information.
University of Rhode Island Library Reference Unit Kingston, RI 02881	Kenneth Morse	(401) 792 2653	No information.
Local Agencies			
Charlestown City Hall/Town of Charlestown 4540 South County Trail Charlestown, RI 02813	Lisa Dibillo Jode Bacon	(401) 364-1222 (401) 364-1200	Gathered real estate maps and documents.
Charlestown Police Department 4540 South County Trail Charlestown, RI 02813	Col Michael Brady	(401) 364-1212	No documentation on file Which pertains to planes or ordnance on site.

REFERENCE SOURCES (CON'T)

The following organizations and personnel are acknowledged for their support

Organizations	Name	Telephone	Nature of Support
	Government Sources		
Local Agencies (cont)			
Charlestown Fire Department Cross Mills, RI	Thomas Burdick	(401) 364-9725	No information.
Chamber of Commerce P.O. Box 633 4945 Old Post Road Charlestown, RI 02813	Paul Boiswert	(401) 364-3878	Furnished local maps and Directions.
	Non Government Sources		
National			
Knight-Ridder Information Inc 2440 El Camino Mountain View, CA 94040	Computer Search (DIALOG)	(800) 334-2564	No information.
Northern Illinois Library System 4034 East State Street Rockford, IL 61108	Computer Search (NILS)	(815) 229-0330	No information.
Online Computer Library Center 6565 Frantz Road Dublin, OH 43017-3395	Computer Search (OCLC)	(800) 848-5878	No information.
Scientific & Technical Information Library System 689 Discovery Drive Huntsville, AL 35806	Computer Search (STILAS)	(205) 922-9820	Background information on ARSs of former Rhode Island sites.

REFERENCE SOURCES (CON'T)

The following organizations and personnel are acknowledged for their support

Organizations	Name	Telephone	Nature of Support
	Non Government Sources		
National (cont)			
Walter K. Schroder 39 Seaside Drive Jamestown, RI 02835	Author	(401) 423-0806	No information.
Robert D. Zink 170 Fifth Avenue Oswego, NY 13126-1808	Author	(401) 342-2840	No information.
Local Individuals			
Millie Godden 4520 Old Post Road Charlestown, RI 02813	Local Resident and Former Real Estate Agent	(401) 364-6323	Furnished local insites And referrals.
Gen Glista P.O. Box 504 Charlestown, RI 02813	Local Resident	Unlisted	No information.
Larry Webster 1210 Wordens Pond Road P.O. Box 37 Shannock, RI 02813	Museum Curator	(401) 783-7616	Furnished photos, dump locations, and a practice bomb.
Quonset Point Air Museum Box 1571 (Hanger 488 at the State Airport) 488 Eccelston Road North Kingston, RI 02852	Stan Essex Farnum Brown	(401) 294-9540	No information.
Charlestown Historical Society Box 100 Charlestown, RI 02813-0100	Sherrill Reeves	(401) 364-7507	No information.

ORDNANCE AND EXPLOSIVE
ARCHIVES SEARCH REPORT
FOR
NAVAL AUXILIARY LANDING FIELD
CHARLESTOWN, RHODE ISLAND
PROJECT NUMBER D01RI000804

APPENDIX B

REFERENCES AND ABSTRACTS

APPENDIX B

REFERENCES AND ABSTRACTS

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NATIONAL CAPITAL REGION ARCHIVES FINDINGS

PART A

POSITIVE FINDINGS

NAVAL AUXILIARY LANDING FIELD, RI

SECTION II
NATIONAL CAPITAL REGION ARCHIVES FINDINGS
PART A
POSITIVE FINDINGS

NAVAL AUXILIARY LANDING FIELD, RI

Also Researched Under Charlestown, RI; Quonset Point Naval Air Station; Ninigret National Wildlife Refuge; and Rhode Island National Guard.

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NATIONAL CAPITAL REGION ARCHIVES FINDINGS

PART B

NEGATIVE FINDINGS

NAVAL AUXILIARY LANDING FIELD, RI

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PART B
NEGATIVE FINDINGS

NAVAL AUXILIARY LANDING FIELD, RI

Also Researched Under Charlestown, RI; Quonset Point Naval Air Station; Ninigret National Wildlife Refuge; and Rhode Island National Guard.

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Entry 344: State Decimal File, 1922 - 1945
Entry 348: State Guard, State File, 1941 - 1949

RG 197 (Records of the Civil Aeronautics Board)
Entry 56B: Records Relative to Legislation, 1946 - 1954

RG 207 (Records of the Housing and Home Finance Agency)
Entry 24: General National Housing Records, War Housing Program, 1942 - 1947

RG 218 (Records of Joint Chiefs of Staff)
Entry: Series 1942 - 1959 (Geographic Files)

RG 250 (Records of the Office of War Mobilization and Reconversion)
Entry 73: Federal Construction Projects, August - October 1946

RG 269 (General Records of the General Services Administration)
Entry: Real Property Disposal Case Files, 1945 - 1953

RG 270 (Records of the War Assets Administration)
Entry 3: Office of Information Subject File, 1946 - 1949

RG 291 (Records of the Federal Property Resource Service)
Entry 5: Real Property Case Files, 1949 - 1962

RG 428 (General Records of the Department of the Navy, 1947 -)
Entry 4: Formerly Security Classified DCNO 05 (Air) Chronological File ("Pinks"), January 1949 - June 1950
Entry 5: Formerly Security Chronological File, 1948 - 1950
Entry 6: Records of the Office of the Chief of Operations, Formerly Secret and Confidential OPNAV "Pinks" and Cross - Reference Sheets, 1950 - 1951

RG 429 (Records of the Organizations in the Executive Office of the President)
Entry 17: Records of the Federal Property Council

NARA - ARCHIVES II - CARTOGRAPHIC BRANCH
COLLEGE PARK, MD

RG 18 (Records of the Army Air Corps)
RG 30 (Records of the Bureau of Public Roads)
RG 71 (Records of the Bureau of Yards and Docks)
RG 74 (Records of the Bureau of Ordnance)
RG 80 (General Records of the Department of the Navy, 1798 - 1947)
RG 145 (Records of the Agricultural Stabilization and Conservation Service)
RG 373 (Records of the Defense Intelligence Agency

NARA - ARCHIVES II - MOTION PICTURE, SOUND, AND VIDEO BRANCH
COLLEGE PARK, MD

RG 80 (General Records of the Department of the Navy, 1798 - 1947)

NARA -ARCHIVES II - STILL PICTURES BRANCH
COLLEGE PARK,MD

RG 30 (Records of the Bureau of Public Roads)
RG 71 (Records of the Bureau of Yards and Docks)
RG 74 (Records of the Bureau of Ordnance)

NAVAL HISTORICAL CENTER - OPERATIONAL ARCHIVES
WASHINGTON, DC

Command Histories

SMITHSONIAN NATIONAL AIR AND SPACE MUSEUM
WASHINGTON, DC

Videodisk Collection

SECTION III
REGIONAL NATIONAL ARCHIVES FINDINGS
PART A
POSITIVE FINDINGS

CHARLESTOWN NAVAL AUXILIARY LANDING FIELD
CHARLESTOWN, RHODE ISLAND

NARA, NORTHEAST REGION (BOSTON)
WALTHAM, MA

RG 181, Records of the Naval Districts and Shore Establishments
- Box 1,2 Naval Air Rework Facility, Quonset Point, Command History Files NALF Charlestown
- Accession Number 57A-250
- Box 4, 1st ND PWO - Real Estate Files 1943-1944
  - Memo, 25 Oct 44, Subject: NAS, Quonset Point, RI, Additional B1B Barracks at NAAF Charlestown and NAA1, Westerly
  - Memo, 4 Sep 44, Subject: NAAF, Charlestown, RI - Storage Facilities and Service Roads
  - Memo, 11 Oct 44, Subject: NAS, Quonset, Point, RI, Camp Burlingame
  - Memo, 30 Aug 44, Subject: Transfer of Lease No. W1732 ENG 1354 covering Camp Burlingame, Charlestown, RI
  - Memo, 21 Jun 44, Subject: Camp Burlingame, Charlestown, RI, Temporary Acquisition of From the Army
  - Map, January 1938, Burlingame Reservation, Department of Agriculture and Conservation, Division of Forests Parks & Parkways
  - Memo, 12 April 44, Subject: NAAF Charlestown, RI - Additional Facilities for
  - Memo, Subject: Night Fighter Program - Plans for Accomplishing and Facilities for
  - Map, June 30, 1943, US Naval Auxiliary Air Facility, Charlestown, RI
  - Memo, May 1, 1943, Subject: Anti-aircraft Defense of Outlying Fields at Martha's Vineyard, Charlestown and Westerly w/endorsements
  - Memo, Oct 7, 1943, Subject: Construction of Additional Facilities at NAS Quonset Point and its Major Naval Auxiliary Air Facilities
  - Memo, 15 Sep 43, Subject: Estimate of Cost, Request for

- Accession Number 57-0255
  - Description of Property, 24 July, 1943
  - Declaration of Taking, 27 March 27, 1943
  - Map, Mar 27, 1943, Additional Land Taking at Charlestown, RI

SECTION III
REGIONAL NATIONAL ARCHIVES FINDINGS
PART B
NEGATIVE FINDINGS

CHARLESTOWN NAVAL AUXILIARY LANDING FIELD
CHARLESTOWN, RHODE ISLAND

NARA, NORTHEAST REGION (BOSTON)
WALTHAM, MA

RG 71, Records of the Bureau of Yards and Docks
All Entries
Nothing Found

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

RG 181, Records of the Naval Districts and Shore Establishments
Boxes 2 and 3
1st ND Aviation Officer Correspondence, 1944-1945
Nothing Found

Accession Number 57A-250
Boxes 5 and 6
Nothing Found

Accession Number 057-254
Boxes 5 and 8
Nothing Found

Accession Number 057-255
Box 2
Nothing Found

Box 498
Nothing Found

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

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

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

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

RG 392, Records of the U.S. Army Coast Artillery Districts and Defenses
All Entries
Nothing Found

NARA, NATIONAL PERSONNEL RECORDS CENTER ST. LOUIS, MO

All Record Groups
All Entries
Nothing Found

ORDNANCE AND EXPLOSIVE
ARCHIVES SEARCH REPORT
FOR
NAVAL AUXILIARY LANDING FIELD
CHARLESTOWN, RHODE ISLAND
PROJECT NUMBER D01RI000804

APPENDIX C

GLOSSARY

APPENDIX C

Glossary

AA	Anti-aircraft
ALF	Auxiliary Landing Field
ASR	Archives Search Report
ATTN	Attention
BD/DR	Building Demolition/Debris Removal
BLM	Bureau of Land Management
BOQ	Bachelor Officer Quarters
BUAER	Bureau of Aeronautics
CADD	Computer Aided Design
CEHNC	US Army Corps of Engineers, Engineering and Support Center
CEMVR	US Army Engineer, Mississippi Valley Rock Island
CENED	US Army Engineer, New England Division
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CON	Container
CNALF	Charlestown Naval Auxiliary Landing Field
CNO	Chief of Naval Operations
CMDR	Commander
CWM	Chemical Warfare Material
DA	Department of Army
DAC	Defense Ammunition Center
DDESB	Department of Defense Explosive Safety Board
DEIS	Draft Environmental Impact Statement
DERA	Defense Environmental Restoration Account
DERP	Defense Environmental Restoration Program
DET	Detachment
DOD	Department of Defense
DOI	Department of Interior
E	East
EE/CA	Engineering Evaluation/Cost Analysis
EIS	Environmental Impact Statement
ELF	Extremely Low Frequency
EOD	Explosive Ordnance Disposal
ESI	Expanded Sit Investigation
FDE	Findings and Determination of Eligibility
FEIS	Final Environmental Impact Statement
FUDS	Formerly Used Defense Site(s)
GP	General Purpose
GSA	General Services Administration
HE	High Explosive
HTRW	Hazardous, Toxic and Radiological Waste
HTW	Hazardous and Toxic Waste
INPR	Inventory Project Report
IRP	Installation Restoration Program

IT	International Technology Corporation
LT	Lieutenant
LTA	Lighter Than Air
MM	Millimeter
N	North
NAAF	Naval Auxiliary Air Field
NAAS	Naval Auxiliary Air Station
NAF	Naval Air Facility
NALF	Naval Auxiliary Landing Field
NAMC	Naval Air Material Center
NAMU	Naval Air Modification Unit
NAS	Naval Air Station
NATTC	Naval Air Technical Training Center
NAOTS	Naval Aviation Ordnance Test Station
NE	Northeast
RIHPC	Rhode Island Historic Preservation Commission
NO	Number
NW	Northwest
OE	Ordnance and Explosives
ORD	Ordnance
OS	Ordnance School
PA	Preliminary Assessment
PAL	Public Archaeology Laboratory, Inc.
PBR	Precision Bombing Range
PN	Project Number
PRP	Privately Responsible Party
QASAS	Quality Assurance Specialist (Ammunition Surveillance)
RA	Remedial Action
RAC	Risk Assessment Code
RG	Record Group
RIAHA	Rhode Island Aviation Heritage Association
RICE	Rhode Island Committee on Energy
RIHPC	Rhode Island Historical Preservation Commission
SCS	Soil Conservation Service
SE	Southeast
SGT	Sergeant
SHPO	State Historical Preservation Office
SI	Site Investigation or Site Inspection
SIOAC-ES	US Army Technical Center for Explosive Safety
SW	Southwest
TM	Technical Manual
USA	United States Army
USACE	United States Corp of Engineers
USADACS	U.S. Army Defense Ammunition Center and School
USATCES	U.S. Army Technical Center for Explosives Safety
USDA	United States Department of Agriculture
USGS	United States Geological Survey
VC	Composite Squadron
VD	Photographic Squadron

VF	Fighter Squadron
VFA	Fighter Attack Squadron
VN	Training Squadron
VP	Patrol Squadron
VPB	Patrol Bomber Squadron
VQ	Electronic Countermeasures Squadron
VT	Torpedo and Bombing Squadron
UXO	Unexploded Ordnance
WAA	War Assets Administration
WD	War Department
WOQ	Women's Officer Quarters
WWII	World War 2

ORDNANCE AND EXPLOSIVE
ARCHIVES SEARCH REPORT
FOR
NAVAL AUXILIARY LANDING FIELD
CHARLESTOWN, RHODE ISLAND
PROJECT NUMBER D01RI000804

APPENDIX D

TEXTS/MANUALS

APPENDIX D

TEXTS/MANUALS

Table of Contents

D-1. Extracts from TM 9-1900, Ammunition General, TM 9-1904, Ammunition Inspection Guide, TM 9-1990 Small Arms Ammunition, and TM 9-2200, Small Arms, Light Field Mortars, and 20-MM Aircraft Guns (B-5, B-12, B-15, and B-80).

D-2. Extracts from TM 9-1901, Artillery Ammunition (B-6).

D-3. Extracts from OP-2216, Volume 1, Aircraft Bombs, Fuzes and Associated Components, TM 9-1900, Ammunition General (B-5, B-20, and B-86).

D-4. Extracts from OP-1157, Rocket Ammunition (B-78, B-79 and B-88).

D-5. Extract from A Brief History of U.S. Navy Torpedo Development (Reference B-87).

SECTION II

CARTRIDGE, ARMOR-PIERCING, CALIBER .30, M2

	Paragraph
Description	47
Exterior ballistics	48

47. Description.—*a. General.*—This cartridge (fig. 19) is a current standard item of issue and is fired from machine guns and rifles. It is designed for use against armored aircraft, armored vehicles, concrete shelters, and similar bullet-resisting targets.

b. Visual identification.—This cartridge may be identified by the additional cannelure and the blackened tip of the bullet.

c. Components.—The cartridge consists of a cartridge case, primer, propelling charge, and bullet. The complete assembly weighs approximately 414 grains.

(1) The cartridge case, primer, and propelling charge for this cartridge are described in section II, chapter 1.

(2) The bullet (fig. 17) consists of four parts: a gilding metal jacket, a hardened steel core, a lead "T" shot point filler, and a gilding metal base filler. The over-all length of this bullet is 1.370 inches and its point is blackened for a distance of approximately 9/32 inch. The base is boat-tailed (has a 5° taper beginning at a point approximately 0.093 inch from the base line). The mouth of the case is crimped into the cut cannelure at assembly, and a minimum pull of 45 pounds is required to remove the bullet from the case.

48. Exterior ballistics.—*a. Maximum range.*—Approximately 3,500 yards.

b. Average maximum pressure.—50,000 pounds per square inch.

c. Velocity.—(1) At 78 feet, 2,715 feet per second.

(2) At 53 feet, 2,730 feet per second.

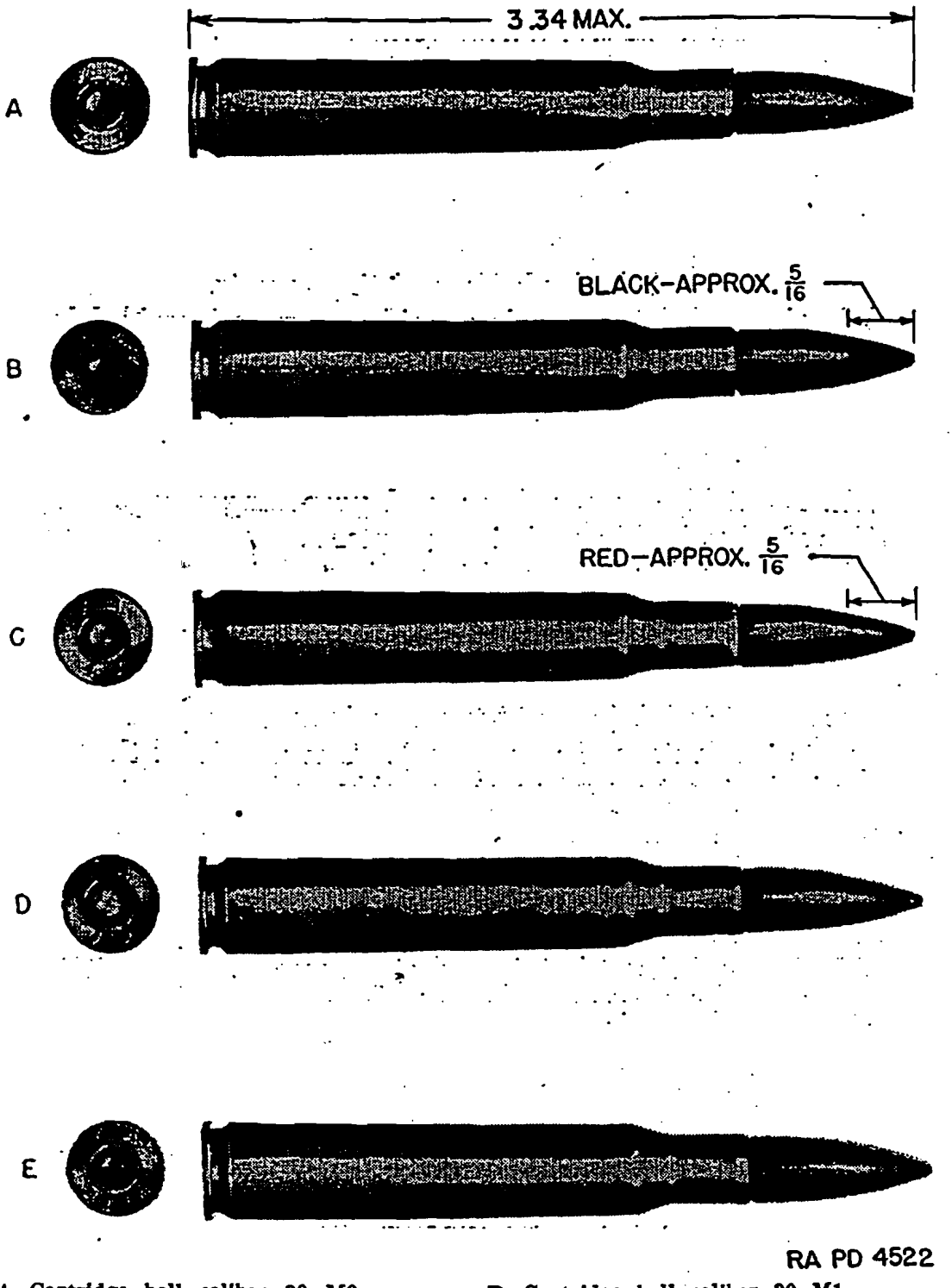
(3) Muzzle, 2,775 feet per second.

d. Muzzle energy.—2,780 foot pounds.

e. Accuracy.—Average of mean radii of all targets at 500 yards, not greater than 9.0 inches; at 600 yards, not greater than 10.0 inches.

f. Table of fire.

Range	Angle of elevation	Time of flight	Maximum ordinate	Angle of fall
Yards	*Mils*	*Seconds*	*Yards*	*Mils*
0	0	0	0	0
200	1.5	.24	.1	1.7
400	3.4	.52	.4	4.3
600	5.8	.87	1.0	8.8
800	9.1	1.30	2.3	16.0
1,000	13.7	1.82	4.5	26.7



A. Cartridge, ball, caliber .30, M2.
B. Cartridge, armor-piercing, caliber .30, M2.
C. Cartridge, tracer, caliber .30, M1.
D. Cartridge, ball, caliber .30, M1.
E. Cartridge, ball, caliber .30, M2, national match.

FIGURE 19.—Armor-piercing, ball, and tracer cartridges, caliber .30.

SECTION III

CARTRIDGE, BALL, CALIBER .30, M1

	Paragraph
Description	49
Exterior ballistics	50

49. Description.—*a. General.*—This cartridge (fig. 19) is a limited standard item of issue and is used in the same weapons and for the same purposes as the cartridge, ball, caliber .30, M2.

b. Visual identification.—This cartridge cannot be readily distinguished from the M2 ball cartridge of late manufacture except by weight and date.

c. Components.—The cartridge consists of a cartridge case, primer, propelling charge, and bullet. The complete assembly weighs approximately 420 grains.

(1) The cartridge case, primer, and propelling charge for this cartridge are described in section II, chapter 1.

(2) The bullet (fig. 17) consists of two parts, a lead alloy core, composed of 90 percent lead and 10 percent antimony, and a gilding metal jacket. An alternative bullet having a gilding metal jacket and a core composed of 97½ percent lead and 2½ percent antimony may also be used. The base of either bullet has a 9° taper, called a boattail. The over-all length of the M1 bullet is 1.32 inches, and that of the M1 alternative bullet, 1.265 inches. The mouth of the cartridge case is crimped into the knurled cannelure at assembly and a minimum pull of 45 pounds is required to remove the bullet from the case.

50. Exterior ballistics.—*a. Maximum range.*—5,500 yards (approximate).

b. Average maximum pressure.—48,000 pounds per square inch.

c. Velocity.—(1) At 78 feet, 2,600 feet per second.

(2) At 53 feet from muzzle, 2,620 feet per second.

(3) Muzzle, 2,647 feet per second.

d. Muzzle energy.—2,675 foot-pounds.

e. Accuracy.—Average of mean radii of all targets at 500 yards, not greater than 4.5 inches; at 600 yards, 5.5 inches, when fired from a Mann accuracy weapon. Dispersions obtained from firings under service condition at all ranges are published in firing tables for the weapons in which this ammunition is used.

f. Penetration.—Firings of caliber .30, M1, ball ammunition, into various materials resulted in the penetrations shown in the table below:

Material	Penetration in inches					
	200 yards		600 yards		1,500 yards [1]	
	Average	Maximum [2]	Average	Maximum [2]	Average	Maximum [2]
¼-inch armor plate [3]	0.1	--------	0	--------	0	--------
Gravel	7.0	8.0	4.5	5.0	4.1	5.5
Brick masonry [4]	4.3	6.5	[5] 2.2	[5] 3.6	1.5	1.9
Concrete	4.0	--------	1.0	--------	0.5	--------
Solid oak	13.8	18.0	12.0	13.6	2.1	3.8
Dry sand [6]	6.5	8.2	7.1	8.5	8.2	9.0
Moist sand [6]	7.3	9.2	9.6	11.2	8.7	9.5
Loam	24.1	24.5	24.0	25.0	22.7	26.2
Greasy clay	24.6	29.0	22.0	23.0	14.2	15.0
Loose earth	[7] 19.0	--------	15.8	--------	--------	--------

[1] Fired over 78-foot range with reduced charge to simulate remaining velocity at 1,500 yards.
[2] Maximum penetration for a single shot.
[3] Penetration shown is average for single shots. A recent test showed that the first shot weakened the structure of the plate so that succeeding shots in the same place effected appreciable penetration.
[4] Penetrations given in table are for single shots striking brick only. A bullet striking only mortar has penetrated 18.84 inches with a velocity corresponding to a range of 1,500 yards. A series of 6 shots, fired under these conditions at the same point, penetrated 6.72 inches of brick, and a seventh struck mortar, penetrating to 14.52 inches. A succession of 5 shots, with a charge to simulate 600 yards range, penetrated brick masonry to 9.36 inches.
[5] Fired over 78-foot range with reduced charge to simulate remaining velocity at 600 yards.
[6] Penetration at 600 yards is often greater than at 200 yards, due to the larger yaw of the bullet at 200 yards.
[7] Average penetration at 400 yards.

g. Table of fire.

Range	Angle of elevation	Time of flight	Maximum ordinate	Angle of fall
Yards	*Mils*	*Seconds*	*Yards*	*Mils*
0	----------	----------	----------	----------
100	0.8	0.12	----------	0.8
200	1.6	.25	0.1	1.8
300	2.5	.39	.2	3.0
400	3.5	.54	.39	4.4
500	4.7	.70	.67	6.0
600	6.0	.88	1.03	8.1
700	7.5	1.07	1.52	10.6
800	9.1	1.27	2.15	13.7
900	10.9	1.50	3.00	17.5
1,000	12.9	1.75	4.1	22.0

Based on muzzle velocity of 2,600 feet per second.
Data from FT 0.30-C-4.

SECTION IV

CARTRIDGE, BALL, CALIBER .30, M2

Paragraph
Description ---------- 51
Exterior ballistics ---------- 52

51. Description.—*a. General.*—This cartridge (figs. 1, 2, and 19) is a current standard item of issue and is used in machine guns and rifles against personnel and light matériel targets.

b. Visual identification.—Cartridges of recent manufacture cannot be readily distinguished from the M1 cartridges by visual inspection, although this can be done by weight and date. Cartridges manufactured prior to September 20, 1940, could be readily distinguished from the M1 cartridges by their tin-coated, gilding metal bullet jackets.

c. Components.—The cartridge consists of a cartridge case, primer, propelling charge, and bullet. The complete assembly weighs approximately 396 grains.

(1) The cartridge case, primer, and propelling charge for this cartridge are described in section II, chapter 1.

(2) The bullet (fig. 17) consists of two parts, a lead alloy core, composed of 90 percent lead and 10 percent antimony, and a gilding metal jacket. An alternative bullet having a gilding metal jacket, and a core composed of 97½ percent lead and 2½ percent antimony may also be used. The base of the bullet retains its cylindrical shape to the base line. The over-all length of the M2 bullet is 1.125 inches, and that of the M2 alternative bullet, 1.103 inches.

52. Exterior ballistics.—*a. Maximum range.*—Approximately 3,500 yards.

b. Average maximum pressure.—50,000 pounds per square inch.

c. Velocity.—(1) At 78 feet, 2,740 feet per second.

(2) At 53 feet, 2,755 feet per second.

(3) Muzzle, 2,805 feet per second.

d. Accuracy.—From accuracy rifle—average of mean radii of all targets at 500 yards not greater than 6.5 inches; at 600 yards not greater than 7.5 inches.

e. Table of fire.

Range	Angle of elevation	Time of flight	Maximum ordinate	Angle of fall
Yards	*Mils*	*Seconds*	*Yards*	*Mils*
100	0. 7	0. 12	0	1
200	1. 5	. 25	. 1	2
300	2. 4	. 38	. 2	3
400	3. 4	. 53	. 4	4
500	4. 6	. 70	. 6	6
600	6. 0	. 89	1. 0	9
700	7. 7	1. 11	1. 7	12
800	9. 6	1. 35	2. 4	17
900	11. 9	1. 62	3. 6	22
1, 000	14. 6	1. 91	5. 1	28

Based on muzzle velocity of 2,700 feet per second.
Data from FT 0.30-A-4.

SECTION V

CARTRIDGE, TRACER, CALIBER .30, M1

	Paragraph
Description	53
Exterior ballistics	54

53. Description.—*a. General.*—This cartridge (fig. 19) is a standard item of issue and is used in both machine guns and rifles. It is intended for use with other ammunition to show the gunner, by its trace, the path of the bullets. While tracer cartridges were primarily intended for machine-gun use, there are cases wherein they can be advantageously used in rifles; for example, for signal and incendiary purposes, target designation, and range estimation.

b. Visual identification.—The cartridge is readily identified by its characteristic red bullet point, red indicating the color of the trace.

c. Components.—The cartridge consists of a cartridge case, primer, propelling charge, and bullet. The complete assembly weighs approximately 396 grains.

(1) The cartridge case, primer, and propelling charge for this cartridge are described in section II, chapter 1.

(2) The bullet (fig. 17) consists of three parts: a gilding metal jacket, a lead alloy slug, and a tracer composition. The over-all length of this bullet is 1.45 inches and point is painted red for a distance of approximately 5/16 inch. It has a square base which contains an inflammable substance which is ignited by the propelling charge when the cartridge is fired. The tracer composition burns with a bright red flame which enables the course of the bullet to be followed by the gunner. The mouth of the cartridge case is crimped into the knurled cannelure at assembly and a minimum pull of 45 pounds is required to remove the bullet from the case.

54. Exterior ballistics.—*a. Maximum range.*—(1) *Bullet.*—Approximately 3,450 yards.

(2) *Range of trace.*—Trace begins at a distance not greater than 125 yards from weapon and bullets continue tracing to 750 yards from weapon.

b. Average maximum pressure.—50,000 pounds per square inch.

c. Velocity.—(1) At 78 feet, 2,650 feet per second.

(2) At muzzle, 2,715 feet per second.

d. Accuracy.—Average of mean radii of all targets at 600 yards less than 15 inches.

e. Trajectory.—This ammunition is designed so that the bullet's trajectory will cross the trajectory of ball, M2, and AP, M2, ammunition of the same caliber at approximately 600 yards.

AMMUNITION INSPECTION GUIDE

A-BASE FILLER-GILDING METAL
B-COMPOSITION, IGNITER
C-COMPOSITION, TRACER
D-CORE-TUNGSTEN CHROME STEEL
E-JACKET-GILDING METAL
F-POINT FILLER-LEAD "T" SHOT
G-SLUG-LEAD WITH ANTIMONY

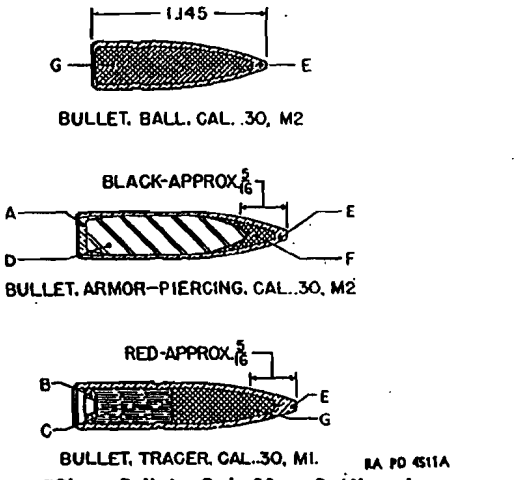


Figure 78b — Bullets, Cal. .30 — Sectioned

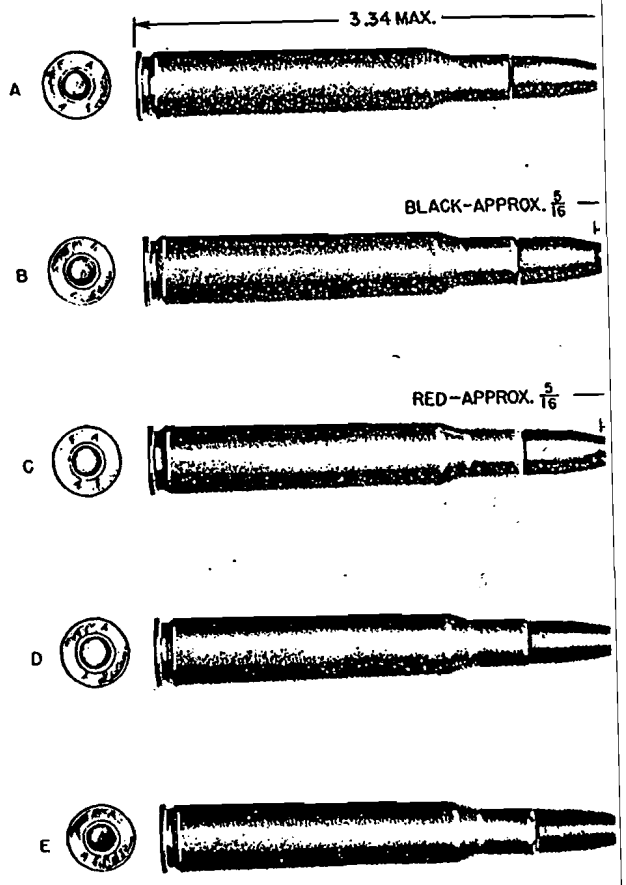
Visual identification. The cartridge resembles the CARTRIDGE, ball, cal. .30, M2, in outward appearance, but it may be identified by the light blue paint on the tip of the bullet.

Components. The cartridge consists of a cartridge case, primer, propelling charge, and bullet.

The bullet consists of four parts: a gilding metal jacket, a hollow steel cylindrical core, an incendiary composition, and a lead base filler. The mouth of the cartridge case is crimped into the knurled cannelure at assembly and a minimum pull of 45 pounds is required to remove the bullet from the case.

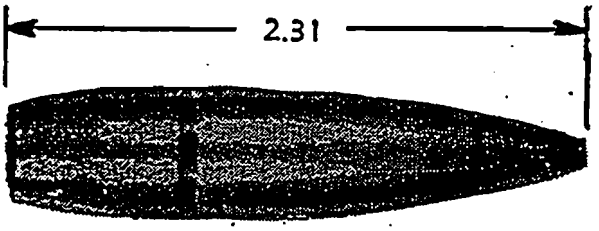
CARTRIDGE, Rifle Grenade, Cal. .30, M3.

General. This cartridge is used in cal. .30 Rifles, M1, M1903, M1903A1, and M1917, for discharging antitank rifle grenades. This

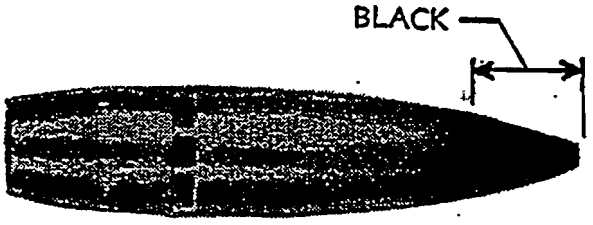


A-CARTRIDGE, ARMOR-PIERCING, CAL..30, M2
B-CARTRIDGE, BALL, CAL..30, M2
C-CARTRIDGE, TRACER, CAL..30, M1
D-CARTRIDGE, BALL, CAL..30, M1
E-CARTRIDGE, BALL, CAL..30, M2, NATIONAL MATCH
RA PD 45

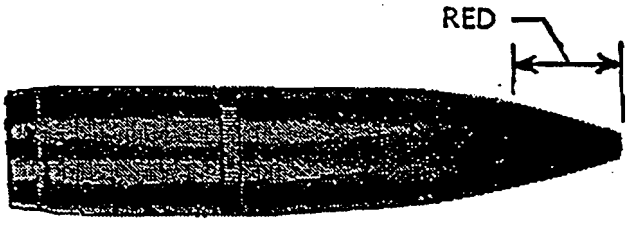
Figure 79a — Cartridges, Cal. .30



BULLET, BALL, CAL. .50, M2



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



BULLET, TRACER, CAL. .50, M1

RA PD 4526

FIGURE 22.—Bullets, caliber .50.

A-COMPOSITION, IGNITER
B-COMPOSITION, SUB-IGNITER
C-COMPOSITION, TRACER
D-CORE-STEEL
E-CORE-TUNGSTEN CHROME STEEL
F-JACKET-GILDING METAL
G-POINT FILLER-LEAD WITH ANTIMONY
H-SLUG-LEAD WITH ANTIMONY

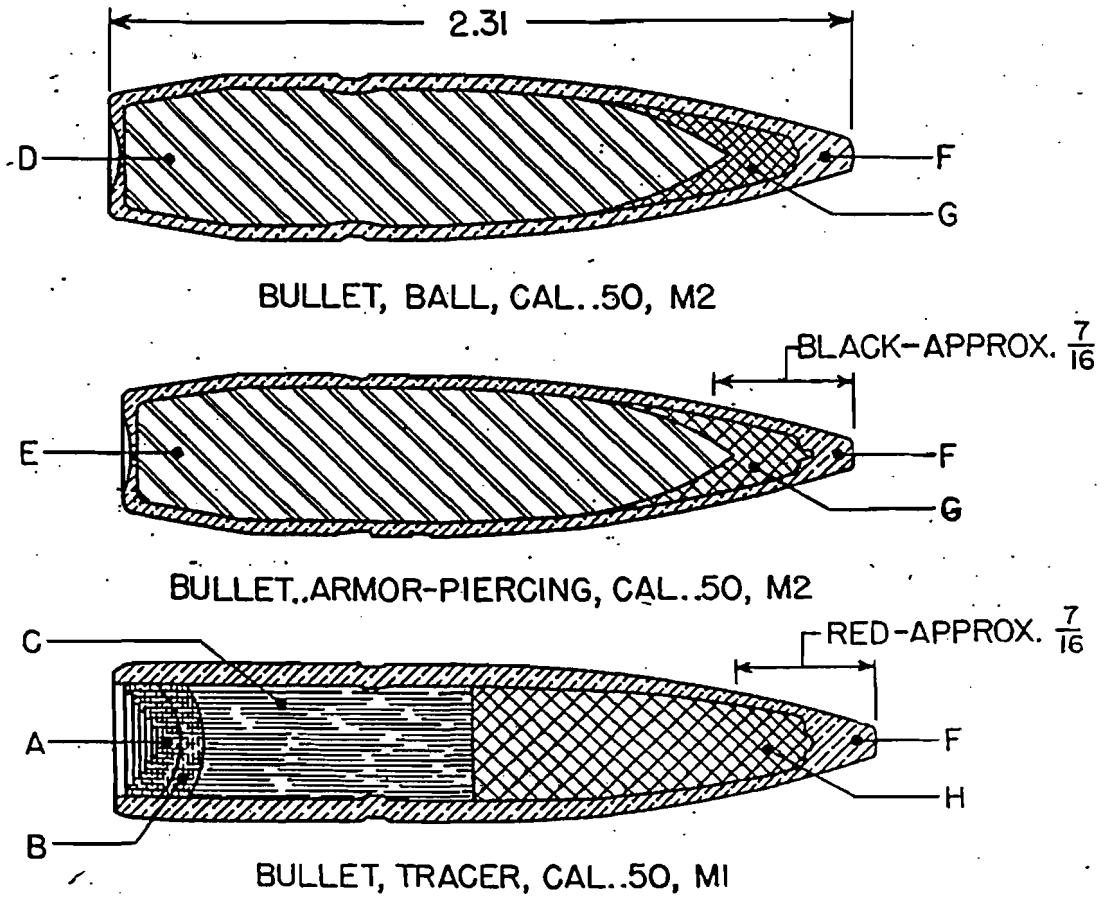


Figure 82b — Bullets, Cal. .50 — Sectioned

SECTION II

CARTRIDGE, BALL, CALIBER .45, M1911

	Paragraph
Description	71
Exterior ballistics	72

71. Description.—*a. General.*—This cartridge (fig. 21) is a current standard item of issue and is used in the automatic pistol, M1911 and M1911A1, the Colt revolver M1917, the Smith and Wesson revolver M1917, and the Thompson submachine gun M1928 and M1928A1, against personnel. To adapt it for use in the revolvers, it must be assembled in clips designed for this purpose. These clips are described in paragraph 12.

b. Components.—(1) The cartridge consists of the cartridge case, primer, propelling charge, and the bullet. The complete assembly weighs approximately 327 grains.

(2) The case, primer, and propelling charge for this cartridge are described in section II, chapter 1.

(3) The bullet has a round nose and a flat base. It consists of two parts, a gilding metal jacket and slug of lead hardened with antimony. In early designs bullet jackets were made of cupro-nickel and these have a silvery appearance. This was later changed to gilding metal which was given thin tin wash which has a close resemblance to the cupro-nickel jacket. The practice of tinning the jackets has since been discontinued and the bullets of current design have the natural copper color of gilding metal. The over-all length of the bullet is 0.68 inch. The mouth of the case may be crimped to the bullet and a pull of approximately 40 pounds is required to remove the bullet from the case.

72. Exterior ballistics.—*a. Maximum range.*—(1) In pistol, 1,600 yards.

(2) In submachine gun, 1,700 yards.

b. Pressure.—14,000 pounds per square inch.

c. Velocity.—(1) *Pistol.*—(*a*) 25.5 feet, 820 feet per second.

(*b*) Muzzle, 825 feet per second.

(2) *Submachine gun.*—(*a*) At 25.5 feet, 885 feet per second.

(*b*) At muzzle, 990 feet per second.

d. Muzzle energy.—(1) 329 foot-pounds in pistol.

(2) 383 foot-pounds in submachine gun.

e. Accuracy with muzzle test.

Mean variations for several targets

Range	Mean radii
Yards	*Inches*
25	0.86
50	1.36
75	2.24

f. Penetration.—In white pine.

Range	Depth
Yards	*Inches*
25	6.0
100	5.5
250	4.0

The penetration in moist loam at 25 yards is about 10 inches. The penetration in dry sand at 25 yards is about 8 inches.

g. Table of fire.

Range	Time of flight	Drop	Deflection due to drift [1]
Yards	*Seconds*	*Inches*	*Inches*
10	0.037	0.3	0.1
20	.75	1.1	.2
30	.113	2.4	.3
40	.151	4.4	.4
60	.229	9.9	.8
80	.308	18	1.3
100	.388	28	2.0

[1] Drift is to the left. Based on a velocity of 800 feet per second, 25 feet from muzzle.

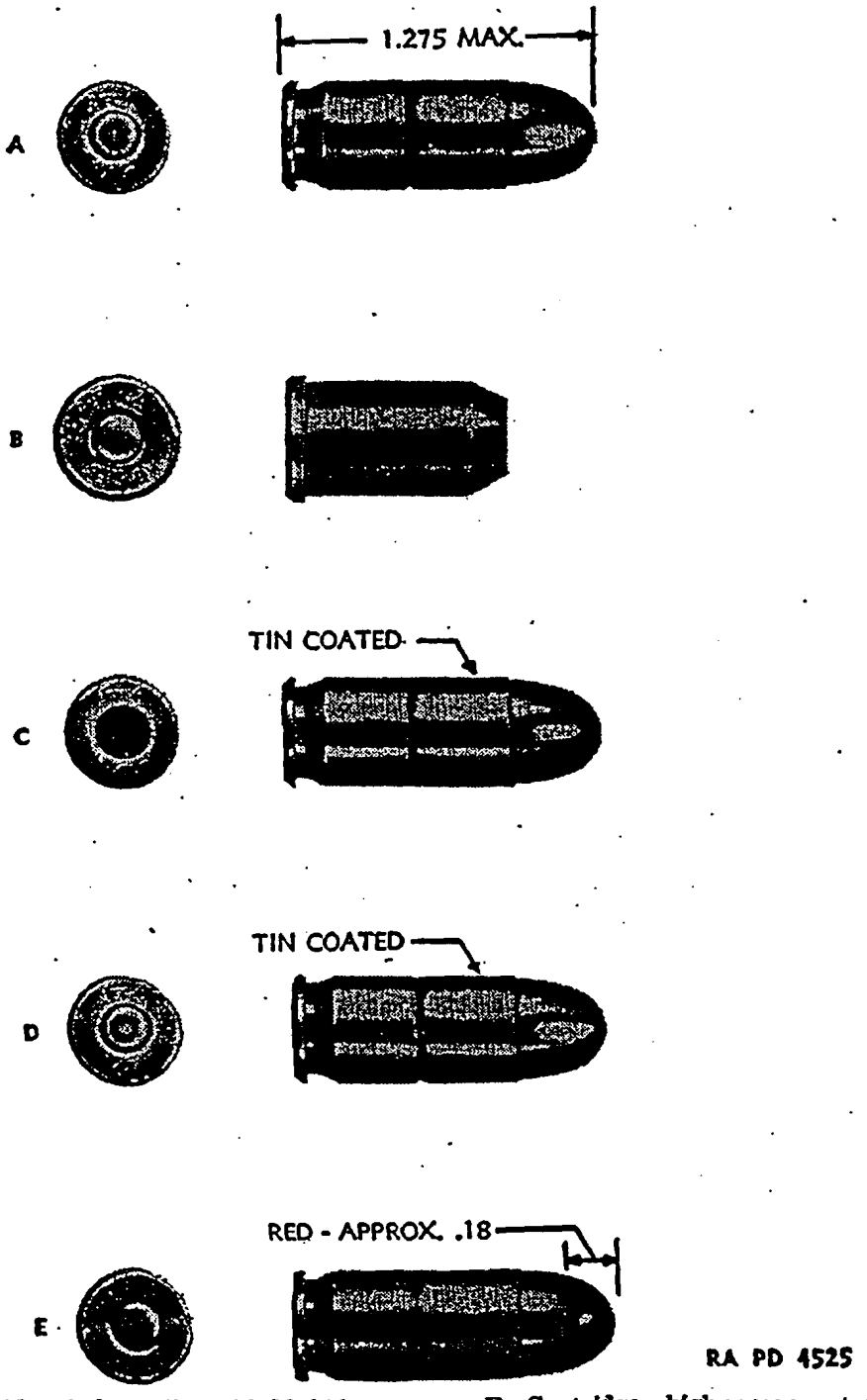
SECTION III

CARTRIDGE, TRACER, CALIBER .45, M1

Paragraph
Description 73
Exterior ballistics 74

73. Description.—*a. General.*—This cartridge (fig. 21) is a current standard item of issue for use in the Thompson submachine gun, M1928A1, for observation of fire, and incendiary purposes. It may, however, also be used for signal purposes in the automatic pistol.

b. Visual identification.—The cartridge is readily identified by its red-tipped bullet, and the fact that the cartridge case has no cannelure.

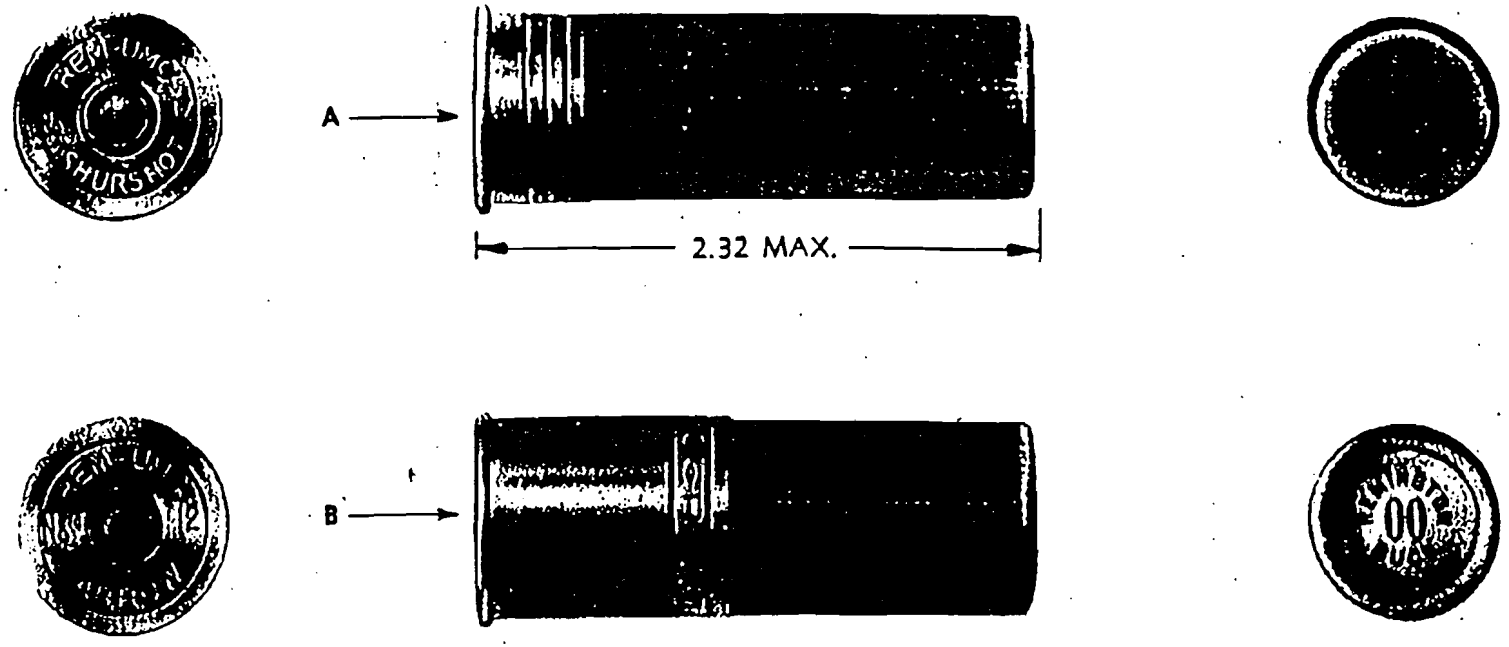


A. Cartridge, ball, caliber .45, M1911.
B. Cartridge, blank, revolver, caliber .45, M1.
C. Cartridge, dummy, caliber .45, M1921.
D. Cartridge, high-pressure test, caliber .45, M1.
E. Cartridge, tracer, caliber .45, M1.

FIGURE 21.—Cartridges, caliber .45.

c. Components.—The cartridge consists of the cartridge case, primer, propelling charge, and bullet. The complete assembly weighs approximately 303 grains.

(1) The cartridge case, primer, and propelling charge for this cartridge are described in section II, chapter 1.



A — SHELL, SHOTGUN, 12-GAGE, PAPER, LOADED WITH SMOKELESS POWDER AND NO. 7-1/2 CHILLED SHOT
B — SHELL, SHOTGUN, 12-GAGE, PAPER, LOADED WITH SMOKELESS POWDER AND NO. 00 BUCKSHOT

RA PD 7218

Figure 114—Shells Shotgun, 12-Gage

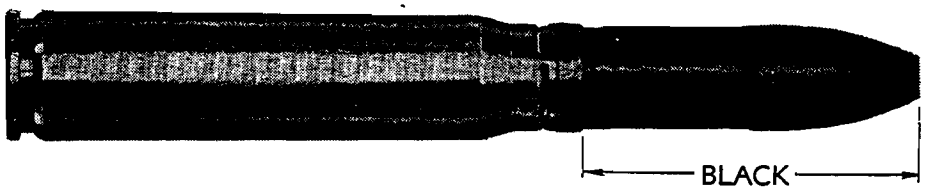
AMMUNITION

121. SHELL, SHOTGUN, 12-GAGE.

a. Weight:	Guard or Combat Load	Trap or Skeet Load
Complete shell	(Approx.) 800 grains	(Approx.) 750 grains
Bulk powder charge	(Equivalent) 3 drams	(Equivalent) 3 drams
Shot charge	1⅛ oz	1⅛ oz
Shot pellets	119 per lb	407 per oz
b. Length:		
Over-all	(Approx.) 2.5 in.	(Approx.) 2.5 in.
c. Diameter:		
Mouth of case	0.797 in.	0.797 in.
Rim of case	0.880 in.	0.880 in.
Pellets	0.340 in.	0.09 in.
d. Miscellaneous:		
Shot sizes	No. 00	No. 8 chilled
Approximate number of shot	9	458
Average velocities over a range of 40 yards fired from a 30-inch full-choke barrel	1,070 ± 30 ft per sec	855 ± 40 ft per sec
Patterns in percentage of shot in a 30 inch-diameter circle at 40 yards	33⅓ per cent in a 20-in. cylinder bore, riot-type barrel.	Trap: 65 per cent in a 30-in. full-choke barrel; skeet: 40 per cent in a 26-in. cylinder-bore barrel.
Maximum range	748 yd	198 yd
Normal pressure	11,000 lb per sq in.	11,000 lb per sq in.

References

SNL T-3
Specification No. 50-5-1B
TM 9-285
TM 9-1900
TM 9-1990



RA PD 80696

Figure 26 — CARTRIDGE, Ball, 20-mm Guns, M1, AN-M2, M3, and Br. H.S./A/

23. CARTRIDGE, BALL, 20-MM GUNS, M1, AN-M2, M3, AND BR. H.S./A/ (fig. 26), is for service firing against personnel and light materiel targets, for practice, and for proof-firing. The projectile is similar in shape and ballistic properties to the HE-I projectile, but is hollow and contains no explosive or tracer. It is rolled from steel bar stock. A steel closing disk with a 45-degree chamfer is fitted into the recesses in the base of projectile.

DATA

Weight of complete round	0.56 lb	Width of rotating band	0.203 in.
Length of complete round	7.23 in.	Type of base	Square
Length of projectile	3.31 in.	Radius of ogive	3.27 cal.
Length of cartridge case	4.34 in.	Muzzle velocity	2,850 ft per sec
Maximum range	6,000 yd		

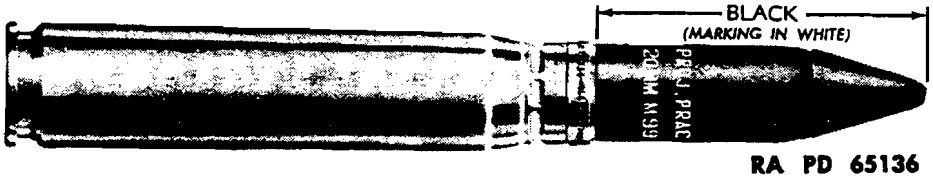


Figure 30 — CARTRIDGE, Practice, T24 (M99), 20-mm Guns, M1, AN-M2, M3, and Br. H.S./A/

27. CARTRIDGE, PRACTICE, T24 (M99), 20-MM GUNS, M1, AN-M2, M3, AND BR. H.S./A/ (fig. 30), is for practice firing. The projectile is similar in shape and ballistic properties to the T18 (M96) Incendiary Projectile but is hollow and contains no explosive. The nose consists of a zinc die casting as in the T18 (M96) Incendiary but its weight is adjusted to give the projectile a weight of 2,000 grains (0.29 lb). The projectile body is made of cold-drawn steel.

DATA

Weight of complete round	0.57 lb	Width of rotating band	0.203 in.
Length of complete round	7.22 in.	Type of base	Square
Length of projectile	3.27 in.	Radius of ogive	2.54 cal.
Length of cartridge case	4.34 in.	Muzzle velocity	2,800 ft per sec

Maximum range ..... 5,750 yd

TABLE 8

COMPLETE ROUND TABLE FOR AMMUNITION FOR 20-MM GUNS

(This table is not to be confused with official Complete Round Charts, Form No. 5981.)

Note References	Designation of Cannon	PROJECTILE						FUZE		Cartridge Case[1]	PROPELLING CHARGE		PRIMER	
		Kind	Type	Model	Filler		Weight as Fired (Lb.)	Type and Model	Action		Kind	Weight (Lb.)	Model	Type
					Kind	Weight (Lb.)								
Service Ammunition														
—	A	CARTRIDGE	HE-I	Mk. I	Tetryl[2]	0.025	0.29	P.D., Mk. II or III	S.Q.	M21A1	FNH, I.M.R. 4879	0.07	M36	2.1-gr. perc.
—	A	CARTRIDGE	AP-T	M75	None	—	0.37	None	—	M21A1	FNH, I.M.R. 4879	0.07	M36	2.1-gr. perc.
—	A	CARTRIDGE	AP-T	T9E5(M95)	None	—	0.29	None	—	M21A1	FNH, I.M.R. 4879	0.07	M36A1	2.1-gr. perc.
—	A	CARTRIDGE	HE-I	T23 (M97)	Tetryl[2]	0.017	0.29	P.D., T71E4 (M75)	S.Q.	M21A1	FNH, I.M.R. 4879	0.07	M36A1	2.1-gr. perc.
—	A	CARTRIDGE	Incendiary	T18 (M96)	Incendiary mixture	0.020	0.27	None	—	M21A1	FNH, I.M.R. 4879	0.07	M36A1	2.1-gr. perc.
Practice Ammunition														
—	A	CARTRIDGE	Ball	—	None	—	0.28	None	—	M21A1	FNH, I.M.R. 4879	0.07	M36	2.1-gr. perc.
—	A	CARTRIDGE	Practice	T24 (M99)	None	—	0.29	None	—	M21A1	FNH, I.M.R. 4879	0.07	M36A1	2.1-gr. perc.
Drill Ammunition														
—	A	CARTRIDGE	Drill	M18A1	None	—	—	None	—	—	None	—	None	—
—	A	CARTRIDGE	Drill	M18	None	—	—	None	—	—	None	—	None	—

AP-T—armor-piercing-tracer
FNH—flashless nonhygroscopic
gr.—grain
HE-I—high-explosive-incendiary
P.D.—point-detonating
perc.—percussion
S.Q.—superquick

A—20-mm guns, M1, AN-M2, M3, and Br. H.S./A/ (Aircraft).

[1]—M21A1 (brass) is standard cartridge case. Rounds may also be assembled with steel cartridge case, M21A1B1, weighing 0.017 lb. less than brass case and are restricted to ground and training use only within continental U. S.

[2]—Plus incendiary composition.

Section IX. PRACTICE BOMBS

2-47. Practice Bombs

Practice bombs are used for target practice and the training of bombing crews, and are designed to simulate service bombs. Practice bombs have various methods of spotting their points of impact. One type provides a colored target on snow covered ranges. Others function so that the firing pin detonates a blank .38 caliber cartridge on impact, causing the signal to fire. The explosion of the signal produces a flash and a large puff of smoke, permitting observation of bombing accuracy. Under freezing conditions, practice bombs that are filled with water or with a mixture of water and sand, have antifreeze added to prevent bursting of the bomb case caused by freezing of the filler.

2-48. Bomb, Practice: Miniature, 3-Pound, MK5 Mods 2 and 3

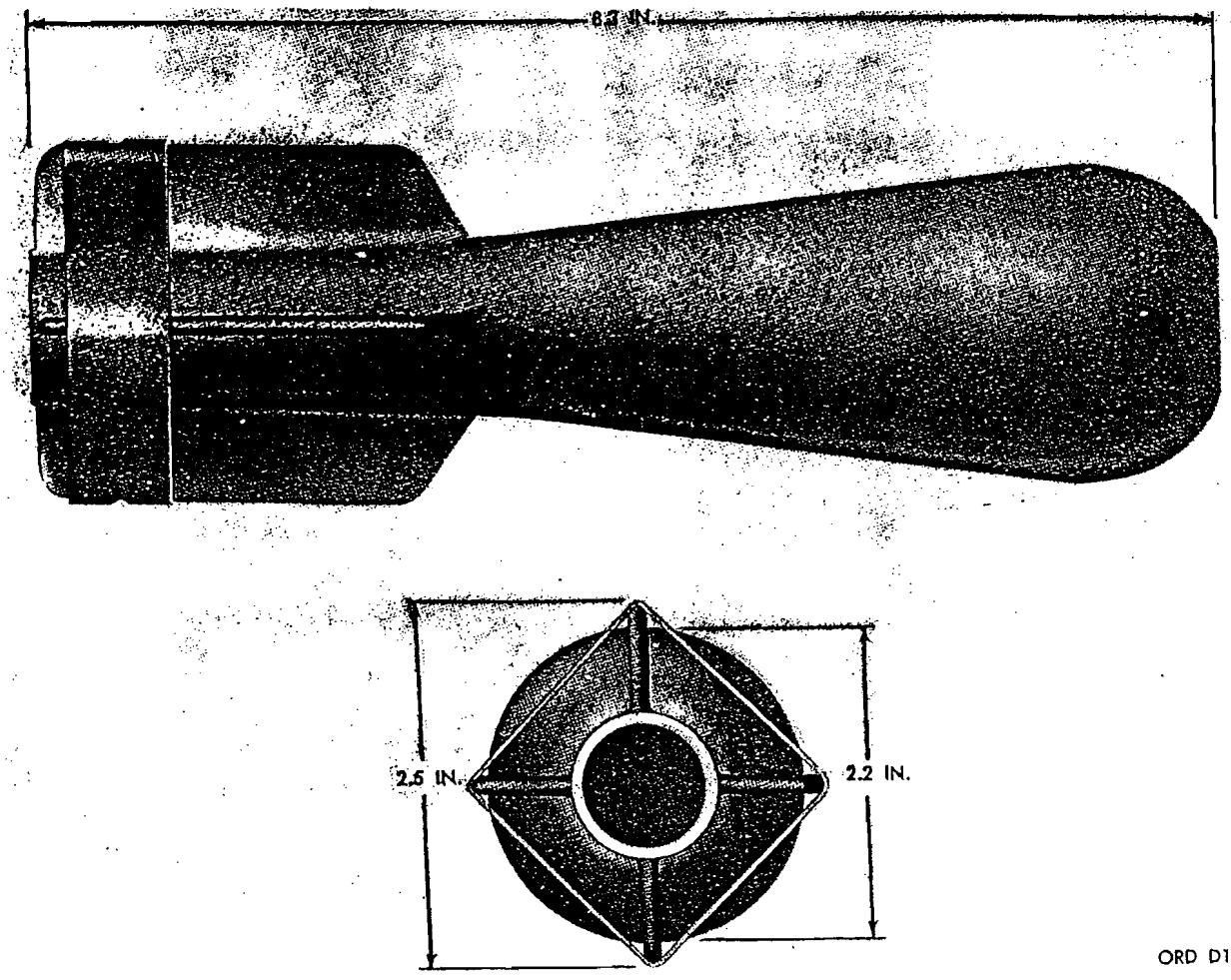


Figure 2-55. Bomb, practice: miniature, 3-pound, AN-MK 23, Mod 1.

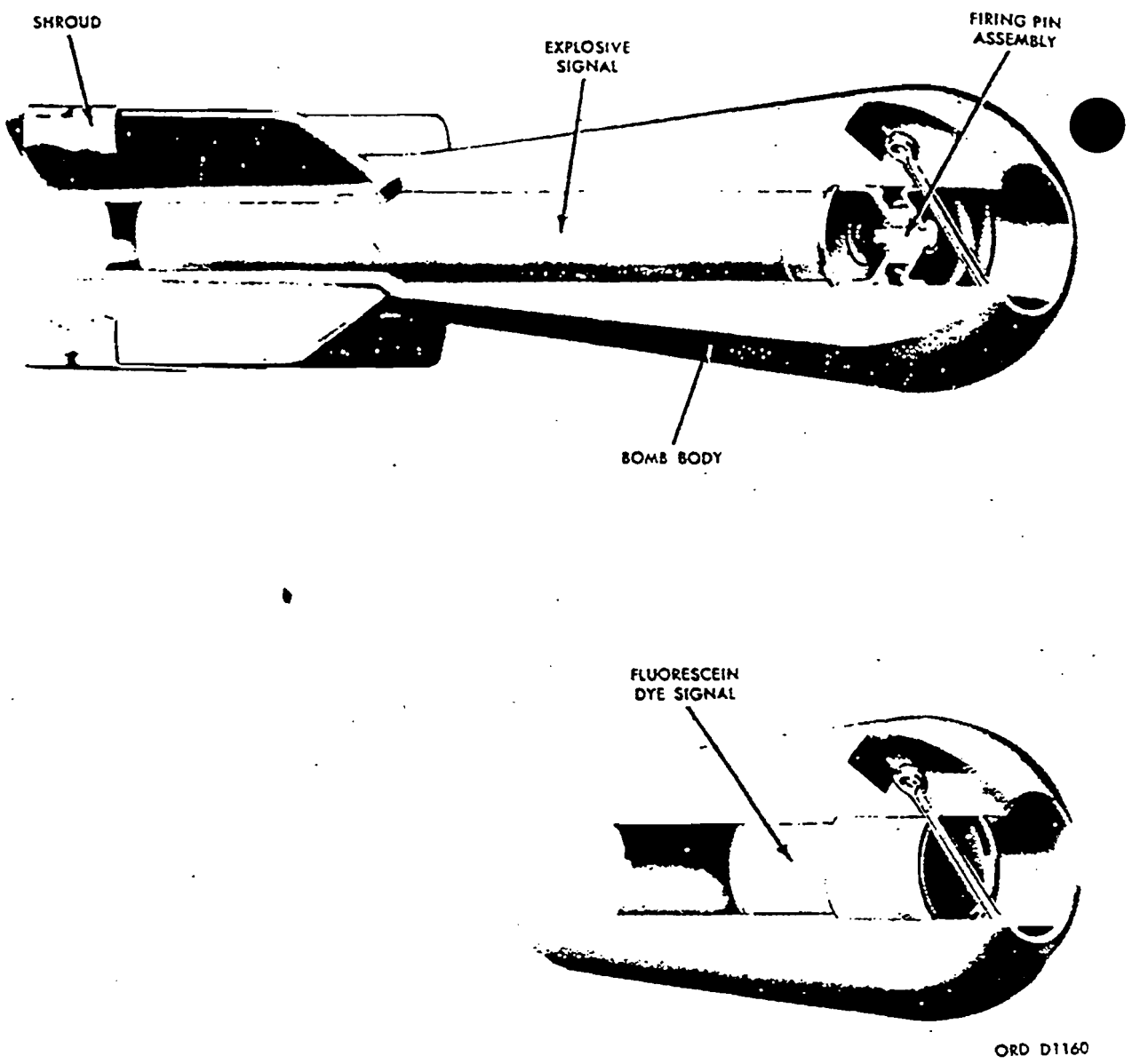


Figure 2-56. Bomb, practice: miniature, 3-pound, AN-MK23 Mod 1, cutaway view.

b. Use. Miniature practice bomb MK5 is used for bombing practice on armored-deck target boats. Bomb AN-MK23 is authorized for all bombing practice except that involving armored-deck target boats. MPB MK43 is used for low altitude, horizontal or dive bombing and on armored-deck target boats. Bombs MK5, AN-MK23, and MK43 are used with the MK4 signal. These bombs also are used with the MK5 signal which contains a flu rescein dye and is actuated by impact on wate When the MK5 signal is installed, the firing p assembly is not used. Special containers are utiliz by aircraft to carry and release these bombs.

c. Functioning. The firing pin assembly fires t signal which expels a large puff of smoke rearwa through the base of the bomb.

contain inert materials which produce very little flash and are markedly inferior to the Mod 0. Signal MK4 Mod 3 is similar to the MK4 Mod 0 but differs in that the cartridge case of the MK4 Mod 3 is extruded aluminum instead of paper; a primer mixture with improved storage characteristics has been used, and a new pyrotechnic load (which produces about the same flash, but with a superior smoke puff) has been incorporated. The MK4 Mod 4 signal is similar to the MK4 M with the exception of an inert marker load of oxide. In both Mods, the cover and cartridge are cemented together; in Mod 3 the assembly also is staked in four equally-spaced places.

d. Practice and Practice Target.

(1) Practice bombs (fig. 124) are used for target practice and are available in sizes from 23 to 250 pounds to simulate service bombs. Miniature practice bombs in 3- and 4.5-pound sizes are also provided. Most practice bombs have a spotting charge and fuze, others are completely inert. Some may be fitted with a parachute, in which case the parachute serves for spotting purposes. Some models of practice bombs require sand-loading to weight before use; others are constructed completely of reinforced concrete except for fin assembly and spotting charge.

(2) Practice target bombs are of the 100-pound size and are used to produce a colored target on snow covered ranges. The bomb is fitted with a nose fuze and a burster to scatter the iron oxide (hematite) filler, producing red coloration of the target area.

2-52. Bomb, Practice: 100-Pound, MK15 Mods 2, 3 and 4

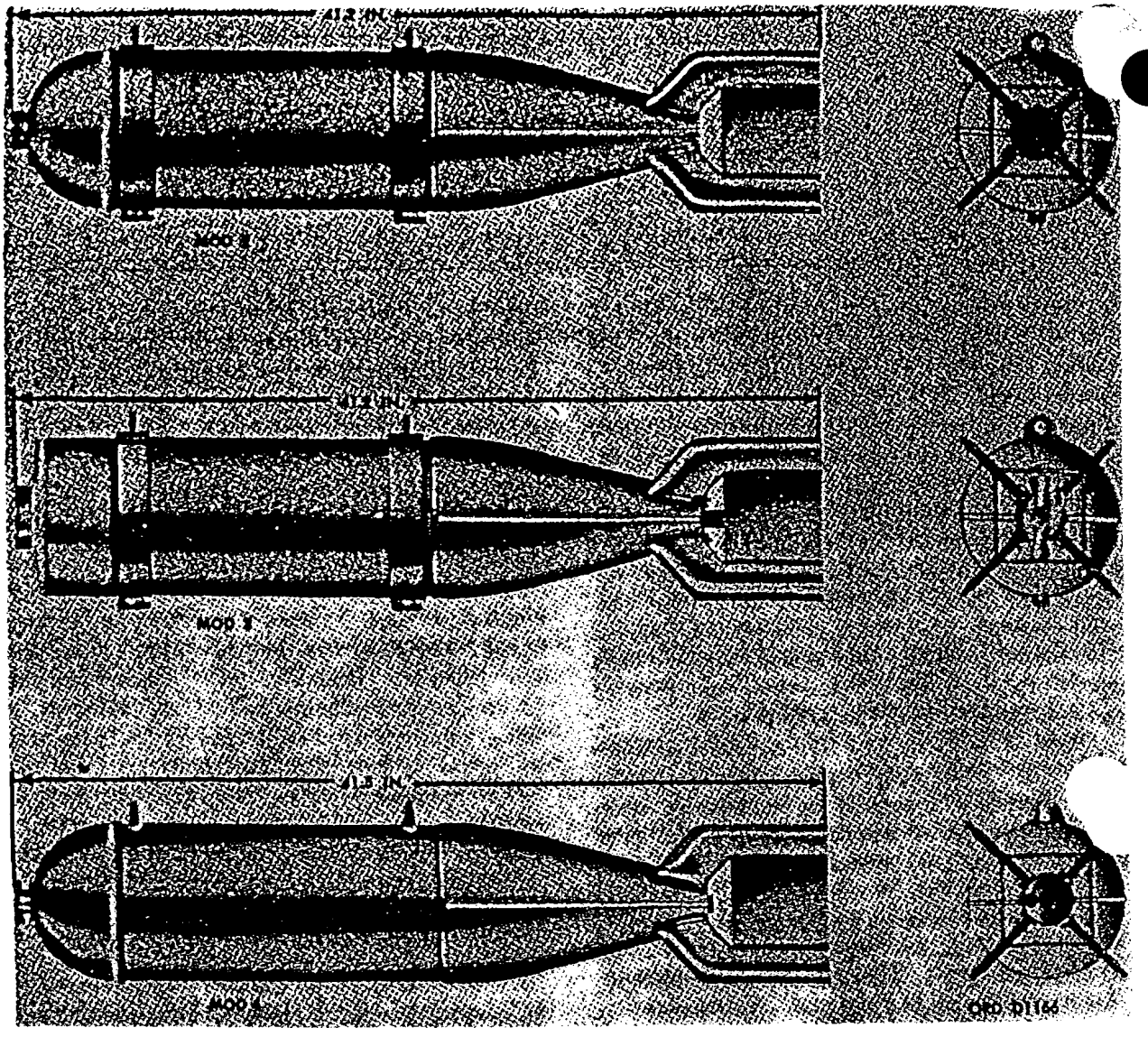


Figure 2-62. Bomb, practice: 100-pound, MK15 Mods 2, 3, and 4.

Table 2-50. Bomb, Practice: 100 Pound, MK15 Mods 2, 3, and 4

Mark	15	15	15
Mod	2	3	4
Length of Assembled Bomb (in.)	41.2	41.2	41.5
Diameter of Body (in.)	8.0	8.0	8.0
Fin Span (in.)	11.24	11.24	11.24
Weight of Assembled Bomb (lb):			
Loaded with Wet Sand	100.0	100.0	97.0
Loaded with Water	56.0	67.0	60.0

BOMB, LIGHT CASE, 4,000-POUND, AN-M56.

General. This bomb is designated as a light case because it has an exceptionally thin metal case in order to allow for a high percentage of explosive filler. Because of the equipment required to carry and release this bomb, it has only two Army suspension lugs 30 inches apart. Contrary to the other modern bombs previously described, the tail end is closed with a rear closing cap instead of a tail-base plug. This is due to the fact that penetration is not

Table 2-50. Bomb, Practice: 100 Pound MK15 Mods 2, 3, and 4—Continued

Mark	15	15	15
Mod	2	3	4
Wet Sand Filler (lb)	76.0	77.4	76.0
Water Filler (lb)	39.0	40.0	39.0
Water Filler (gal)	4.6	4.7	4.6
Signal	None	MK7 Mod 0	MK4 Mods 0, 1, 2, 3, 4
Fuze	None	MK247 Mod 0	None
Firing-Pin Assembly	None	None	MK1 Mod 0
Arming-Wire Assembly	MK1 or AN-M6A2	MK 1 or AN-M6A2	No Arming Wire

a. Description. Practice bomb MK15 Mod 2 (fig. 2-62 and table 2-50) is identical to the Mod 3 except that it is not adapted for the use of a fuze and signal. It is filled with water or a mixture of sand and water (fig. 2-63) for spotting purposes. For training purposes, a small washer may be soldered to the nose of the bomb to simulate a fuze. The end of an arming wire (which is normally inserted in the fuze of service type bombs) is then secured to the washer. For armed releases, the washer is torn free of the bomb by the arming wire; for safe releases, the arming wire remains secured to the washer. When used against armored-deck target boats, it is filled with water and released from an altitude of less than 7,000 feet.

b. Bomb, Practice: MK15 Mod 3. Practice bomb MK15 Mod 3 has a light-cased, cylindrical body with a threaded filling hole in its rounded nose. A box-fin assembly consisting of four metal vanes attached to a cone is welded to the aft end of the body. The bomb has two metal suspension band assemblies (each consisting of a circular clamp, a suspension lug, and two cap screws) for tightening the band to the bomb. The bands may be adjusted for double suspension of the bomb by orienting to suit the rack or shackle to which the bomb is to be attached. A flat nose attachment that reduces ricochet of the bomb at entrance angles as low as 90 degrees is used during antisubmarine practice. The attachment is secured in place by a cap which threads onto the filling hose. The bomb is used with practice bomb signal MK7 Mod 0 and inert fuze MK247 Mod 0 both of which are secured to the aft end of the bomb.

c. Bomb, Practice, 100-Pound: MK15 Mod. 4. The practice bomb MK15 Mod 4 is a light-cased, cylindrical bomb with a round nose and an integral box fin and cone. A flash tube, extending throughout its transverse axis, houses a pyrotechnic signal and firing-pin assembly. Two suspension lugs are welded to the bomb body 14 inches apart. A filling hole is located off center on the bomb nose and is sealed by a filler cap similar to those used on automobile gas tanks. The firing-pin assembly consists of two shallow metal cups, separated by a spacer which houses the firing pin. A cotter pin through the nose end of the flash tube and two recesses in the lip of the forward cup locks the firing-pin assembly and signal in place.

d. Functioning. Upon impact of the bomb with the target, the signal is detonated, producing a flash and a large puff of smoke, which permits observation of the bombing accuracy.

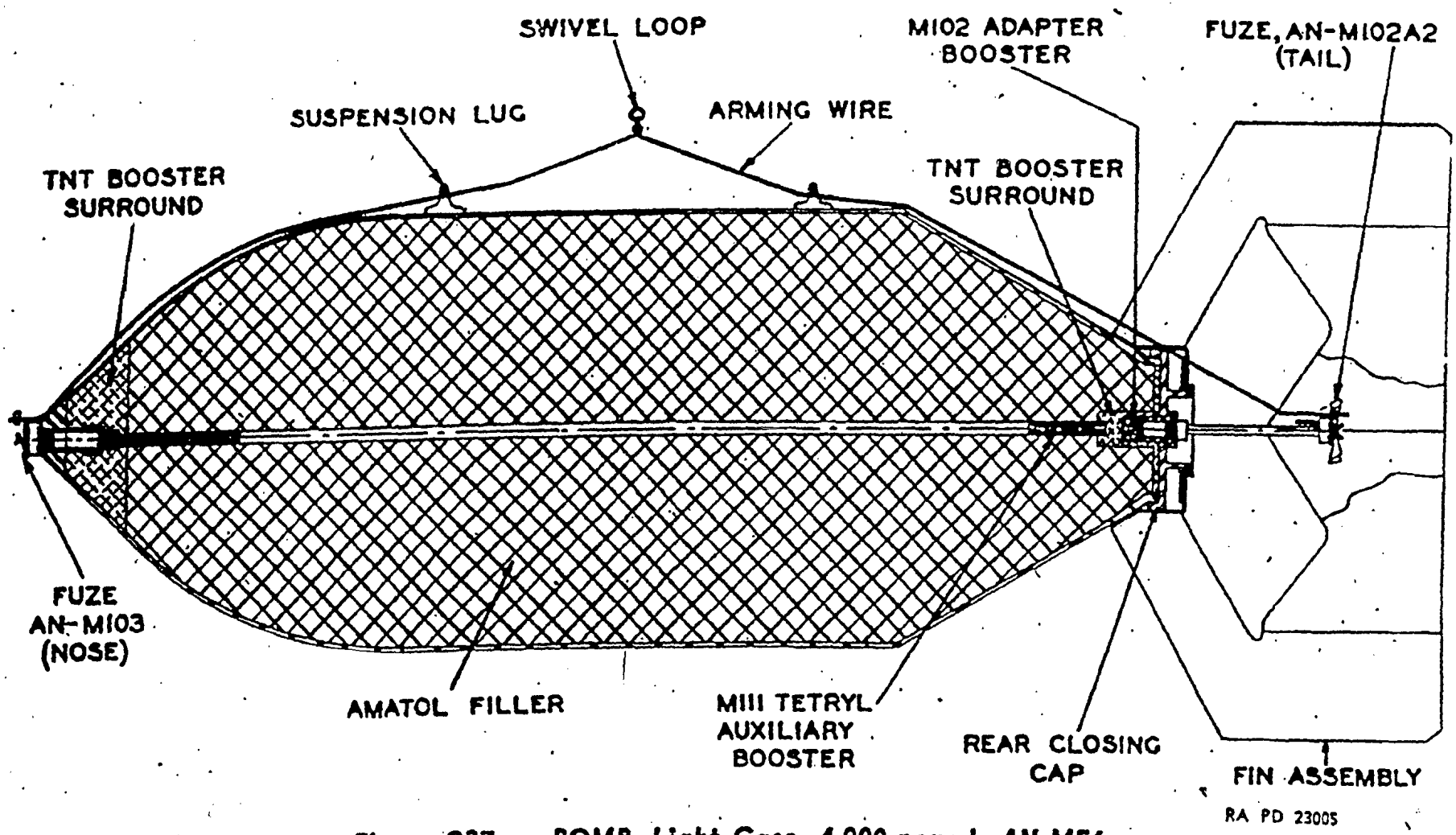


Figure 237 — BOMB, Light Case, 4,000-pound, AN-M56

desired. This is the largest bomb used by the U. S. forces today, although larger bombs may be forthcoming as the need arises.

Use. This bomb is intended for use against targets of large area such as villages, towns, and cities to produce a tremendous blast effect. It is familiarly termed a block buster.

Description. The total length of this bomb is 117.2 inches, and the diameter is 34.2 inches. The case is 0.38 inch thick and weighs 840.3 pounds. It is filled with either 3,240.6 pounds of 50/50 amatol, or 3,362 pounds of TNT. The total loaded weight is 4,087 pounds if filled with amatol, or 4,204 pounds if filled with TNT. Percentage of filler is 77.4 percent.

Fuzes. The L.C. 4,000-pound bomb is fuzed with the AN-M103 in the nose and the AN-M102A2 nondelay in the tail. Alternates are the M103 Nose Fuze and the AN-M102A1 Tail Fuze.

Complete Round Components. A complete round is made up of the following components:

Bomb Case AN-M56, loaded (1)
Nose Fuze AN-M103 (1)
Tail Fuze AN-M102A2, nondelay (1)
Fin assembly (1)
Arming wire, type B (1)
Fahnestock clips (2)

BOMB, DEMOLITION, 300-POUND, M31.

General. The 300-pound M31 Bomb has been replaced by the 250-pound bomb, but it is still found in service. It is identified by the rear closing cap and it has only two Army suspension lugs 14 inches apart.

Use. It is used on the same targets as the 250-pound GP bomb previously described. These targets are concentrations of railway rolling stock, brick and concrete buildings, aircraft installations, supply depots, and unarmored seacraft.

Description. The length of the 300-pound demolition bomb is 51 inches and its diameter is 10.9 inches. The case is 0.2 inch thick and it weighs 124 pounds. The explosive filler consists of 135 pounds of 50/50 amatol, or 144 pounds of TNT. Total weight of the bomb is 263 pounds when loaded with 50/50 amatol, and 270 pounds when loaded with TNT. The percentage of explosive filler is 50 percent.

Fuzes. The 300-pound Bomb M31 is fuzed with the Nose Fuze AN-M103 and the Tail Fuze AN-M100A2. Alternate fuzes are the M103, M118, or M119 Nose Fuzes and the M112, M100, AN-M100A1, or M106 (all modifications) Tail Fuzes.

Complete Round Components. A complete round consists of the following components or their alternates:
Loaded M31 Bomb Case (1)
Nose Fuze AN-M103 (1)
Tail Fuze AN-M100A2 (1)
Fin assembly (1)
Arming wire, type B (1)
Fahnestock clips (2)

BOMB, DEMOLITION, 600-POUND, M32.

General. The 600-pound bomb has been superseded by the 500-pound GP bomb. It is identified by the presence of two Army lugs and a rear closing cap.

Use. It is used on the same targets as the 500-pound GP bombs previously described. These targets are light steel bridges, concrete docks, underground railways, medium sized buildings, light cruisers, seacraft, and railway terminals.

Description. This bomb has a total length of 61.9 inches and has a diameter of 15.2 inches. The case is 0.35 inch thick and weighs 265.5 pounds. It has an explosive filler of 319.3 pounds of 50/50 amatol, or 336 pounds of TNT. Total weight of the bomb filled with amatol is 586 pounds, and if filled with TNT, it weighs 603.5 pounds. The percentage of explosive filler is approximately 56 percent.

Fuzes. The nose fuze used in the 600-pound bomb is the AN-M103 and the tail fuze is the AN-M101A2. Permissible alternates are the M103, M118, and M119 Nose Fuzes as well as the M113, M101, AN-M101A1, and M106 (all modifications) Tail Fuzes.

Complete Round Components. A complete round consists of the following components or their permissible components:
Loaded M32 Bomb Case (1)
Nose Fuze AN-M103 (1)
Tail Fuze AN-M101A2 (1)
Fin assembly (1)
Arming wire, type B (1)
Fahnestock clips (2)

BOMB, DEMOLITION, 1,100-POUND, M33.

General. The 1,100-pound bomb has been replaced by the 1,000-pound GP bomb, but it may still be found in service. It is identified by the rear closing cap and it has only two Army suspension lugs 14 inches apart.

Use. It is used on the same targets as the 1,000-pound GP bombs. These targets are reinforced concrete and heavy steel bridges, large reinforced buildings, light armored seacraft, reinforced docks, and warehouses.

Description. This bomb has a total length of 71.1 inches and a diameter of 19.8 inches. The case is 0.43 inch thick and weighs 493.7 pounds. The filler is 588 pounds of 50/50 amatol, or 613 pounds of TNT. The total weight when filled with amatol is 1,083.4 pounds, and when filled with TNT, it weighs 1,113.4 pounds. The percentage of filler is approximately 54 percent.

Fuzes. Fuzes provided for this bomb are the AN-M103 Nose Fuze and the AN-M102A2 Tail Fuze. Alternate fuzes are the M103, M118, or M119 Nose Fuze with the M114, M102, AN-M102A1 or M106 (all modifications) Tail Fuzes.

Complete Round Components. A complete round consists of the following components or permissible alternates:
Loaded M33 Case (1)
Nose Fuze AN-M103 (1)
Tail Fuze AN-M102A2 (1)
Fin assembly (1)
Arming wire, type B (1)
Fahnestock clips (2)

DESTRUCTOR M4.

General. The Destructor M4 is a detonating device for use in control unit boxes of certain planes to destroy their contents completely. It consists primarily of an explosive block of 2.5 pounds of tetrytol, an impact type of bomb tail fuze, and accessories for its assembly and mounting in the control unit.

Description. The main destructor assembly consists of an adapter into which the fuze fits, and of the explosive block mounted on a sheet metal support which is bent into the shape of an L. The adapter is welded in place on the short leg of the L. The explosive block is strapped in place on the other leg. The adapter and explosive block are connected by a length of detonating cord, which is crimped to the base of the adapter and extends to and through the center of the explosive block. A wood block having a channel to accommodate the detonator cord is fastened to the support and protects the detonator cord.

Complete Round Components. The Destructor M4 consists of the following components:
Main destructor assembly
Fuze Bomb M121 (tail) with vane assembly
Arming wire assembly
Fuze locking nut

FUZE, Tail, M121 for Destructor. This fuze is of the arming vane type with mechanical delay. It resembles in outward appearance and size, the M100 Bomb Fuze having the same reduction gear train as the M100. It has, however, the cocked firing pin assembly

of the M112 Bomb Fuze. It is a combination, therefore, of two fuzes previously discussed. The primer detonator it has incorporated in it, however, is the M27 Nondelay Primer Detonator which functions immediately on impact. It is used to function the M4 Destructor detonating device. On impact, the detonator in the fuze fires the detonator cord which detonates the explosive block of 2.5 pounds of tetrytol.

FURTHER REFERENCES: All references may be found at the close of this section.

Chapter 3

Semi-armor-piercing and Armor-piercing Bombs

GENERAL.

Semi-armor-piercing Bombs. Semi-armor-piercing (SAP) and armor-piercing (AP) bombs are designed to pierce the deck armor of battleships, heavy concrete structures, and similar highly resistant targets. SAP bombs have a heavy case of special steel and contain approximately 30 percent explosive. They are effective against all but the heaviest deck armor of modern battleships. SAP bombs are conventional in outline, resembling cylindrical GP bombs but being somewhat smaller in diameter and longer. The nose fuze seat liner is generally filled by a steel plug.

Armor-piercing Bombs. Armor-piercing bombs are designed to penetrate the heaviest deck armor, such as that used on the deck of a modern battleship. Unlike the rest of our modern demolition bombs, the armor-piercing bombs are filled with explosive D. This explosive is used because armor-piercing bombs are subject to great shock, and explosive D is very insensitive to shock. Armor-piercing bombs are designed to penetrate the target before function, and premature function due to a sensitive explosive is therefore undesirable.

Both the Navy and Army have a series of armor-piercing bombs. The Army bombs are converted 10-inch, 12-inch and 14-inch seacoast mortar deck-piercing or armor-piercing projectiles. The suspension lugs are attached to the body by means of suspension bands that surround the circumference of the shell and are bolted in place. A tail-base plug has been added to adapt the shell for tail adapter booster, fuze, and fin assembly. These bombs are standard for issue only.

The Navy bombs are made to be interchangeable for Army or Navy use. These bombs are standard for issue and manufacture.

Penetration and Terminal Velocity. GP bombs will penetrate three to four stories of ordinary buildings. SAP bombs will penetrate five to six stories of heavy construction or 2½ to 3 inches of armor plate. AP bombs are made to pierce 6 to 7 inches of armor plate.

The semiarmor-piercing bombs are capable of penetrating moderately armored decks from 12,000-foot altitude in horizontal bombing, or light armored decks in dive bombing from about 2,500-foot altitude. There is a small degree of underwater effect from near misses with the 1,000-pound size, but the effect is negligible with the 500-pound size.

The large armor-piercing bombs are capable of piercing the heaviest armor deck from about 12,000 feet in horizontal bombing, or moderate decks in dive bombing from about 2,500 feet.

In considering the terminal velocity of the above types of bombs, it was found that at 14,000 feet, planes traveling at 200 miles per hour dropped bombs producing the following maximum terminal velocities:

GP	SAP	AP
600-700 ft per sec	750-800 ft per sec	900-950 ft per sec

Armor-piercing Bomb Fuze, Nose AN-Mk. 228.

General. This fuze is designed to be used on armor-piercing bombs of Navy design such as the 1,600-pound AN-Mk. 1 and the 1,000-pound AN-Mk. 33. It is of the arming vane type with mechanical delay having a series of reduction gears to produce the desired delay in arming. It arms in 900 feet of air travel, and is designed to function on impact with a delay time of 0.08 second. One auxiliary booster of 180 grams is required to be used with this fuze. The auxiliary booster is found in the adapter booster fuze seat located in the bomb body. The fuze is packed one per can, four cans per crate.

BOMB, SEMI-ARMOR-PIERCING, 500-POUND, AN-M58.

General. This bomb is of the cylindrical type and has a box type fin. It contains approximately 154 pounds of high explosive and is adapted for both nose and tail fuzes, although the nose fuze seat liner contains a steel plug instead of a fuze. The tail-fuze cavity is kept free of foreign matter by means of an adapter plug. This bomb can be identified by the sharply pointed nose and pointed nose plug. It has two Army suspension lugs 14 inches apart and a single suspension lug at the center of gravity. It utilizes a tail-base plug as the GP bombs do.

Use. The 500-pound AN-M58 SAP Bomb is designed to pierce armor plate, reinforced concrete construction, and similar resistant targets.

Description. The total length of the 500-pound SAP bomb is 57.9 inches and the diameter is 11.9 inches. The case is 0.75 inch thick and weighs 310 pounds. It is filled with 154 pounds of 50/50 amatol, or 159 pounds of TNT. Total filled weight is 466.5 pounds if amatol is used, or 471.5 if TNT is used. The percentage of explosive filler is approximately 32 percent.

Fuzes. Standard fuzes used are, none in the nose and the AN-M101A2 in the tail. For special purposes or as substitutes, Alternate Fuzes M103, AN-M103, M118, and M119 are used in the nose while the AN-M101A1, M101, M113, and M106 (all modifications) are supplied for the tail.

Complete Round Components. The following components are provided to make up a complete round:
Bomb Case AN-M58, loaded (1)
Tail fuze AN-M101A2 (1)
Fin assembly (1)
Arming wire type A (1)
Fahnestock clip (1)

BOMB, SEMI-ARMOR-PIERCING, AN-M58A1.

General. This bomb was designed to replace the AN-M58 which was found to lack necessary penetrating power to be effective.

The AN-M58A1 is the same as the AN-M58 except for a heavier nose. Added to the nose was 27.5 pounds of steel. This replaced 5.5 pounds of amatol in order to give the bomb more penetrating power. This bomb is S & M. The AN-M58 is S.

Comparison With the 500-pound GP Bomb.

Use. The SAP bomb is used against more resistant targets than the GP bomb.

Shape. Both bombs are cylindrical; however, the diameter of the SAP bomb is much narrower (11.9 inches as compared to 14.2 inches) and the nose portion is more pointed.

Percentage of filler. Although the filler is the same, the percentage varies. The SAP carries approximately 30 to 33 percent of explosive filler, whereas the GP carries approximately 50 to 55 percent of explosive filler.

Bomb case. The SAP bomb case is made of special steel and is much heavier and thicker (0.75 in. as compared to 0.3 in.) than the corresponding GP bomb.

Fuzes. The SAP bomb, although it has the conventional fuze seat liner in the nose, is usually provided with no nose fuze but has a steel nose plug to aid in penetration. It can utilize a nose fuze in place of the steel plug. If it were to employ a nose fuze, this bomb could be effectively used as a large fragmentation bomb.

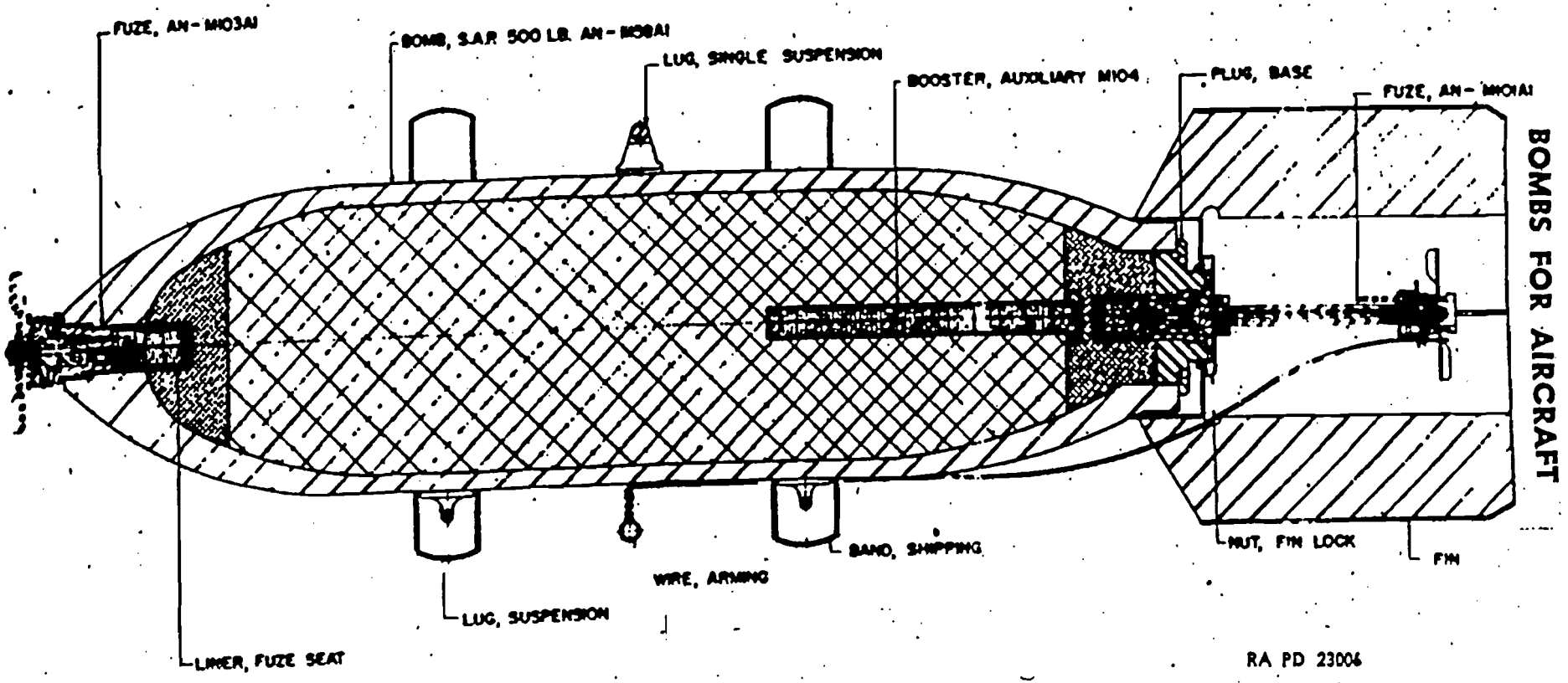


Figure 239 — 500-pound Bomb AN-M58A1—Sectionalized View

Arming wire. As it usually employs only a tail fuze type A, arming wire 0.064 inch in diameter is shipped as a component of the complete round whereas the GP bomb utilizes a type B arming wire.

Auxiliary booster. The SAP bomb employs merely a tail auxiliary booster, whereas at the present time (although a change may be forthcoming) the GP bomb employs both a nose and tail auxiliary booster.

Other features. In all other features except size, the two bombs are alike. Both utilize a tail-base plug instead of a rear closing cap and a box type fin held firmly in place by a fin lock nut. The adapter booster in the SAP bomb is always the M102 whereas in the GP bombs either the M102 or the M115 Adapter Booster is employed, depending on the model of the bomb.

BOMB, SEMI-ARMOR-PIERCING, 1,000-POUND, AN-M59.

General. This bomb is similar except in size to the 500-pound SAP bomb previously described. It is cylindrical in shape and has a box type fin. It has approximately 307 pounds of high explosive and is adapted for both nose and tail fuze, although the nose fuze adapter (fuze seat liner) contains a steel plug instead of a fuze. The tail fuze cavity is kept free of foreign matter by an adapter plug or shipping plug. This is the largest bomb of the semiarmor-piercing type. It has the Army lugs 14 inches apart, one single suspension lug at the center of gravity, and a tail-base plug in the same manner as the GP bombs.

Use. This bomb is used against heavily reinforced buildings, docks, bridges, and seacraft.

Description. The total length of this bomb is 70.4 inches and the diameter is 15.1 inches. The case is 0.75 inch thick and weights 661 pounds. It is filled with 307 pounds of 50/50 amatol, or 318 pounds of TNT. The total loaded weight is 971 pounds with amatol, or 990 pounds with TNT filler. Percentage of filler is approximately 31 percent.

Fuzes. Fuzes provided for the 1,000-pound SAP bomb are the standard AN-M102A2 Tail Fuze with no nose fuze; however, alternates are the Nose Fuzes M103, AN-M103, M118, and M119, with Tail Fuzes AN-M102A1, M102, M114, and M106 (all modifications).

Complete Round Components. A complete round consists of the following components or their alternates:

Bomb Case AN-M59, loaded (1)
Tail Fuze AN-M102A2 (1)
Fin assembly (1)
Arming wire, type A (1)
Fahnestock clip (1)

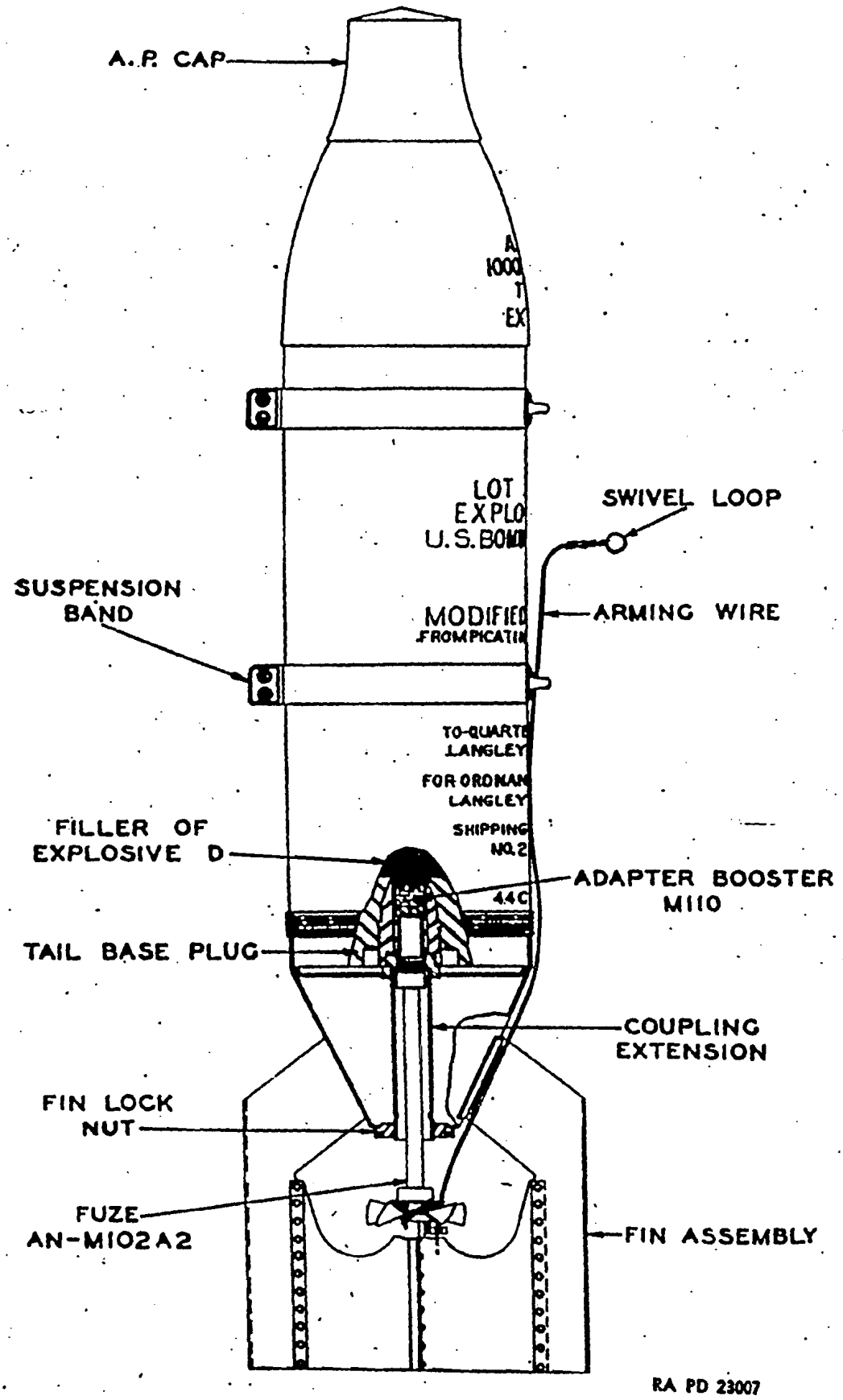


Figure 240 — BOMB, A.P., 1,000-pound, M52

BOMB, ARMOR-PIERCING, 1,000-POUND, M52.

General. The 1,000-pound armor-piercing bomb is a converted 12-inch mortar shell. The modifications included the removal of the base fuze and the incorporation of a tail-base plug which adapted the shell to receive a tail adapter booster, the M110, and a box type fin assembly by means of a coupling extension and fin lock nut. The fin lock nut holds the fin assembly around the bomb body in the same manner as described for the GP bombs, except that the threads to seat the fin lock nut are provided by the coupling extension.

Attached to the bomb body are two suspension bands which provide the lugs for double suspension. These bands fit around the circumference of the shell and are bolted in place. For dive bombing purposes, the Trunnion Band M3A1 was included in the complete round. The final addition was a type A arming wire assembly .064 inch in diameter for use in the tail fuze. This bomb can be identified by the blunt mild steel pellet on the nose.

Description. Total length of this bomb is 70.88 inches and the diameter is 12 inches. The case is 2.3 inches thick and weighs 983 pounds. It is filled with 58.35 pounds of explosive D, bringing the total weight to 1,077 pounds. Percentage of explosive filler in this bomb is 5.4 percent.

Fuzes. The bomb is fuzed with the Tail Fuze AN-M102A2. There is no nose fuze. Substitute fuzes are the AN-M102A1 and M102 Tail Fuzes.

Complete Round Components. A complete round consists of the following components or permissible substitutes:
Covered Mortar Shell M52, 1,000-pound, loaded (1)
Suspension bands (2)
Tail Fuze, AN-M102A2 (1)
Fin assembly (1)
Arming wire, type A (1)
Fahnestock clip (1)

The A1 Modification. The 1,000-pound AP Bomb M52A1 differs from the M52 only in that it has a new adapter booster which has a greater tetryl booster charge.

BOMB, ARMOR-PIERCING, 900-POUND, M60.

General. This bomb is a converted 12-inch mortar shell. Its modifications in general are the same as that previously described for the AP, 1,000-pound, M52 Bomb.

Description. Complete length of this bomb is 61.72 inches and the diameter is 12 inches. The case weighs 807.74 pounds and is filled with 43.34 pounds of explosive D to bring the total weight of the bomb to 899 pounds. Percentage of filler is approximately 5.5 per

Fuzes. The standard for this bomb is the AN-M102A2 Tail Fuze. Alternates are the AN-M102A1 and M102 Tail Fuzes.

Complete Round Components. A complete round consists of the following components or alternates:
Converted Mortar Shell M61, loaded (1)
Suspension bands (2)
Tail Fuze AN-M102A2 (1)
Fin assembly (1)
Arming wire, type A (1)
Fahnestock clip (1)

BOMB, ARMOR-PIERCING, 800-POUND, M61.

General. The M61 Bomb is a converted 12-inch mortar shell. In general, the modifications involved are the same as those in the AP, 1,000-pound, M52 Bomb. It can be identified by its extremely blunt nose and threads for a windshield.

Description. Total length of this bomb is 58.72 inches and the diameter is 12 inches. Weight of the empty case is 787.28 pounds. The filler is 32.68 pounds of explosive D, bringing the weight of the complete round to 853 pounds. Percentage of filler is approximately 3.8 percent.

Fuzes. The standard fuze for this bomb is the Tail Fuze AN-M102A2 with the AN-M102A1 and M102 as alternates.

Complete Round Components. A complete round consists of the following components or permissible alternates:
Converted Mortar Shell M61, loaded (1)
Suspension bands (2)
Tail Fuze AN-M102A2 (1)
Fin assembly (1)
Arming wire, type A (1)
Fahnestock clip (1)

BOMB, ARMOR-PIERCING, 600-POUND, M62.

General. This bomb is a converted 10-inch shell. Its modifications in general are the same as those previously described for the AP, 1,000-pound, M52 Bomb. It can be identified by the sharply tapering nose windshield.

Description. The total length of this bomb is 62.06 inches and its diameter is 10 inches. Weight of the empty case is 575 pounds. Filled with 33.61 pounds of explosive D, the complete round weighs 634 pounds. The percentage of filler is approximately 5.2 percent.

Fuzes. This bomb is fuzed with the AN-M102A2 Tail Fuze, and the AN-M102A1 and M102 are provided as alternates.

Complete Round Components. A complete round consists of the following components:
Converted AP Shell M62, loaded (1)
Suspension bands (2)
Tail Fuze AN-M102A2 (1)
Fin assembly (1)
Arming wire, type A (1)
Fahnestock clip (1)

A1 and A2 Modifications. The 600-pound AP Bomb M62 used the M110 Adapter Booster. The M62A1 utilizes the M113 Adapter Booster, whereas the M62A2 incorporates the M114 Adapter Booster. In general, the bombs are the same in all other respects.

BOMB, ARMOR-PIERCING, 1,400-POUND, M63.

General. This bomb is a converted AP shell which weighs approximately 1,400 pounds. Its modifications in general correspond to those described for the AP, 1,000-pound, M52 Bomb.

Description. The total length of this bomb is 69.1 inches and the diameter is 14.0 inches. It is filled with 35 pounds of explosive D and weighs, 1,412 pounds. Percentage of explosive filler is approximately 2.5 percent.

Fuzes. The standard for this round is the Tail Fuze AN-M102A2. Alternates are the AN-M102A1 and the M102 Tail Fuzes.

Complete Round Components. The complete round consists of the following components:
Converted AP Shell M63, loaded (1)
Suspension bands (2)
Tail Fuze AN-M102A2 (1)
Fin assembly (1)
Arming wire, type A (1)
Fahnestock clip (1)

BOMB, ARMOR-PIERCING, 1,600-POUND, AN-MK. 1.

General. This bomb was designed by the Navy and is interchangeable between the Army and Navy. It is standard for issue and manufacture. It is cylindrical in shape and has a pointed nose, tapered tail, and box type fin assembly.

Uses. It is designed to penetrate the heaviest horizontal armor of combatant ships and detonate below deck. It should not be employed against unarmored or lightly armored craft, as the fuze delay may permit the bomb to pass completely through the ship before detonating. Due to the thickness of the walls of this bomb, the explosive cavity is small compared to that of GP bombs and it has

146 pounds of explosive D is 1,004 pounds. Percentage of filler is approximately 14.5 percent.

Fuzes. The standard fuze for this bomb is the AN-Mk. 228 Tail Fuze. Alternate or substitute fuzes are the AN-Mk.28, Mod. 1 or the Mk. 28 Tail Fuze.

Complete Round Components. A complete round consists of the following components:

Bomb Case AN-Mk.33, 1,000-pound, loaded (1)
Tail Fuze, AN-Mk.228 (1)
Fin assembly (with lugs, keys, trunnions, and screws) (1)
Arming wire, type A (1)
Fahnestock clip (1)

FURTHER REFERENCES: A complete list of references dealing with bombs may be found at the close of the final chapter of this section.

Chapter 4

Depth Bombs

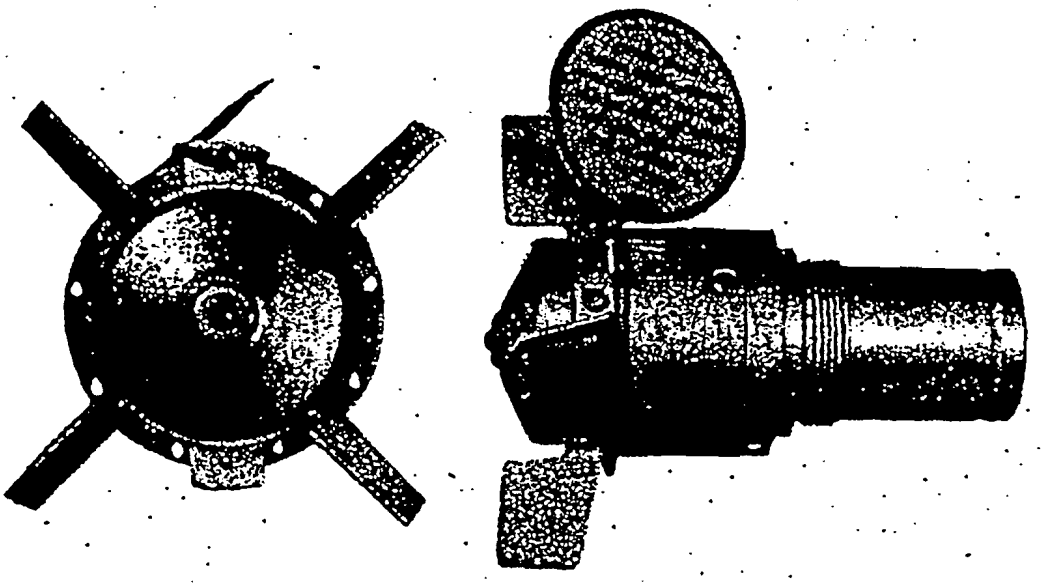
GENERAL.

Depth bombs were used by the Navy for a considerable length of time before their adoption by the Army. This is very natural, of course, since depth bombs are designed for use entirely against watercraft. After the introduction of the policy to make bombs interchangeable between the Army and Navy, the Army became concerned about depth bombs. Those designated as AN are very similar in operation and construction to one another.

Depth Bomb, FUZE, Transverse, Hydrostatic, AN-Mk. 224.

General. This fuze is designed to function in response to hydrostatic pressure at a predetermined depth. As issued, the fuze is set for a depth of 50 feet, but this setting may be changed for 25, 75, 100, or 125 feet. The fuze is installed in a transverse fuze cavity just forward of the bomb center.

Description. The fuze is issued in three subassemblies: pistol, booster, and booster extender. When assembled to the bomb, the fuze protrudes slightly on both sides and requires a section of arming wire for each end. Both sections of arming wire must be withdrawn in order to permit the fuze to operate.



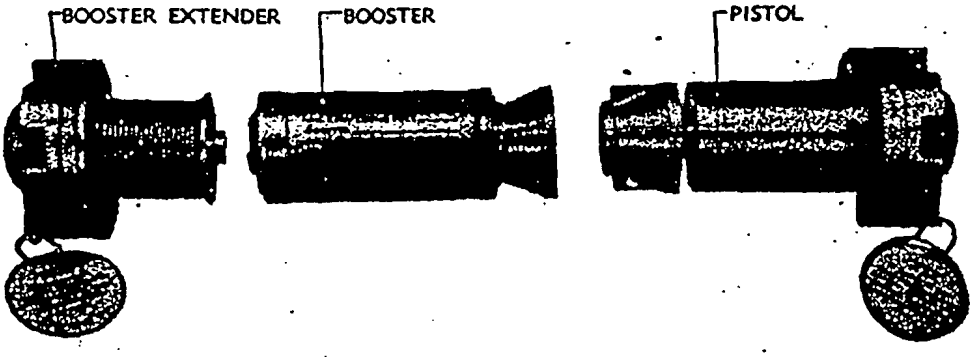
RA PD 2135

Figure 245 — FUZE, Bomb, AN-Mk. 219

The fuze is approximately 3.6 inches in diameter and 16.6 inches in length when completely assembled. When inserted into the bomb body, the pistol assembly is bolted to one side of the bomb and the extender is bolted to the opposite side.

The explosive train for this fuze is interrupted by the primer assembly being held out of alinement with the detonator assembly and both of these assemblies being out of line with the firing pin and subbooster. The primer assembly is located in a sliding wedge which is under a spring load, with a similar sliding wedge containing the detonator assembly under a spring load in the opposite direction.

The booster extender assembly contains a bellow-shaped hydrostatic piston, an extender base, and extender pin. The extender pin, having a small groove milled in it, is held, by means of three locking



RA PD 2136

Figure 246 — FUZE, Bomb, Hydrostatic, AN-Mk. 224

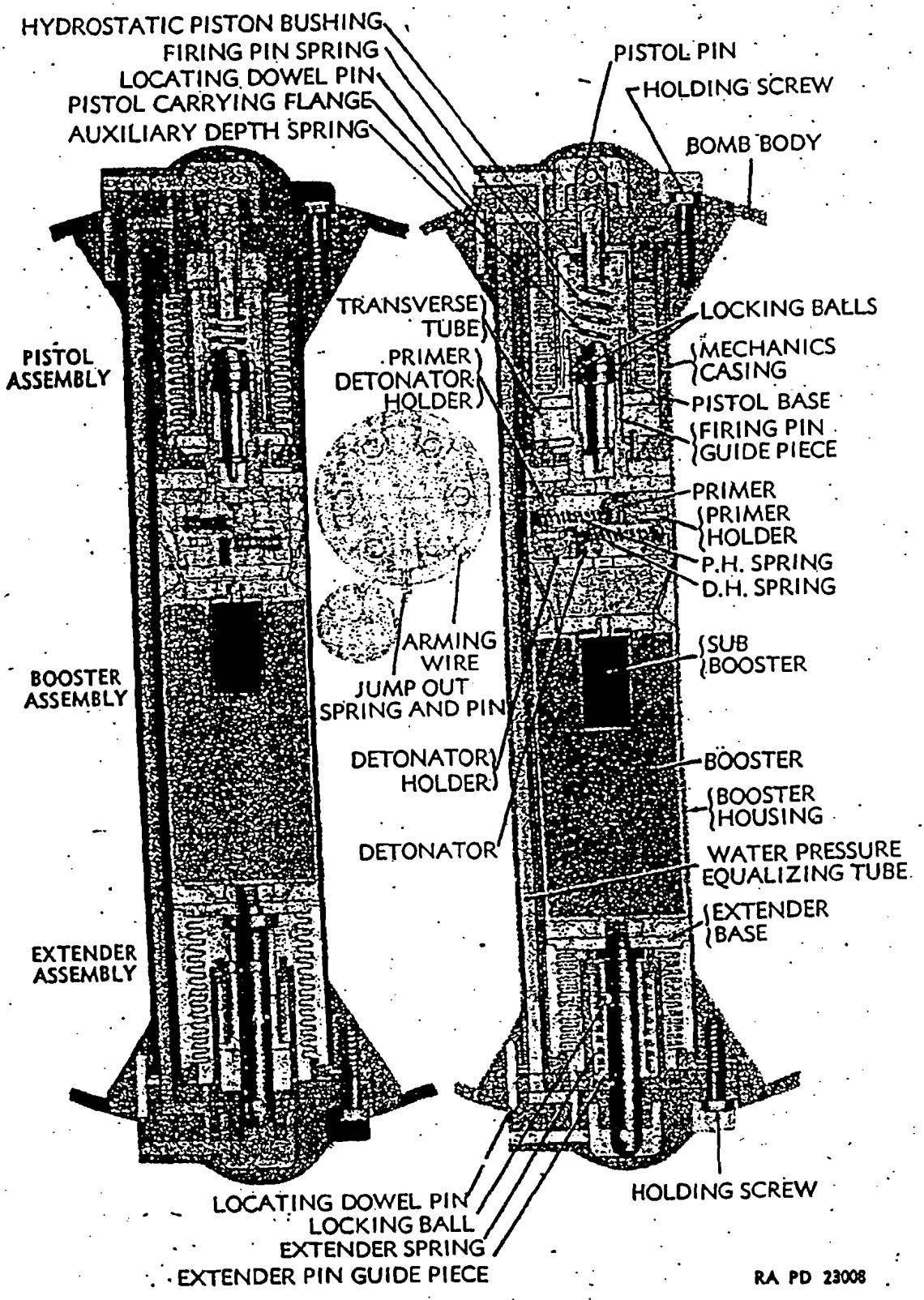


Figure 247 — FUZE, Bomb, Hydrostatic, AN-Mk. 224—Transverse

a new type packing container, the design of the jump-out pin was altered so as to fit into the fuze body proper without the pin protruding from the circumference of the fuze.

All of the water ports leading into the fuze were eliminated except the jump-out pinhole which acts as the water port after the emission of the jump-out pin. This jump-out pin is designed with a rubberized extender washer-like affair near the outer end, which fits up against the surface of a shoulder in the jump-out pinhole making the fuze watertight.

Instead of two holes through the jump-out pin, there is now but one. This makes it only possible to insert either a cotter pin or an arming wire at one time. It is therefore necessary to apply pressure to the end of the jump-out pin in order to prevent it from flying out during the interval between the time the cotter pin is removed and the arming wire is inserted.

As an aid to accomplishing the withdrawal of the cotter pin and the insertion of the arming wire, a special tool is used which has been designed to hold the jump-out pin in place.

Packing. This fuze is packed as three subassemblies: pistol, booster, and booster extender are in a sealed metal container which contains auxiliary springs and 12 screws for attaching the fuze to the bomb. Four such containers are packed per metal crate or box.

Depth Bomb, FUZE, Transverse, Hydrostatic, AN-Mk. 234. The AN-Mk. 234 recently designed will replace the AN-Mk.224. This new fuze is designed to allow for depth settings which can be varied from the outside of the fuze without the necessity for disassembling the fuze and changing springs. This fuze will also utilize the special tool which is a modification of a screwdriver to hold the jump-out pin in place when the cotter pin is removed and the arming wire is inserted.

Depth Bomb, FUZE, Nose, AN-Mk. 219.

General. This fuze is an arming vane type with mechanical delay. It arms in 600 to 850 feet of air travel or about 6 seconds, and functions on impact with water or any denser medium with instantaneous action.

The fuze is shipped with an adapter so that when fuze and adapter are assembled, they will fit in the fuze cavity in the nose of the depth bomb.

Two booster pellets each containing 180 grams of TNT are shipped in place in the bomb in the booster cavity.

The fuze is packed one per metal container which is sealed by a soldered metal tear strip.

Use. This fuze is standard for Navy demolition bombs and in a special purpose fuze for the depth bomb when surface demolition or blast effect is desired with this bomb.

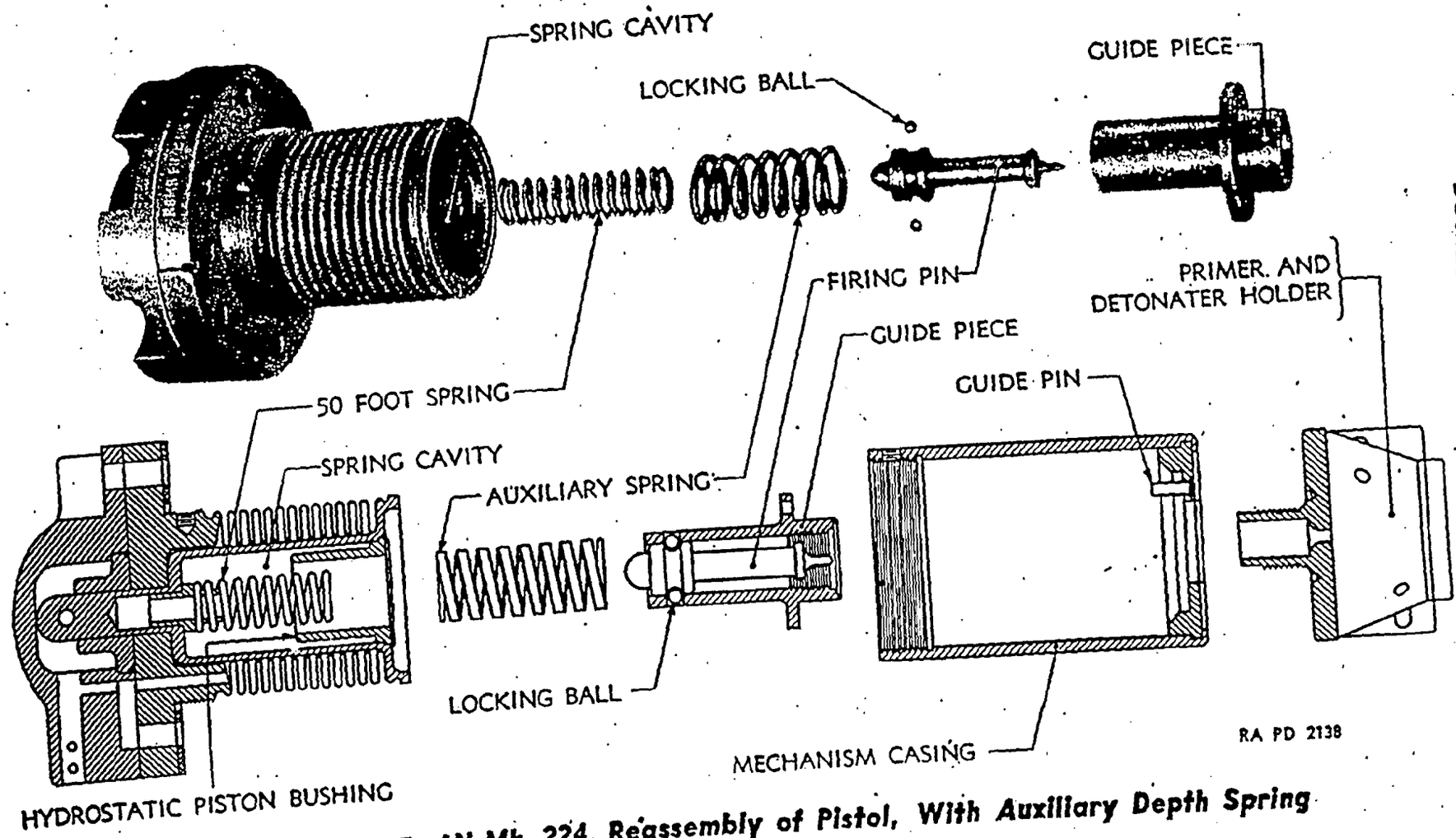


Figure 249 — FUZE, AN-Mk. 224, Reassembly of Pistol, With Auxiliary Depth Spring

Depth Bomb, FUZE, Nose, AN-Mk. 221.

General. This fuze is an arming vane type with mechanical delay. It arms in 800 to 1,100 feet of air travel and functions on impact with water or any denser medium with a delay of 0.01 second.

This fuze differs from the AN-Mk. 219 in the following main features:

A delay of 0.01 second is incorporated in the explosive train of the fuze.

The fuze body itself is threaded to be screwed into the fuze cavity of the depth bomb, consequently no adapter is used.

When this fuze is used, only one 180 gram TNT booster pellet is used in the fuze cavity, another must be removed before assembling of the fuze to the bomb.

Use. This fuze is standard for Navy domolition bombs and is a special purpose fuze for the depth bomb where blast effect is desired. For all normal usage, a hydrostatic fuze will function the depth bomb. Due to the fact that depth bombs are light case construction, the use of this fuze with its incorporated delay of 0.01 second is not recommended as the case may break before the fuze will function.

Models AN-Mk. 221 not antisubmarine. This includes AN-Mk. 221 and AN-Mk. 221M1 except lots 21, 22, 23 and AN-Mk. 221M3 and M4. These models are all the same being only slightly changed from the AN-Mk. 221 Fuze and are manufactured by different concerns. The AN-Mk. 221 will arm in approximately 850 feet air travel. All these fuzes will function, if dropped from 2,000 feet or higher, on impact with water.

Models AN-Mk. 221 antisubmarine. This includes AN-Mk. 221M1 lots 21, 22 and 23 and AN-Mk. 221M2. These fuzes were modified to be inoperative on water impact when released from less than 7,000 feet altitude. The AN-Mk. 22M1 are marked "A.S." fuzes if they are of the antisubmarine lots. All of the AN-Mk. 221M2 are built the same way, and therefore there is no need to mark these "A.S."

Depth Bomb, FUZE, Tail, Hydrostatic, AN-Mk. 229M1.

General. This is an arming vane type of fuze with mechanical delay. Upon arming, detents (spring actuated pins) fly out so as to allow the bellows to operate. It is a tail fuze and when armed it functions on water pressure. Depth setting is made by a dial located on the exterior of the fuze body which operates a long spindle in the interior of the bomb fuze. This varies the compression on the depth spring. By turning the dial, one of five settings can be obtained, namely: 25-, 50-, 75-, 125-, and 175-foot depths.

In operation, it is somewhat similar to the AN-Mk. 224 except that water pressure forces the initiating explosive into a stationary firing pin with only one system of bellows. The AN-Mk. 230 used on the

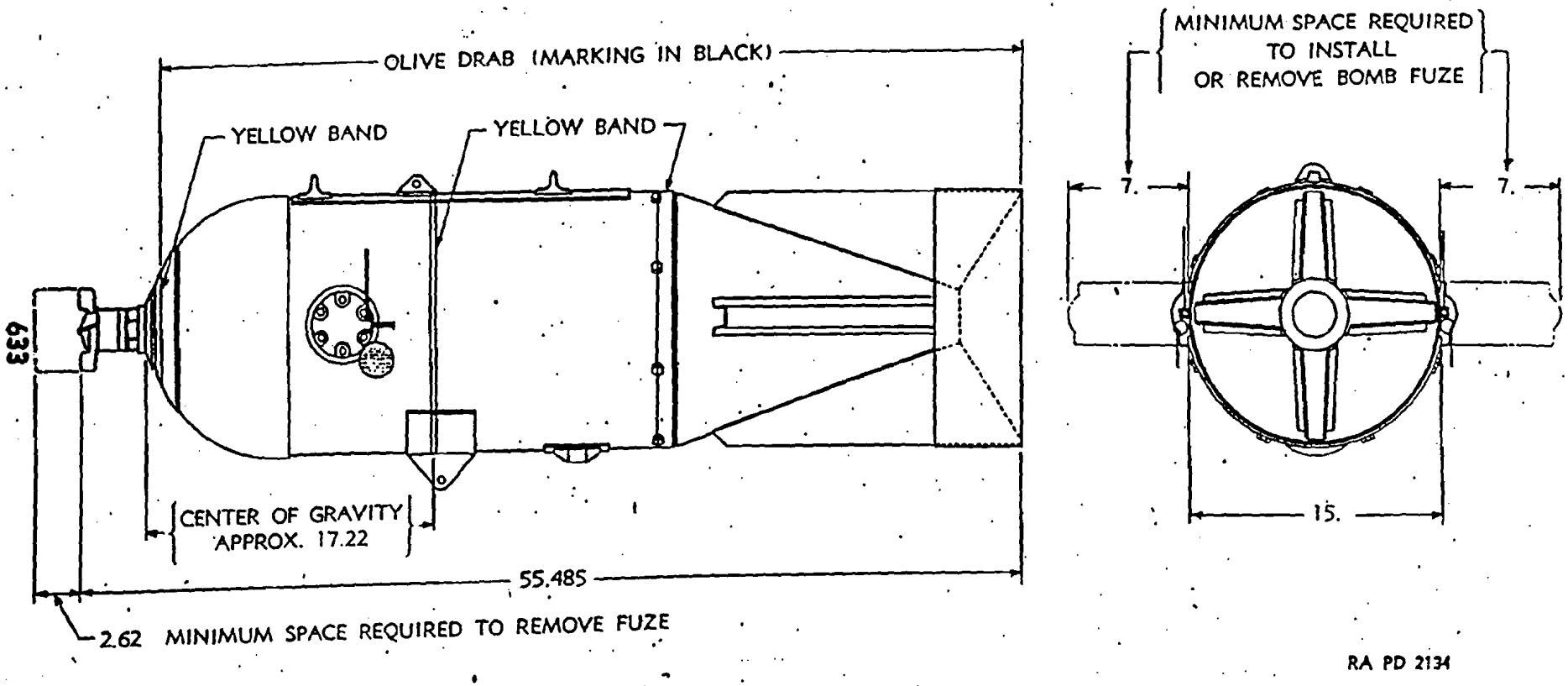


Figure 250 — BOMB, Depth, 325-pound, AN-Mk. 17

new GP bombs resembles this fuze; however, it is smaller in diameter and has different threads to fit the GP bombs.

Actually there are no AN-Mk. 229 (no mod.) Fuzes in service. Only the AN-Mk. 229 Mod. 1 Fuzes have been issued for service use.

BOMB, DEPTH, 325-POUND, AN-MK. 17M1.

General. This bomb is a light case bomb which is intended for use primarily against submarines but with special fuzing may be used for demolition effect on surface craft. It weighs 325 pounds of which 243 pounds or 75 percent is high-explosive filler.

Description of the Bomb Body. The body of the bomb is constructed from 1/16-inch sheet metal with a well rounded nose and a flat recessed base. The nose end of the bomb is adapted to receive the adapter for the AN-Mk. 219 Fuze or the AN-Mk. 221 Fuze directly. These fuzes are used only when blast effect is desired.

Approximately 1 foot behind the nose of the bomb, a cavity passes through the bomb body from one side to the opposite side. This cavity is known as the transverse tube and serves as the housing for the AN-Mk. 224 Hydrostatic Fuze. The bomb is shipped unfuzed with suitable plugs and plates protecting the fuze cavities. These cavities are swabbed with gun slushing or rust-preventive compound and must be cleaned of this and other foreign matter before a fuze is assembled.

Welded to the top of the bomb body with the first lug approximately ½ inch behind the end of the ogive of the bomb and the second lug 14 inches further to the rear, are dual suspension lugs which permit the suspension of this depth bomb in the standard Army B-7 shackle.

A hoisting lug is approximately 6 inches behind the first lug and in line with both lugs. This hoisting lug is simply an L-shaped piece of metal with its base welded to the bomb body and along the long axis of the bomb. This lug protrudes from the body approximately 1 inch and it is designed to accommodate the hoisting hook of the Navy portable bomb hoist.

If the bomb is to be used in an Army bomber requiring the use of the B-7 shackle, then this L-shaped Navy hoisting lug must be gently pried to one side or it will interfere with the operation of the B-7 shackle. The lug may be bent to one side and out of alinement with the B-7 shackle by the insertion of a piece of drill rod into the hoisting hole and applying a bending force to the lug. Under no condition may a hammer or similar instrument be used to pound the lug to one side.

If this bomb is to be suspended from the belly of certain planes, the single suspension lug will be used. This lug is located 180 degrees away from the hoisting lug and at the approximate center of gravity

at an altitude of 50 feet without appreciable danger or ricochet, provided the airspeed at release does not exceed 200 knots.

In general, the average horizontal component of the underwater travel to a depth of 25 feet will be between 30 and 40 feet, and the time of underwater travel to a depth of 25 feet will be between 2 and 4 seconds for the 325-pound depth bomb.

Tests have also shown that the depth bombs equipped with flat noses have considerably less tendency to deflect to the right or left of a normal course in underwater travel. Average deflections from the normal point of detonation (25-foot setting) are approximately 7 feet for the 325-pound depth bomb with a maximum of 15 feet occurring in some cases.

The air trajectories of the depth bomb will be slightly affected by the addition of the flat nose attachments. When aircraft bombs equipped with flat nose attachments are carried on external racks, some reduction in air speed due to increased drag of the flat noses will occur.

The flat nose attachment consists of a metal nose attachment which fits around the adapter of the Nose Fuze AN-Mk. 219 or the nose of the bomb itself. The metal attachment has openings in it to allow for the addition of a plaster filling which fills the space between it and the round nose of the bomb body. The entire bomb weight is increased by approximately 44 pounds, of which 34 pounds consist of the plaster filling and the other 10 pounds consist of the flat nose attachment.

Complete Round Description. The total length of this bomb is 52.48 inches and the diameter is 15 inches. The case is only 0.062 inch thick. The weight of the metal parts is 85 pounds while the TNT filler weighs 243 pounds. Total weight of this bomb is 325 pounds. Percentage of filler is approximately 75.8 percent.

Fuzes. This bomb is fuzed with the Transverse Fuze AN-Mk. 234. Substitute or alternate fuzes are the transverse AN-Mk. 224 or its modifications, or the Nose Fuze AN-Mk. 219 or AN-Mk. 221.

Complete Round Components. A complete round is made up of the following components:

BOMB, AN-Mk. 17M1, 325 lb (1)
Fin assembly (1)
Fuze, nose, or transverse (1)
Arming wire (1)

NEW 325- TO 350-POUND DEPTH BOMBS.

Following the development of 325-pound AN-Mk.17M1 Depth Bombs, a new series was issued. These new bombs differ only in the shape of the nose or in the kind of filler, or may differ in both

these ways. The difference in filler has caused an increased weight so that the bombs are described as 350-pound depth bombs. The flat nose as previously described was added to prevent ricochet. A summary of the bombs and the main differences are indicated in the following table.

Bomb Nomenclature	Shape of Nose	Bomb Racks	Filler
325 lb AN-Mk. 17M1	Round	External or Internal	TNT
325 lb AN-Mk. 17M1	Flat (special attachment)	Internal	TNT
325 lb AN-Mk. 41	Flat	Internal	TNT
350 lb AN-Mk. 44	Round	External or Internal	Torpex *
350 lb AN-Mk. 47	Flat	Internal	Torpex *

*44% cyclonite, 37% TNT, 18% powdered aluminum and 1% beeswax. Much more brisant than TNT.

BOMB, DEPTH, 650-POUND, AN-MK. 29.

General. The 650-pound depth bomb is used for undersea craft or surface vessels. It can be identified by the blunt nose, sheet metal case, and trunnion mounts, in addition to the double and single suspension lugs. The trunnion mounts are at the center of gravity and on opposite sides of the case 90 degrees from the double and single suspension lugs. The mounts are closed by a threaded plug. The trunnions are used to mount the depth charge on dive bomb suspension racks. When used with the AN-Mk. 224 Fuze, an extender is provided to make the fuze fit the longer transverse tube.

Description. Complete length of this bomb is 74.1 inches and the diameter is 17.07 inches. The bomb case is 0.125 inch thick. The metal parts of this bomb weigh 193 pounds while the explosive filler weighs 464 pounds. Total weight of this bomb is 657 pounds, 70.6 percent being explosive filler.

Fuzes. The standard fuzes provided for this bomb are the Tail Fuze AN-Mk. 229M1 and the Transverse Fuze AN-Mk. 234. Alternate fuzes are either nose or transverse. Those provided for the nose are the AN-Mk. 219, AN-Mk. 221, AN-M103, or M103. The alternate transverse fuze is the AN-Mk. 224 with its modifications. The M103 or AN-M103 must be equipped with special vane when used on flat-nose bombs. The standard vane will not cause the fuze to arm.

Section II. 2.25-INCH ROCKETS

59. General

a. General Discussion. The 2.25-inch, fin-stabilized, subcaliber aircraft rocket (fig. 35) is a Navy type used by the United States Air Force for forward-firing from an aircraft rocket launcher. The rocket is used as practice ammunition in place of the 5.0-inch rocket HVAR which it simulates ballistically. The 2.25-inch rocket is fired from the 5.0-inch rocket launcher Mk 5 adapted for this use by adapter Mk 6. Two lug buttons attached to the motor body of the rocket engage the adapter. Electrical energy to fire the rocket is derived from the electrical system of the aircraft. The rocket consists of an inert head and a motor.

b. Head. The head Mk 3 Mod 2 and other Mods are hollow and threaded externally at the rear to receive the motor.

c. Motor. The motor Mk 11 Mod 0 or 1, Mk 15 Mod 0, or Mk 16 Mod 5 is internally threaded to engage the head. It consists of the motor tube, front closing disk, igniter, propellant, grid, nozzle, nozzle closure electrical cable and igniter plug, suspension buttons and fin assembly. The motor contains the igniter, propellant and grid to position the propellant. Assembled to the motor tube are the nozzle, fin assembly and suspension buttons.

(1) *Fin assembly.* The fin assembly, which is welded to the rear end of the motor, is a sleeve with four equally spaced rectangular fins extending radially.

(2) *Propellant.* The propellant is a single grain Mk 16 Mod 0 or 1 of ballistite. See chapter 4 for detailed information.

(3) *Igniter.* The igniter Mk 112 and Mods is a plastic case containing 14 grams of FFFG black powder and an electric squib. Two lead wires from the squib extend from the igniter passing through the perforation in the propellent grain to the nozzle where they are connected to the electrical cable.

(4) *Igniter plug.* The igniter plug used with motors Mk 11 Mod 0 or 1 and Mk 15 Mod 0 is a Navy type (two-pronged). The igniter plug used with motor Mk 16 and Mods is an Army type (phone-jack).

d. Identification. The rocket is identified by the two suspension buttons on the motor (fig. 35). Painting and marking for identification are in accordance with the scheme prescribed in TM 9–1900.

e. Packing. The rockets are packed as complete rockets (assembled or unassembled), either eight rockets to a wooden box, four rockets to a metal box, or two metal boxes containing four rockets overpacked in a wooden box. Packing and shipping data appear in SM 9–5–1340.

Table III. Physical and Ballistic Data for Aircraft Type Rockets

Size of rocket	2.25-inch		
Army Complete Round Nomenclature.	ROCKET, PRACTICE 2.25-INCH: SCAR.	ROCKET, PRACTICE 2.25-INCH: SCAR.	ROCKET, PRACTICE 2.25-INCH: SCAR.
Navy Complete Round Nomenclature.	2.25-inch Rocket Mk 1 Mod 0 (aircraft practice).	2.25-inch Rocket Mk 4 Mod 0 (aircraft practice).	2.25-inch Rocket Mk 6 Mod 0.
HEAD—Mark and Mod	Mk 3 Mods	Mk 3 Mods	Mk 3 Mods
Length (in.)	3.75	3.75	3.75
Diameter (in.)	2.25	2.25	2.25
Weight (lb)	1.60	1.60	1.60
Type of filler	solid	solid	solid
Motor—Mark and Mod	Mk 11 Mod 0 or 1	Mk 15 Mod 0 or 2	Mk 16 Mod 4, 5, or 6
Length (in.)	26.20	26.20	26.20
Diameter (in.)	2.25	2.25	2.25
Weight (lb)	10.40	10.40	10.40
Model of propellant	Mk 16 Mod 1	Mk 16 Mod 1	Mk 16 Mod 1
Weight of propellant (lb)	1.75	1.75	1.75
FUZE—type, Mark and Mod	None	None	None
ROCKET (assembled)			
Length (in.)	29.20	29.20	29.20
Weight (lb)	12.00	12.00	12.00
Velocity (max) (fps)	11.30	11.30	
Temperature limits (° F.)	20 to 110	20 to 110	20 to 110
Burning time (static) (sec)	0.79 to 0.37	0.79 to 0.37	0.79 to 0.37
Burning time (effective) (sec)	0.64 to 0.10	0.64 to 0.10	0.64 to 0.10
Burn-out point (ft from launcher)	440 to 230	440 to 230	440 to 230

Table V. Rocket Propellant Data

Caliber of rocket	Propellant composition or model of grain [1]	Type of composition	Type of grain	Grains per rocket	Weight of propellant (lbs)	Grain length (in.)	Grain outside diameter (in.)	Web (in.)
2.0-inch	M22	Composite						
2.25-inch	Mk 16 Mod 1	Solventless	Single perforate (ribbed)	1	1.75	14.0	1.97	0.85
2.75-inch	Mk 31 Mk 43 and Mods	Solventless	Single perforate	1				
3.5-inch (old-type)	M7	Solvent	Single perforate	12	0.35 [2]	5.0	0.38	
3.5-inch (new-type)	M7	Solvent	Single perforate	19	0.44	5.7	0.33	0.096
4.5-inch (expendable launcher)	M13	Solventless	Single perforate	30	4.81	5.3	0.88	0.30
4.5-inch (multiple launcher)	M16 (T6)	Solventless	Single perforate	7	7.78 [3]	13.5		
5.0-inch (HVAR)	Mk 18 Mod 0	Solventless	Cruciform	1	23.9	39.2	4.53	1.54

[1] Grains with "Mk" and "Mod" numbers are of JPN ballistite composition.
[2] Early manufacture 0.36 pounds.
[3] M16 (series) and M17 (series) rockets have the same propellant as expendable-type 4.5-inch rockets.

CHAPTER 4

SOLID ROCKET PROPELLANTS

84. General

In order to utilize the principle described in paragraph 3, it is necessary to provide a gas-forming medium in the rocket motor. This medium is called the propellant. In large rockets it usually consists of a fuel such as alcohol and an oxidant such as liquid oxygen. These are burned in a reaction chamber to produce the gaseous products. This type of propellant is called liquid propellant. It is not used in combat rockets of the ordinary military type. Rockets treated in this manual are of the ordinary military type which employ a solid gas-producing medium called solid propellant. In this type the fuel and the oxidizer are embodied in one chemical compound or several compounds which can be mixed and formed into a single propellant element called a grain.

85. Types

There are two types of solid propellants used in standard military rockets, solvent and nonsolvent. Both types consist essentially of nitrocellulose and nitroglycerin both of which are fuel and oxidizers. Other materials are added to impart physical and chemical properties required to insure the desired performance, chemical stability, and durability. Examples of the percentage composition of the two types are—

	Solvent	*Nonsolvent*
Nitrocellulose	54.60	56.50
Nitroglycerin	35.50	28.00
Dinitrotoluene	--	11.00
Ethyl centralite	0.90	4.50
		100.00
Carbon black	1.20	0.50 (Added)
Potassium perchlorate*	7.80	--
Potassium sulphate	--	1.50 (Added)
Candilla wax	--	0.08 (Added)
	100.00	

* Containing 0.5 percent added magnesium oxide and 0.5 percent magnesium stearate.

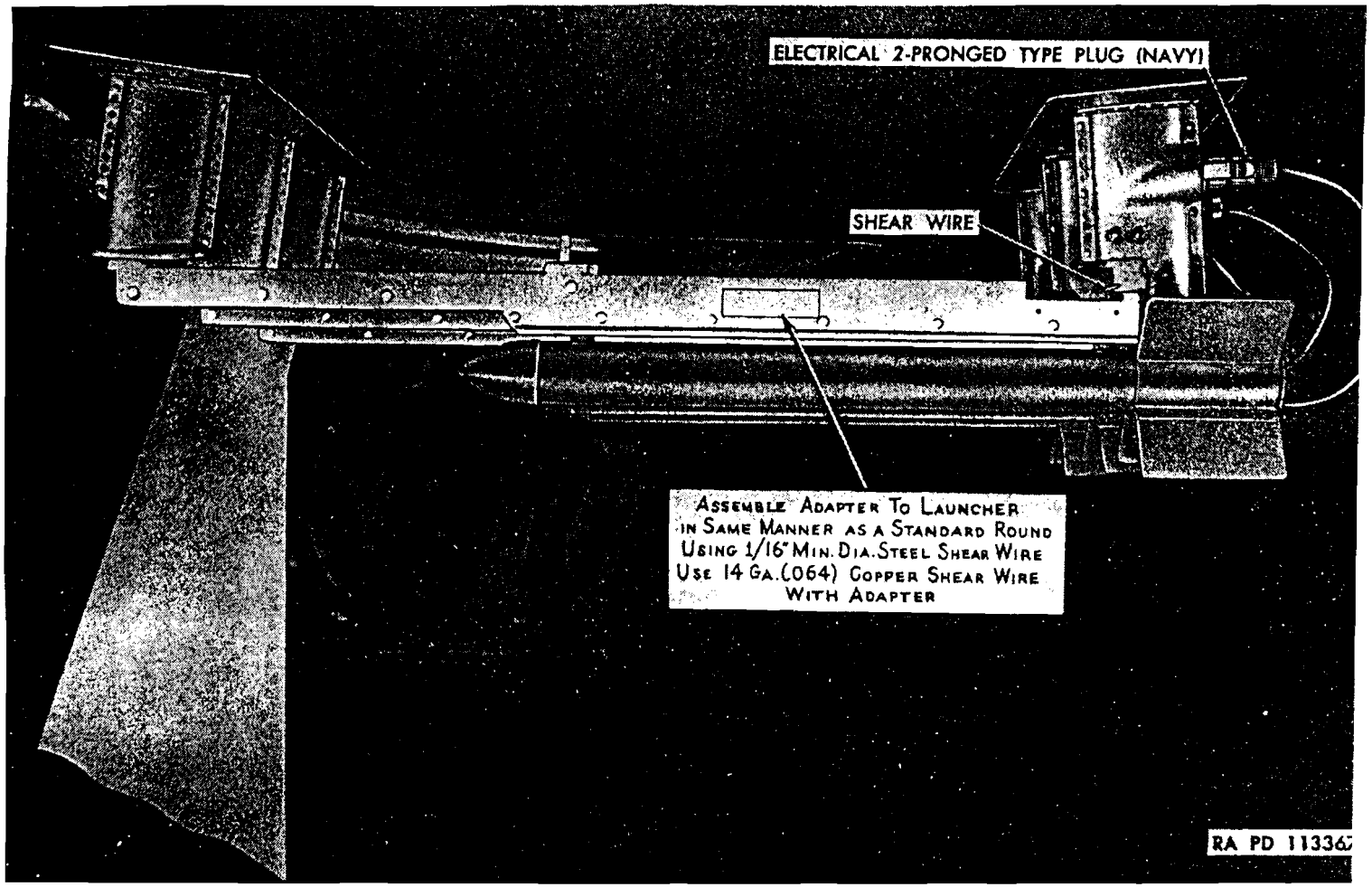


Figure 55. 2.25-inch subcaliber aircraft rocket with M6 adapter rail on post launcher.

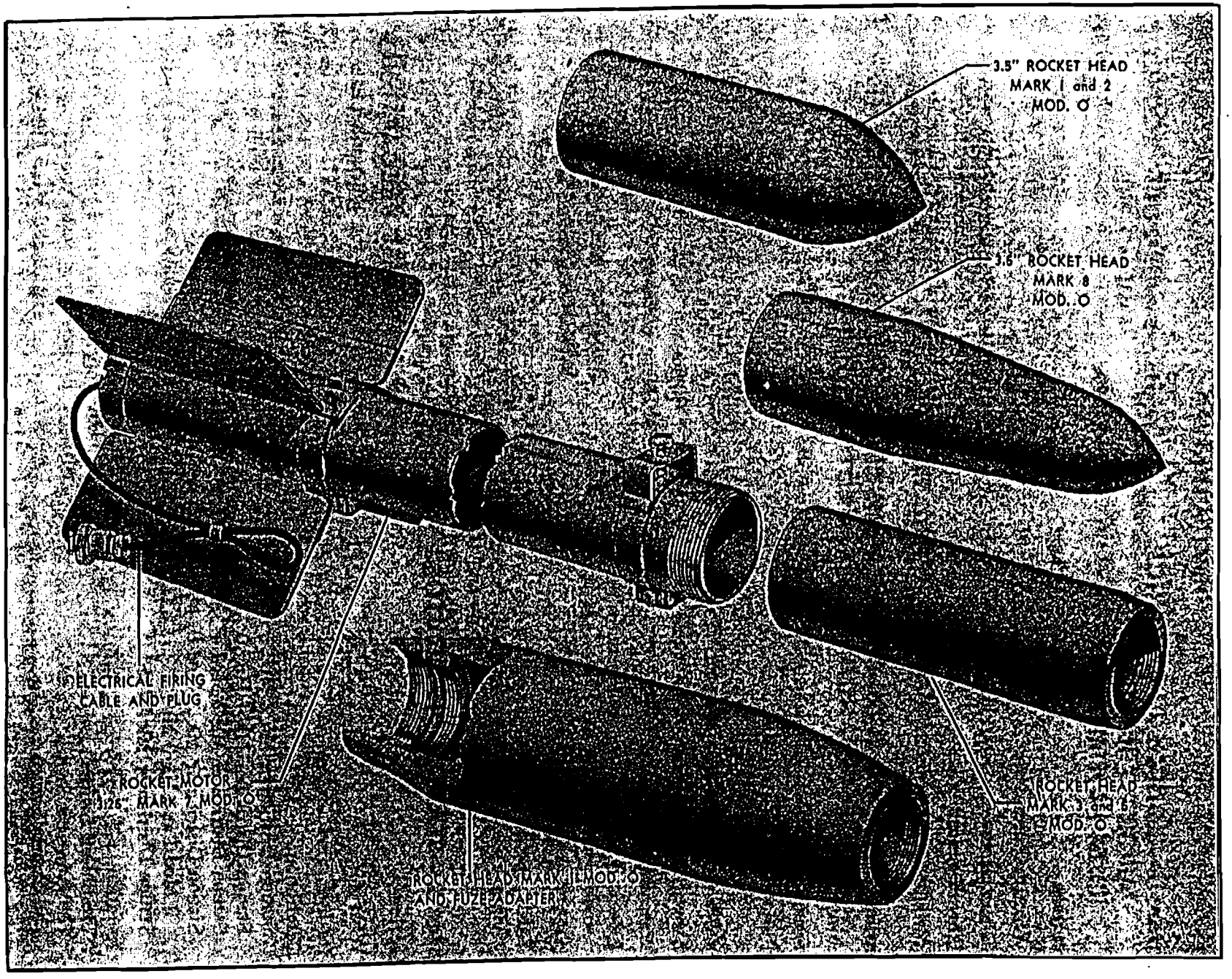


Figure 1.—3.5-Inch and 5.0-Inch Aircraft Rocket (3.25-Inch Motor)

Chapter 1

3.5 INCH AND 5.0 INCH AIRCRAFT ROCKET 3.25 INCH MOTOR

Introduction

1. What They Are

a. The 3.5-inch and the 5.0-inch Aircraft Rockets described in this pamphlet are fin-stabilizcd rockets using the 3.25-inch Motor Mark 7 Mod 0 as the propulsive unit.

2. Their Purpose

a. The rocket equipped with a 3.5-inch solid steel head is designed for penetrating the hulls of submarines and other lightly armored vessels.

b. The rockets equipped with 3.5-inch or 5.0-inch high explosive heads are intended for use against targets such as shipping, personnel, bivouac areas, and light armor.

3. How They Work

a. A rocket, ready for firing, is in position on a launcher, with connections made to an electric firing device. When the firing button is pressed, an electric impulse passes through a squib in an igniter located in the forward end of the motor tube. The squib sets off a charge of black powder in the igniter, filling the interior of the motor tube with hot burning gas under high pressure, which, in turn, raises to ignition temperature the surface of the propellent grain in the motor tube. As the propellant burns, it generates a large quantity of gas, creating and maintaining high pressure inside the tube. A force is thus exerted in all directions on the interior surface of the tube. The gas rushes out through a nozzle in the rear end of the tube, without exerting any force on the nozzle throat area. The corresponding area of the closed end forward receives the full force of the gas under pressure. Thus is developed a thrust which drives the rocket forward.

b. The propellant burns at almost constant pressure, the value of this pressure being higher if the initial temperature of the propellent grain is higher. The burning time and, therefore, the distance the projectile travels during burning, depends upon the pressure, increasing as the pressure decreases. Thus, a cold round burns for a longer time and at a lower pressure than a hot round.

4. Weights and Dimensions

a. The weights, the various combinations of components that make up a complete round, and shipping box data will be found in the charts of the physical characteristics of 3.5-inch and 5.0-inch Rockets below.

Description

5. Motor

a. **3.25-inch Rocket Motor Mark 7 Mod 0.** The fin-stabilized rockets described in this Ordnance Pamphlet use the 3.25-inch Rocket Motor Mark 7 Mod 0 which is illustrated in Figure 2. The components of the motor are as follows:

(1). FRONT SHIPPING CAP. The front shipping cap is screwed onto the front end of the motor tube.

CHART OF SHIPPING WEIGHTS, DIMENSIONS AND SHIPPING BOXES

ITEM	NO. IN BOX	BOX DIMENSIONS (INCHES)	VOL. (CU. FT.)	WEIGHT (LBS.)
3.5 -inch Head Mk 1 or 2	6	16–12–11⅜	1.28	150
3.5 -inch Head Mk 3 or 5	6	16⅜–13½–11	1.4	135.5
5.0 -inch Head Mk 1 Mod 0	2	24⅛–12⅞–7⅛	1.26	106.5
3.25-inch Motor Mk 1 Mod 0	4	52–15⅙–15 1/16	6.8	189
Nose Fuze Mk 148 *Mod 0	28	9 9/16 Diam.–13⅝"	0.57	32
Nose Fuze Mk 149 *Mod 0				

* Each Fuze comes in an individual metal can.

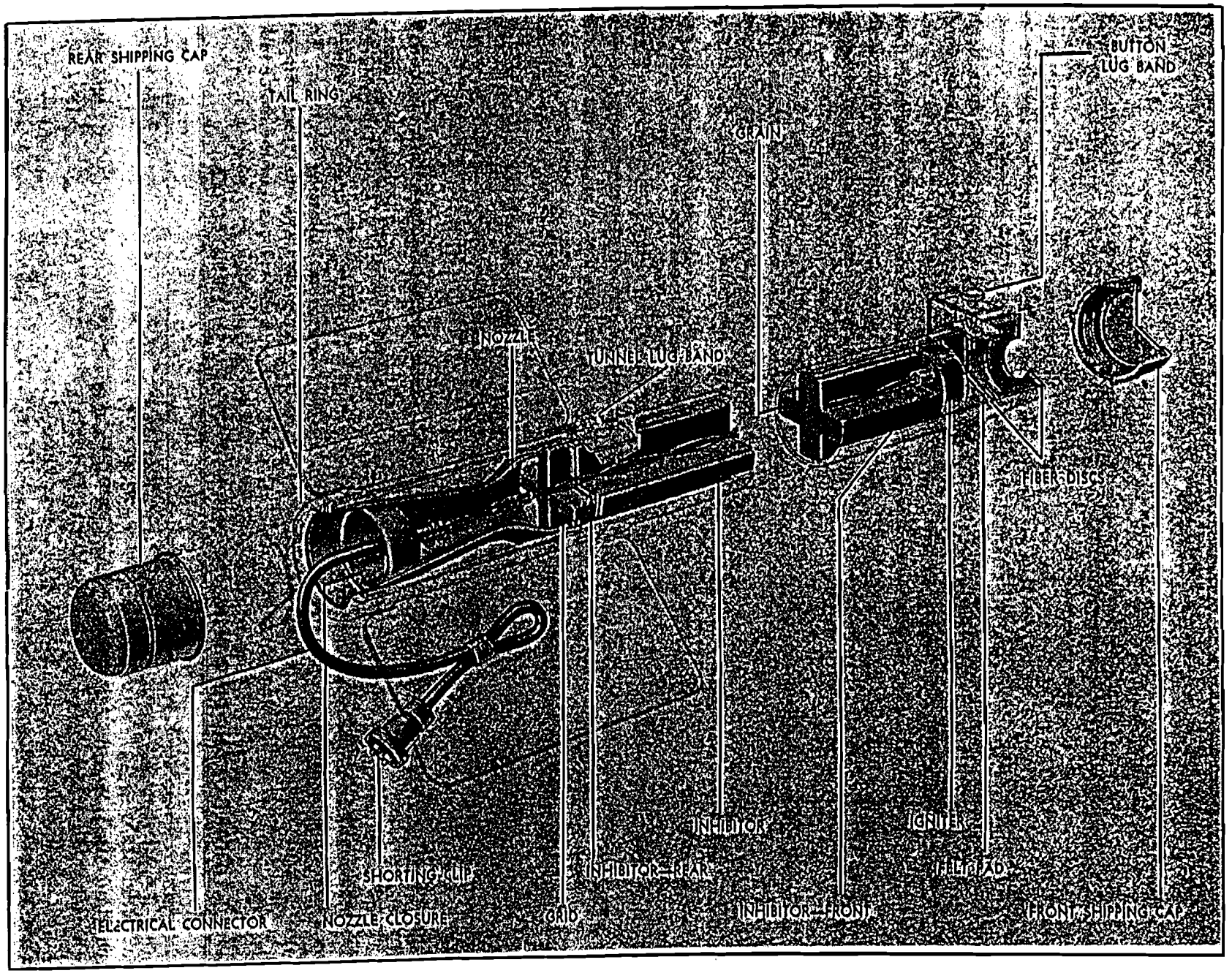


Figure 2.—3.25-Inch Rocket Motor Mark 7 Mod 0

It protects the threads on the front of the motor and seals the front end of the motor from moisture and foreign matter during shipment and stowage.

(2). CARDBOARD TUBE AND WASHERS. In the front end of the motor are several cardboard washers and a spacer tube used to fill the space remaining in the tube after the other components of the motor have been loaded. When assembling the rocket head to the motor, none of the cardboard spacers or washers are to be removed.

(3). FELT PAD. The igniter is protected from shocks by the felt pad which also takes up any changes in the length of the propellent grain due to thermal expansion. The felt pad is held in place by the cardboard washers, which are cemented in place to the interior of the motor tube.

(4). IGNITER MARK 9 MOD 0. The igniter consists of a plastic case containing black powder and an electric squib. Leads are connected to the squib and pass through the motor tube to the nozzle where they are connected to the electrical connector used in firing the rocket.

(5). INHIBITOR-FRONT. The inhibitor is made of plastic material and is cemented to the front end of the propellent grain. It aids in controlling the burning area of the propellant and, thereby, controls the pressure which is developed.

(6). PROPELLENT GRAIN MARK 13 MOD 0. The propellant is a single grain of ballistite shaped in the form of a cross. Inhibitor strips, cemented to the grain, control the burning area of the grain and, hence, the pressure developed within the motor tube.

(7). INHIBITOR-REAR. This inhibitor is made of plastic material and is cemented to the rear of the grain, thus separating the grain from the grid. Pins on the grid fit through holes in the inhibitor into recesses in the end of the grain.

(8). GRID. This is a steel support for the propellent grain having a cross-section similar to that of the propellent grain. The grid, inhibitor-rear and the propellant are prevented from rotating independently by their interlocking construction. The grid keeps the grain from moving toward the rear when ignited, where it might clog up the nozzle and prevent the gases from escaping, causing the motor tube to burst.

(9). NOZZLE. The nozzle is a steel venturi through which the gases flow.

(10). NOZZLE CLOSURE. The nozzle is sealed by the nozzle closure which provides an air-tight and moisture proof seal for the nozzle end of the motor. The electrical connector cable is crimped and sealed in place in the nozzle closure.

(11). ELECTRICAL CONNECTOR. The electrical connector is an electric cable that terminates in a male plug for plugging into the outlet of a launcher. In shipment, the plug and the cable are curled up and placed in the nozzle and enclosed by the rear shipping cap.

(12). REAR SHIPPING CAP. This is a metal cup which protects the electrical connector during shipment and stowage and is held in place by the tail ring. The cap is removed when the rocket is assembled. Both the front and rear shipping caps will blow out if the motor is accidentally ignited. Therefore, in case of accidental ignition, the rocket motor will be non-propulsive and will be a fire hazard only.

(13). TAIL RING. The tail ring holds the rear shipping cap in place during shipment and prevents damage to the threads. It also serves to hold the fin assembly in place when it is installed on the rocket motor.

(14). LUG BANDS. The lug bands are secured to the motor tube to suspend the round from a launcher. Rocket motors, as currently issued, are equipped with five-inch button lug bands on the motor and a tunnel lug band included in the shipping box. When present depot stocks of motors, equipped as above, are exhausted, shipments will be made with a button lug band on the front and a tunnel lug band on the rear of the motor, with an extra button lug band included in the box.

(15). FIN ASSEMBLY. The fin assembly consists of a metal sleeve with four equally spaced rectangular fins projecting radially from it. The sleeve slides over the rear end of the motor and is secured by screwing on the tail ring. The rear lug band aligns the fins and acts as the forward stop for the fin assembly sleeve. The fin assembly is reversible and either end may be slipped onto the motor tube.

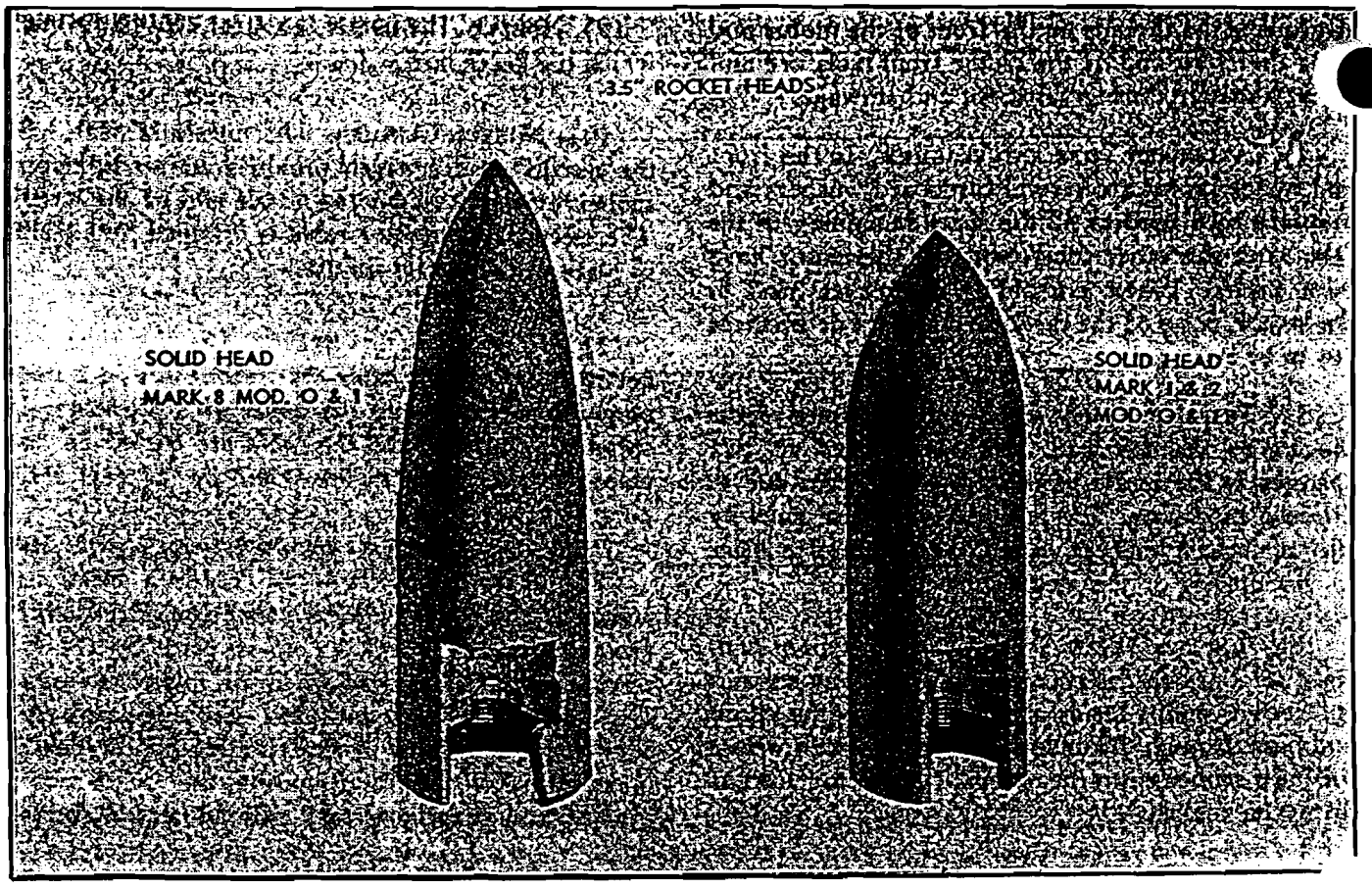


Figure 3.—3.5-Inch Rocket Heads—Solid

6. Heads

a. **3.5-inch Rocket Head Mark 1 Mod 0.** This head is a 20-pound solid steel shot with an ogive radius of 5 inches and a total length of 10.35 inches. When attached to the 3.25-inch Rocket Motor Mark 7 Mod 0 this head forms a projectile for firing against submarines and is capable of penetrating up to 1.5 inches of mild steel at normal incidence. The lethal underwater range is approximately 60 feet when the projectile enters the water at an angle of about 20 degrees. The lethal range depends upon the rocket velocity. This velocity is the sum of the plane speed and the velocity imparted to the rocket by the gas jet issuing from the nozzle.

b. **3.5-inch Rocket Head Mark 2 Mod 0.** This head is identical in every respect to the 3.5 Rocket Head Mark 1 Mod 0.

c. **3.5-inch Rocket Head Mark 8 Mod 0.** This head is a 20-pound solid steel shot 11.75 inches long. It differs from the Mark 2 in that a double ogive is incorporated in its design. When fired at entry angles of 20 degrees or less this projectile has a lethal underwater range of about 120 feet.

d. **3.5-inch Rocket Head Mark 3 Mod 0.** This head carries a high explosive charge. When filled with 2.3 lbs. of high explosive and fitted with a nose fuze, the head weighs about 20 lbs. Combined with the 3.25-inch Rocket Motor Mark 7 Mod 0, this head forms a projectile with approximately the same drag coefficients as the rounds equipped with 20-lb. solid steel heads and, hence, has about the same air trajectory. This head may be used with either Nose Fuze Mark 148 Mod 0 or 149 Mod 0. No provision is made for use of a base fuze with this head.

e. **3.5-inch Rocket Head Mark 5 Mod 0.** This head is identical in every respect to the 3.5-inch Rocket Head Mark 3 Mod 0.

f. **5.0-inch Rocket Head Mark 1 Mod 0.** This head is a high explosive shell weighing about 46 lbs. when filled with TNT and equipped with both base and nose fuzes. This body may be shipped wi[illegible] conical nose plug installed, and when thus use[illegible]

have the fragmentation and penetration characteristics, at comparable velocities, of the 5"/38 common AA projectile, of which it is a modified design. Future issues of 5.0-inch Head Mark 1 Mod 0 will have mainly flat nose plugs installed for shipping. The flat plug must be removed before use and the Fuze Mark 149 Mod 0 installed.

Until the Nose Fuze Mark 149 Mod 0 replaces completely the Nose Fuze Mark 148 Mod 0 an adapter for accommodating Nose Fuze Mark 148 Mod 0 in the fuze seat liner ring will be included in the shipping box with each head shipped. All 5.0-inch Rocket Heads Mark 1 Mod 0 are shipped with a base fuze installed and staked in place. Under no circumstances should an attempt be made to remove the base fuze from the head.

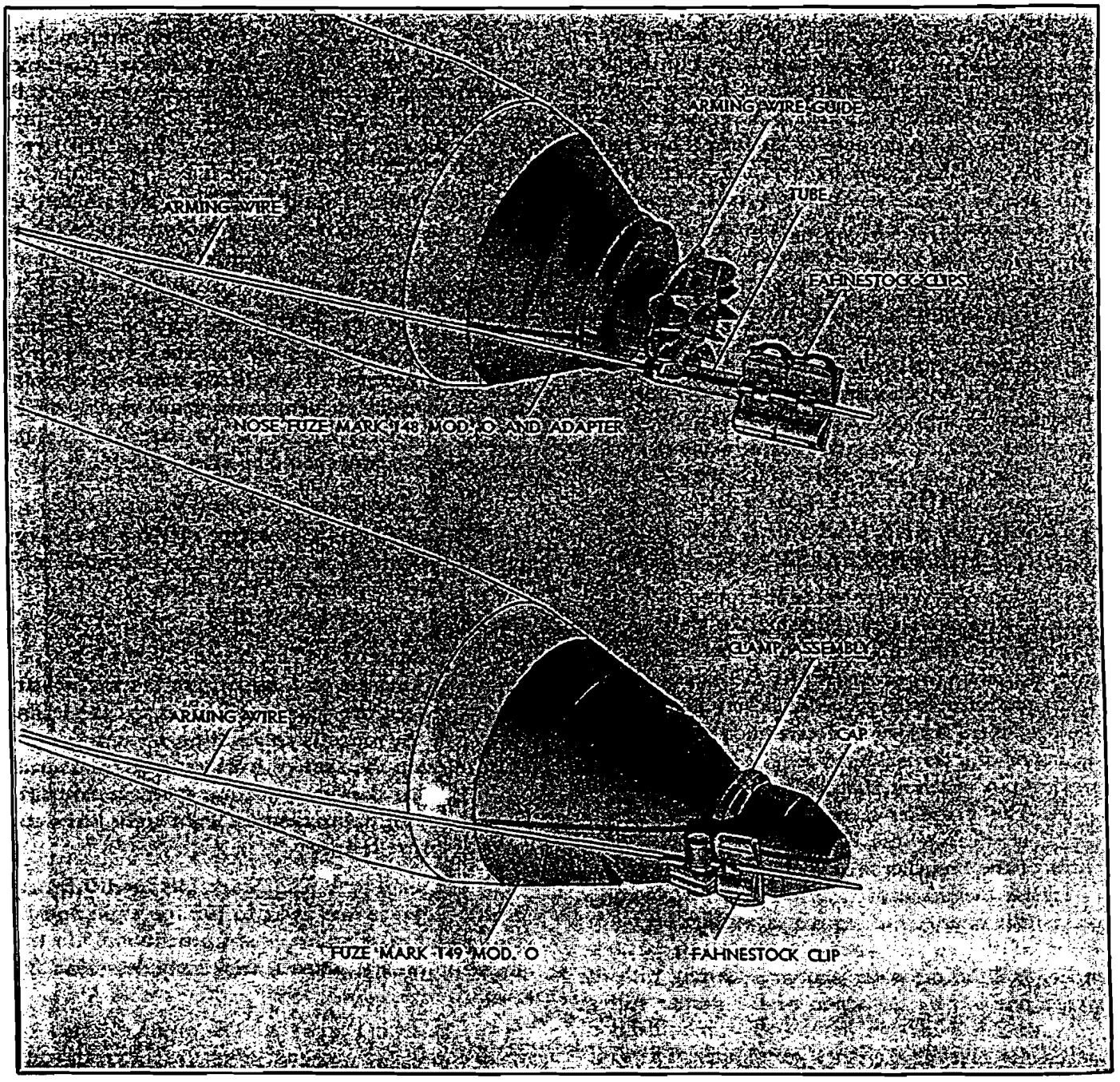


Figure 4.—3.5-Inch Rocket Heads with Fuzes, HE

7. Fuzes

a. Nose Fuze Mark 149 Mod 0

(1). If available, O.P. 1017 should be studied for a more complete description of this fuze.

(2). DESCRIPTION. This fuze is an air arming, impact firing fuze designed for use with 3.5-inch and 5.0-inch Forward Firing Aircraft Rockets. The fuze body fits directly into the fuze seat liner ring in the nose of the rocket without requiring an adapter.

In the unarmed position, the firing pin is screwed down alongside the detonator shutter holding it in a safe position. The propeller is attached to the firing pin and is prevented from turning by the propeller locking pin, which is attached to the propeller locking pellet. The cap on the nose of the fuze is held tightly in place on the gasket by a clamp assembly held together by a safety wire, or a fuze arming wire when the round is loaded on a launcher, and is ready to fire. This cap prevents exposure of the fuze to the weather and is removed only when the projectile is fired. A cap spring located under the cap bears on the top of the propeller, preventing it from turning as long as the cap is secured by the safety or arming wire. When an assembled round is loaded on the launcher the arming wire is first inserted in a hole provided next to the safety wire in the clamp pin and bushing assembly, after which the safety wire is removed. THIS ORDER MUST NOT BE REVERSED OR THE CAP WILL FLY OFF EXPOSING THE PROPELLER.

(3). HOW IT WORKS. When the round is fired, the arming wire pulls free, releasing the clamp assembly, allowing the cap spring to throw off the cap, thus exposing the propeller. At the same time, acceleration retracts the propeller locking pin, releasing the propeller. As long as acceleration continues, the detonator shutter is locked in place by the shutter locking pin which is attached to the shutter locking pellet. The propeller turns outward in a clockwise direction, clearing the detonator shutter. About 8 turns of the propeller are required for the firing pin to release the detonator shutter. When acceleration ceases, the shutter locking pin is withdrawn by the action of the setback spring on the shutter locking pellet, and the detonator shutter is swung into the armed position by the action of the shutter spring, provided the firing pin has by this time advanced sufficiently to clear the detonator shutter. The shutter is locked in the armed position by the detent engaging in a hole in the firing pin guide. The firing pin jams and stops turning when the end of the threads reach the nose plate. Upon impact, the firing pin shears the threads in the nose plate and is driven into the detonator, thus setting off the explosive train.

(4). SENSITIVITY. The Nose Fuze Mark 149 Mod 0 fires at impact angles as low as 5° to 10° for water and for land targets which allow slight penetration. On hard targets it fires at impact angles not less than 20° to 25°.

(5). ARMING DISTANCE. Since the shutter is held in the safe position by the shutter locking pin during acceleration, arming will not occur until about 0.1 second after acceleration ceases. Therefore the arming distance of the fuze will vary from 200 feet to 800 feet depending upon the initial propellant temperature at which the round is fired and whether the fuze is in a 3.5-inch or 5.0-inch Rocket. The shorter distances correspond to a temperature of 130°F. and the longer distance to 0°F.

(6). SAFE FIRING. The fuze may be fired "safe" by releasing the arming wire so that it stays with the round. In firing the 5.0-inch AR it may be desirable to have a delay in detonation upon impact, such a delay being incorporated in the base fuze. In this case the nose fuze should be fired "safe."

b. Nose Fuze Mark 148 Mod 0

(1). This fuze is a prototype of Nose Fuze Mark 149 Mod 0 and is an adaption of a fuze used in another rocket application. The Mark 148 Mod 0 is described in detail in O.P. 1017.

(2). DESCRIPTION. The Mark 148 Mod 0 has no shutter locking pin and, aside from the friction that exists between the detonator shutter and the lead-in disc while the round is accelerating, no means is provided to stop the shutter from assuming the armed position once the firing pin has freed it. After the fuze has made approximately eight right turns outward, the fuze is armed.

(3). SENSITIVITY. The Mark 148 Mod 0 fires at impact angles as low as 5° to 10° for water and for land targets which allow slight penetration. On land targets it fires at impact angles not less than 20° to 25°.

(4). ARMING DISTANCE. The arming distance is variable for two reasons: First, as aircraft speed increases, the torque on the propeller is increase thus reducing the time required for the firing pin

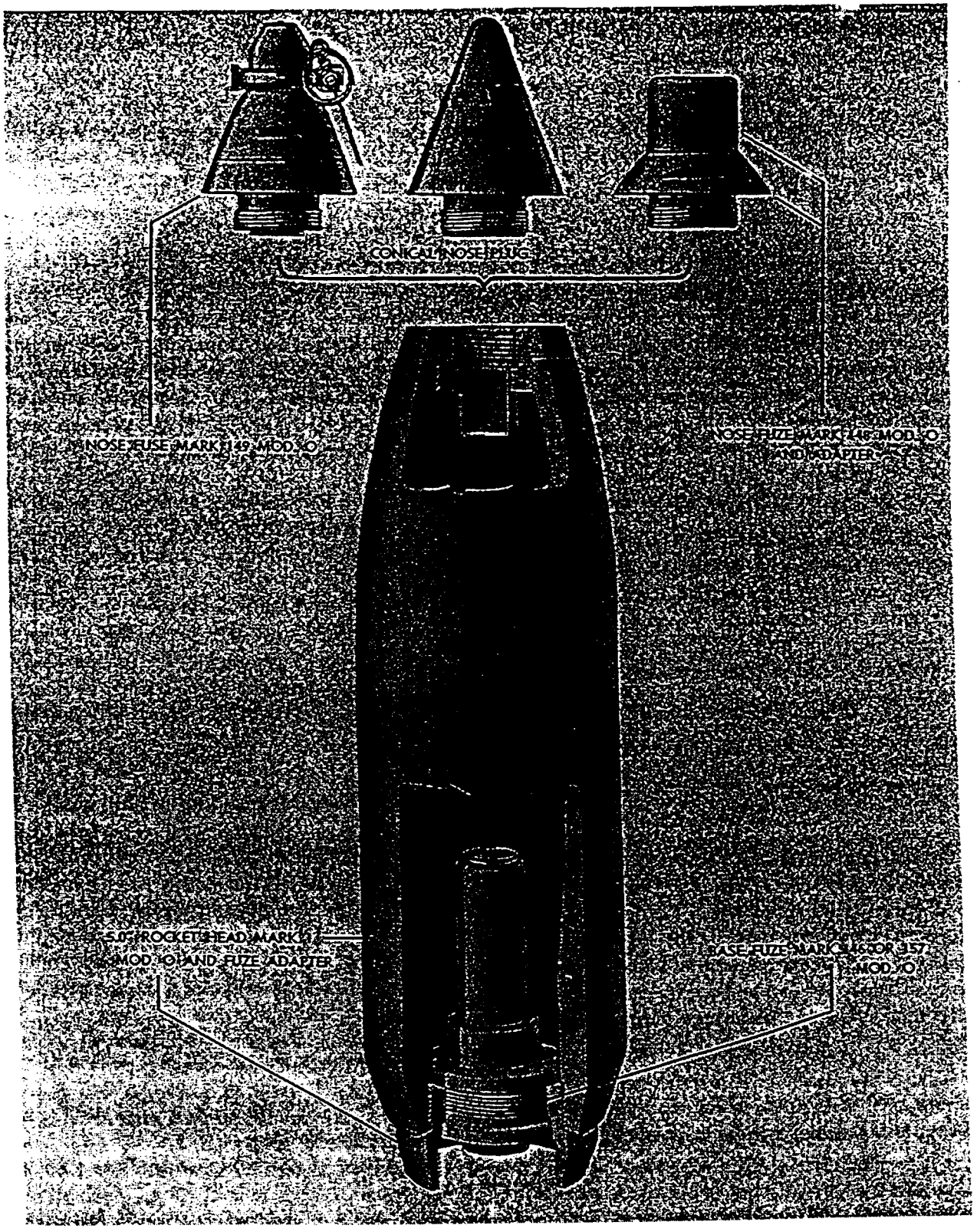


Figure 6.—5.0-Inch Rocket Head Mark 1 Mod 0 and Fuzes

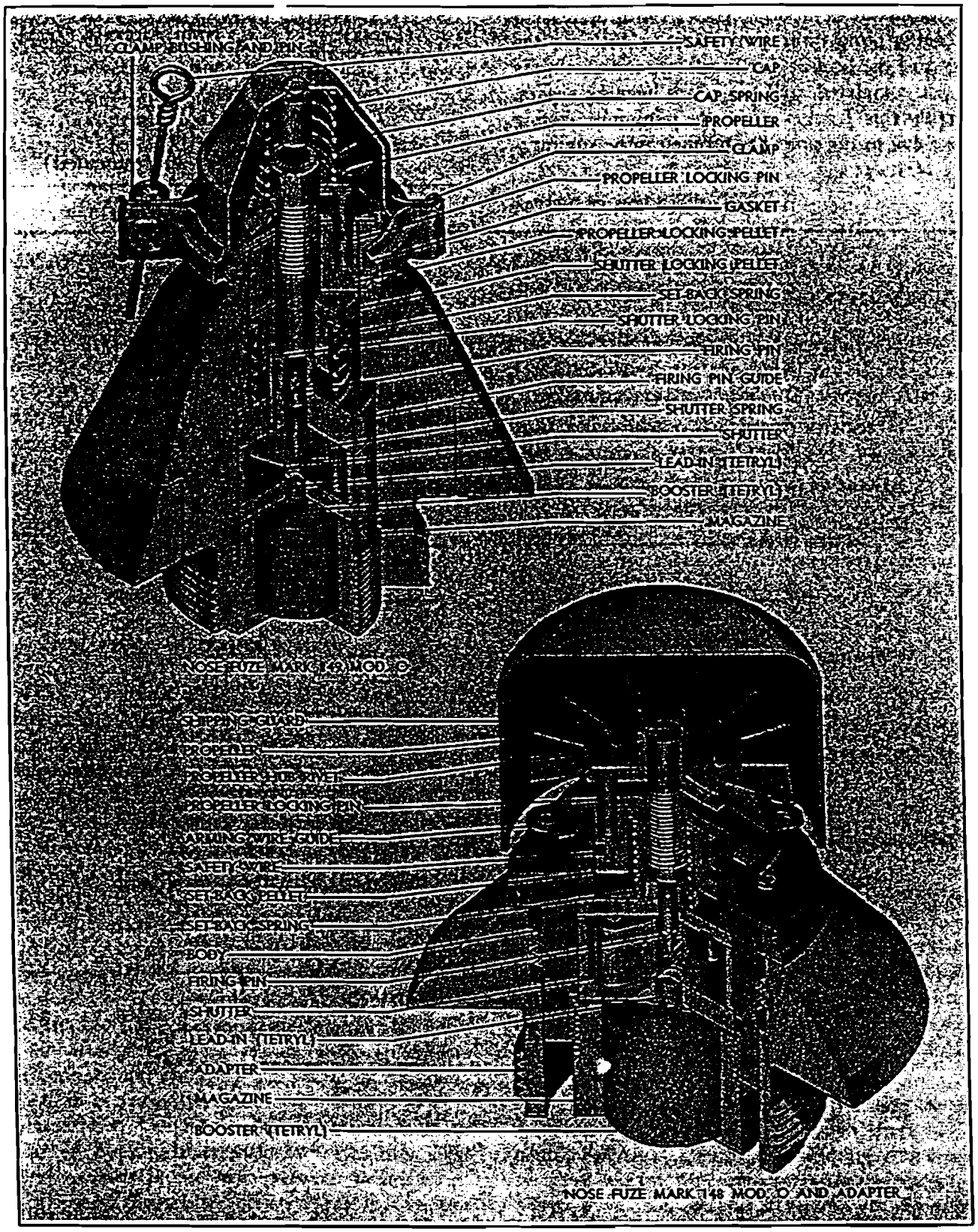


Figure 7.—Nose Fuze Mark 149 Mod 0 and Mark 148 Mod 0

free the detonator shutter; Seccnd, as mentioned above, as the acceleration increases (with increasing initial firing temperature), the friction between the shutter and the lead-in disc increases, and arming is often not completed until propellant burning ceases. Neglecting this friction effect, the minimum arming distance due to the propeller torque can be summarized as follows:

Aircraft Speed (knots)	Minimum Arming Distance from Aircraft (feet)
0	300
150	150
200	125
350	40 (estimated)

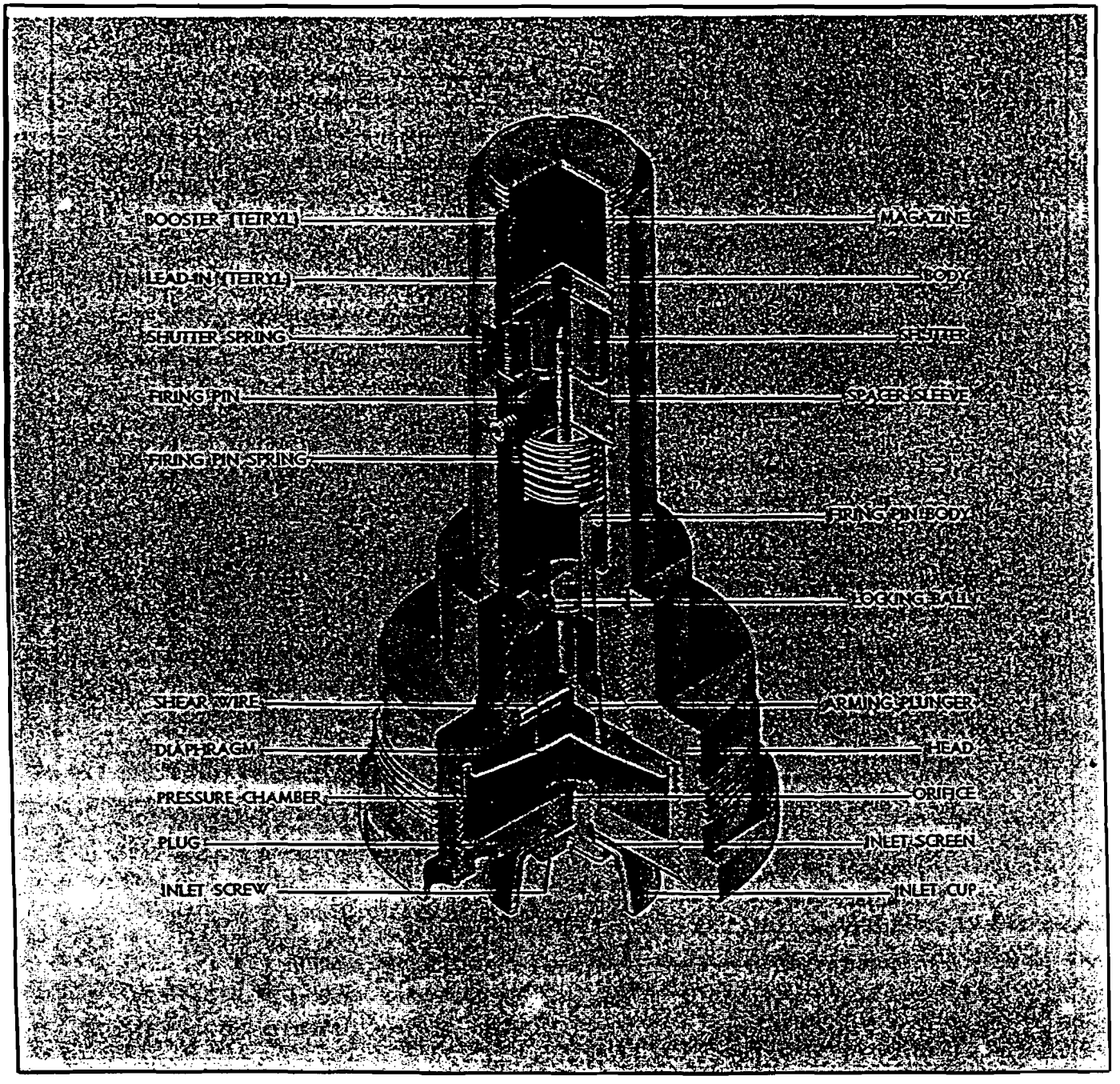


Figure 8.—Base Fuze Mark 146 Mod 0

If frictional forces are large enough to hold the detonator shutter, arming will be delayed until burning ceases. At propellant temperature of 0°F. the burning distances are about 800 feet and 530 feet for the 3.5-inch and 5.0-inch AR respectively. At propellant temperature of 130°F. burning distances are about 320 feet and 195 feet for the 3.5-inch and 5.0-inch AR respectively.

(5). Safe Firing. The Nose Fuze Mark 148 Mod 0 is fired "safe" in the same manner as the Nose Fuze Mark 149 Mod 0.

c. **Base Fuze Mark 146 Mod 0**

(1). Description. The 5.0-inch Aircraft Rocket is equipped with a base fuze. The fuze is shipped installed in the head and no attempt should be made to remove it therefrom. The fuze screws into an adapter in the base of the 5.0-inch Rocket Head Mark 1 Mod 0. The gasket and luting on the threads make a gas-tight seal between the motor and the interior of the head. The exterior surface of the diaphragm of the fuze is exposed to the front end of the rocket motor. The fuze body extends into a cavity of the TNT filler of the rocket head.

(2). How It Works. Gases from the rocket motor enter the pressure chamber through a small orifice in the inlet screw. Debris from the rocket motor is filtered out by the inlet screw. When the pressure in the chamber reaches a value of 300 #/in² (when burning is about half completed) the diaphragm collapses, forcing the arming plunger down, and shearing the wire, which holds the arming plunger in place. Movement of the plunger releases the locking ball, which, in the unarmed condition, holds the firing pin body in place, and allows the latter to move toward the rear under the force of its own inertia and action of the firing pin spring. The firing pin is thus withdrawn from the shutter which, in the unarmed condition, is locked in the safe position. During acceleration, the inertia of the shutter forces it back against the firing pin guide, compressing the shutter spring and engaging the shutter locking pin in a hold in the firing pin guide. About midway during acceleration, the firing pin is withdrawn from the shutter, but the latter, held by the shutter locking pin, remains in the safe position. When acceleration ceases, the shutter spring forces the shutter forward, disengaging the shutter locking pin from the hole in the firing pin guide. The shutter spring then forces the shutter to swing into the armed position where it is locked by the detent. Upon impact, inertia of the firing pin body drives the firing pin into the detonator, setting off the explosive train.

(3). The arming plunger and the 0.057-inch phosphor bronze shear wire make the fuze in a fully loaded 5.0-inch AR safe from arming when dropped from any height up to 40 feet. The fuze fires with a slight inherent delay. A minimum deceleration of 10g is sufficient to fire the fuze.

(4). Arming Distance. Since arming of the fuze is not initiated until half the burning is over, the Fuze Mark 146 should not arm if the rocket motor blows up on the launcher. The burning distance and, therefore, the arming distance relative to the aircraft will vary with the initial propellent temperature, arming occurring about 0.1 second after acceleration has ceased:

Initial Propellent Temperature	0°F.	70°F.	135°F.
Arming Distance (Feet).....	575	350	250

Caution:

There is no means of determining by visual inspection if a base fuze is armed. If, for any reason, a base fuze is thought to be armed, the body must be disposed of by lowering it gently, tailfirst, into deep water.

d. **Base Fuze Mark 157 Mod 0**

(1). This fuze is identical to the Mark 146 Mod 0 in every respect except that the Mark 157 Mod 0 has a delay detonator which results in a .020 seconds delay in firing after the explosive train is initiated.

(2). Read carefully the Special Fuze Precautions on page 34 before handling these fuzes.

8. Stowage of Components of the Round

a. **3.25-inch Rocket Motor Mark 7 Mod 0.** The regulations applicable to the stowage of smokeless powder apply also to the stowage of rocket motors. In addition, rocket motors are not to be stowed in or near the same compartment with radio apparatus or antenna leads.

(1). Rocket motors are currently being issued in wood shipping containers. Although these shipping containers are not waterproof and are considered to be a fire hazard when stowed in magazines, they do afford protection for the rocket motors. Stowage of rocket motors in the wood containers is mandatory unless the regulations for unboxed stowage are satisfied.

(2). Rocket motors which have been issued in wood containers may be stowed unboxed, provided the motors are: (a) suitably supported at two points, (b) adequately protected against any motion or shifting, (c) not stacked barrel fashion or in any manner wherein the motors would rest upon each other, (d) stowed in a horizontal position, (e) given adequate protection to the electric system so that no breaks or short circuits will result from the unboxed stowage, (f) protected sufficiently so that external fittings, such as lugs, lug bands, etc., may not be damaged, and (g) suitably protected against deformation of metal parts so as to avoid damage or dislocation of the propellent grain.

(3) The issue of rocket motors in wood containers is an interim measure. It is planned eventually to issue the motors in metal containers. These containers will (a) be air tight and moisture proof, (b) adequately protect the electrical system, (c) prevent damage to metal parts, (d) be suitable for stowing motors on shipboard for long periods of time if the magazines are fitted out to conform with the requirements specified in the Bureau of Ordnance Manual for stowage of smokeless powder and (e) furnish adequate protection in all respects for rocket motors. When rockets are received in the metal containers it will be mandatory to stow the rockets in the magazines in these containers. The metal containers will be designed so that they can be stacked barrel fashion and it will be feasible to remove the cover from any container and withdraw the rocket motor without disturbing the pile.

(4). 3.25-inch Rocket Motors Mark 7 Mod 0 are shipped without fins attached. The fins are packed in the space between the four motors. Various combinations of lug bands will be encountered for some time, but eventually a button lug band will be installed on the front end of the motor and a tunnel lug band on the rear end.

b. **3.5-inch Rocket Heads Mark 1, Mark 2, and Mark 8 and Mods.** These heads are solid steel and contain no fuze or explosives of any kind. Stowage should be provided for 3.5-inch Heads Mks. 1, 2, and 8 and Mods. aboard ship in accordance with the requirements specified by article 14C24 of the Bureau of Ordnance Manual (1943 edition) for inert ammunition components.

c. **3.5-inch Rocket Heads Mark 3 Mod 0 (or Mark 5) and 5.0-inch Rocket Head Mark 1.** These heads must be stowed in high explosive magazines. The 5.0-inch HE heads are to be removed from their shipping boxes and stowed in magazines in racks or bins similar to those provided for 5-inch-/38 AA Common projectiles. The 3.5-inch HE heads are to be stowed in the same manner in the same or similar magazines in bins of proper dimensions. In shipment, the front end of the high explosive head is equipped with a dummy nose plug. When it is desired to use a nose fuze, either the Nose Fuze Mark 148 Mod 0 or Mark 149 Mod 0 may be inserted after removal of the nose plug.

d. **Nose Fuze Mark 148 Mod 0 and Mark 149 Mod 0.** Nose Fuzes should be stowed in regular bomb fuze magazines in the individual containers in which they are shipped.

e. **Base Fuzes.** Base fuzes come staked in place in the base of the heads and are stowed with the heads. No attempt should be made to remove the base fuze from the rocket head.

9. Assembly of the Rockets

a. **Assembly Equipment.**

(1). The Bomb Skid Adapter Mk 3 Mod 0 or the Rocket Assembly Vise Mark 1 Mod 0 should be used for assembling the rocket. Provided neither of these is available, some alternate method should be used to hold securely the rocket motor without injury to the motor tube.

(2). Bomb Skid Adapter Mk 3 Mod 0—Rocket Motors are placed on the supports of the Adapter, alternating the direction in which they are pointing. The lug bands of the rocket motor fit into the slots of the support arms and prevent the motor from turning or moving fore or aft.

(3). Assembly Vise Mk 1 Mod 0—The Rocket Motor is clamped to the assembly vise which holds it in a secure, rigid position.

b. **Assembly**

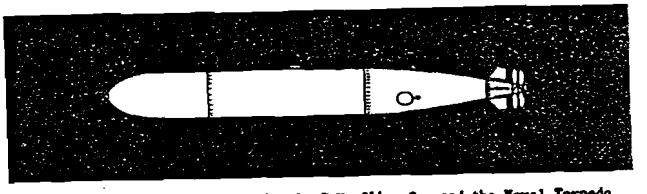
(1). 3.5-Inch Aircraft Rocket with Solid Steel Head

(a). Unscrew the tail ring and remove the rear shipping cap which protects the electrical connector in the rear of the motor. CAUTION: Leave the shorting clip on the plug pins, as accidental ignition will fire the round at full velocity. Be careful not to break the nozzle closure or damage the electrical connector cable and plug during subsequent operations.

Torpedo Mk10

DEVELOPMENT DATE:
1915

APPROXIMATE IN-SERVICE DATES:
1915-1945



Torpedo Mk 10 was developed by the E.W. Bliss Co. and the Naval Torpedo Station, Newport, R.I., and produced in 1915 by the Torpedo Station, to be used as a fast, short-range, antisurface ship torpedo. The Mk 10 featured the largest payload (warhead of 497 pounds) of any torpedo developed up to that time. Used in R- and S-class submarines after World War I, this torpedo saw service in the early years of the second World War.

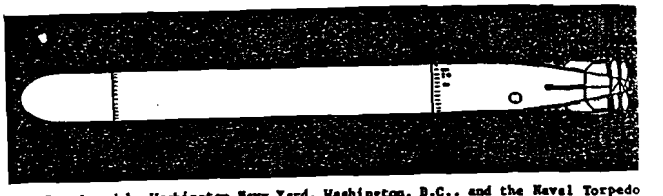
CHARACTERISTICS

PHYSICAL		PERFORMANCE	
Length	195 inches	Speed	36 knots
Diameter	21 inches	Range	3500 yards
Weight	2215 pounds		
Propulsion	Steam turbine, alcohol		
Enabling	No		
Guidance	Gyro, straight running		
Flask Air Pressure	2500 psi		
Homing	None		
FC Settings	Mechanical		
Warhead	Mk 10 Mod 3 497 pounds TNT		
Exploder	Mk 3 Contact		

Torpedo Mk11

DEVELOPMENT DATE:
1926

APPROXIMATE IN-SERVICE DATES:
1926-1945



Developed by Washington Navy Yard, Washington, D.C., and the Naval Torpedo Station, Newport, R.I. the Mk 11 torpedo was a destroyer-launched, antisurface ship torpedo which had the first three-speed setting capability (selectable while tube loaded). The development was completed in 1926 and Torpedo Mk 11 became the first torpedo to be designed totally within the Navy (without industry collaboration). An objective was to attain a "universal" use torpedo (i.e., could be launched from any type of platform).

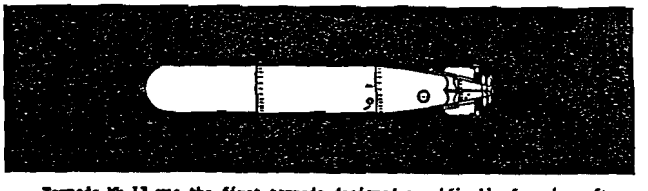
CHARACTERISTICS

PHYSICAL		PERFORMANCE	
Length	271 inches	Speed (knots)	
Diameter	21 inches	Low	27
Weight	3511 pounds	Medium	34
Propulsion	Turbine	High	46
Enabling	No	Range (yards)	
Guidance	Gyro	Low	15,000
Flask Air Pressure	2800 psi	Medium	10,000
Homing	No	High	6000
FC Settings	Mechanical		
Warhead	Mk 11 500 pounds TNT		
Exploder	Mk 3 Mod 1 Contact		

Torpedo Mk13

DEVELOPMENT DATE:
1936

APPROXIMATE IN-SERVICE DATES:
1938-1950



Torpedo Mk 13 was the first torpedo designed specifically for aircraft launching. Developed by the Naval Torpedo Station, Newport, R.I., approximately 17,000 of these antisurface ship torpedoes were produced during World War II. Among the producers were the Naval Torpedo Station; Pontiac Motor Division, Pontiac, Mich.; the Amertorp Corp., Forest Park Ill., and St. Louis, Mo.; and the International Harvester Co. The Mk 13 torpedo saw service during the second World War and was eventually outmoded by ASW torpedoes.

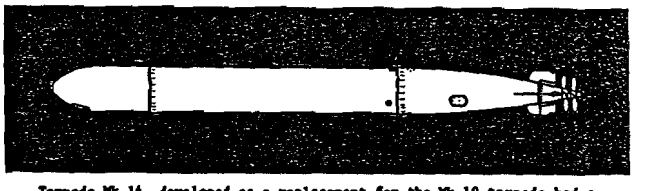
CHARACTERISTICS

PHYSICAL		PERFORMANCE	
Length	161 inches	Speed	33.5 knots
Diameter	22.5 inches	Range	6300 yards
Weight	2216 pounds		
Propulsion	Turbine		
Guidance	Gyro		
Enabling	No		
Flask Air Pressure	2800 psi		
Homing	No		
FC Settings	Mechanical		
Warhead	Mk 13 600 pounds TPX		
Exploder	Mk 8 Contact		

Torpedo Mk14

DEVELOPMENT DATE:
1931

APPROXIMATE IN-SERVICE DATES:
1938



Torpedo Mk 14, developed as a replacement for the Mk 10 torpedo had a longer range than the Mk 10 and had a 100-pound heavier warhead charge. This torpedo was the primary submarine-launched, antisurface ship torpedo used in World War II until the introduction of the electric Torpedo Mk 18. Approximately 4,000,000 tons of Japanese shipping were sunk by the Mk 14 torpedo. Originally introduced for use as mechanically-set torpedo, the Mk 14 was modified for use with modern fire control systems (and designated Mod 5). This torpedo is still in service use. Torpedo Mk 14 was developed by the Naval Torpedo Station, Newport, R.I. and approximately 13,000 were produced during the second World War by the Naval Torpedo Stations in Newport; Alexandria, Va.; and Keyport, Wash.; and the Naval Ordnance Plant, Forest Park, Ill.

CHARACTERISTICS

PHYSICAL		PERFORMANCE	
Length	246 inches	Speed (knots)	
Diameter	21 inches	Low	31.1
Weight	3209 pounds	High	46.3
Propulsion	Turbine	Range (yards)	
Guidance	Gyro	Low	9000
Enabling	No	High	4500
Homing	No		
FC Settings	Electrical		
Warhead	Mk 16 Mod 6 643 pounds HBX		
Exploder	Mk 6 Mod 13 Contact		

Torpedo Mk15

DEVELOPMENT DATE:
1935

APPROXIMATE IN-SERVICE DATES:
1938-1956

Developed and produced by the Naval Torpedo Station, Newport, R.I., Torpedo Mk 15 was designed as a replacement for the Mk 11 and Mk 12 torpedoes in surface ship application. It was 17 inches longer and 300 pounds heavier than its predecessors. The additional weight was due to increased payload. Approximately 9700 Mk 15 torpedoes were produced during the period 1940 through 1944. This torpedo was the last destroyer-launched, antisurface ship torpedo in wide service use. As part of the Fleet modernization program of the 1950's, it was phased out of service by the removal of the quintuple-mount torpedo tubes from destroyers. Torpedo Mk 15 was developed by the Naval Torpedo Station, Newport, R.I., and produced by the Torpedo Station and by the Naval Ordnance Plant, Forest Park, Ill.

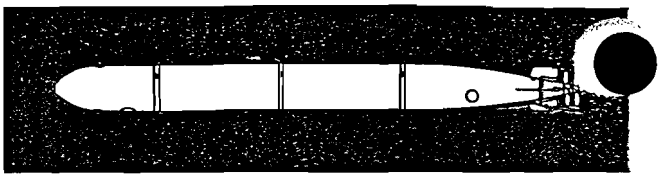
CHARACTERISTICS

PHYSICAL		PERFORMANCE	
Length	288 inches	Speed (knots)	
Diameter	21 inches	Low	26.5
Weight	3841 pounds	Medium	33.5
Propulsion	Turbine	High	45.0
Guidance	Gyro	Range (yards)	
Enabling	No	Low	15,000
Homing	No	Medium	10,000
FC Settings	Mechanical	High	6,000
Warhead	Mk 17 Mod 3 825 pounds HBX		
Exploder	Mk 6 Mod 13 Contact		

Torpedo Mk16

DEVELOPMENT DATE:
1943

APPROXIMATE IN-SERVICE DATES:
1944-1975



In 1943, the Naval Torpedo Station, Newport, R.I., and the Naval Research Laboratory, Washington, D.C., began development of a submarine-launched, antisurface ship torpedo designated Torpedo Mk 16. The decision to use "Navol" (concentrated hydrogen peroxide (H_2O_2O)) as an oxidant came as a result of research on chemical torpedoes which began in 1915. Torpedo Mk 16, which was also produced at the Torpedo Station in Newport, and at the Naval Ordnance Plant, Forest Park, Ill., had the same physical characteristics as the Mk 14 Mod 3 torpedo. As a result of World War II, production began before development was completed on this torpedo. None of the Mk 16 torpedoes were used in combat, although 60 units were completed prior to the end of the war. Production continued in post-World War II years, however, with over 1700 Torpedoes Mk 16 manufactured. The final version was Torpedo Mk 16 Mod 8 which was withdrawn from service use in 1975.

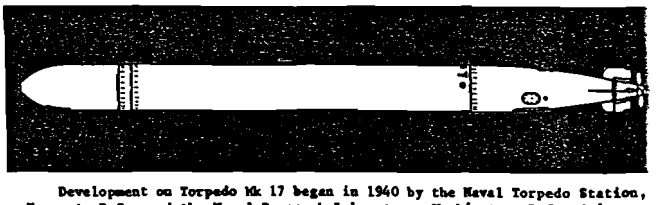
CHARACTERISTICS

PHYSICAL		PERFORMANCE	
Length	246 inches	Speed	46.2 knots
Diameter	21 inches	Range	11,000 yards
Weight	4000 pounds		
Propulsion	Turbine		
Guidance	Gyro		
Enabling	Yes		
Homing	No		
FC Settings	Electrical		
Warhead	Mk 16 Mod 7 746 pounds HBX		
Exploder	Mk 9 Mod 4 Contact/Influence		

Torpedo Mk17

DEVELOPMENT DATE
1940

APPROXIMATE IN-SERVICE DATES:
1944-1950



Development on Torpedo Mk 17 began in 1940 by the Naval Torpedo Station, Newport, R.I., and the Naval Research Laboratory, Washington, D.C. A long-range, high-speed torpedo, the Mk 17 was a destroyer-launched, antisurface ship weapon using "Navol" (concentrated hydrogen peroxide (H_2O_2O)) as an oxidant. Torpedo Mk 17 development, halted in 1941 due to pressure to produ Torpedoes Mk 13 and Mk 15 for the war effort, was resumed again in 1944. (Detailed knowledge of the Japanese type 93 "Long Lance," a 22,000-yard, 49-knot oxygen torpedo became available about this time.) As in the case of the Mk 16 torpedo, the Mk 17 went into production before development was completed. The producer was the Torpedo Station in Newport. Although there were 450 Mk 17 torpedoes completed before the end of the second World War, none were used in combat. Torpedo Mk 17 was discontinued around 1950 after seeing only limited use in post-war years. Main factors in the early demise of the Mk 17 were its contribution to destroyer topside weight, similarity t the Mk 16, and, also, the emerging role of destroyer as an antisubmarine warfare platform.

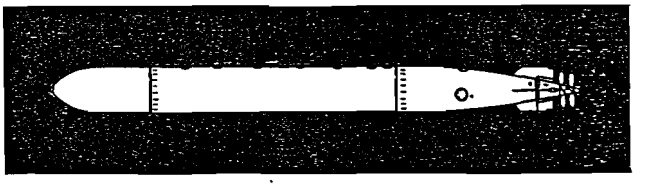
CHARACTERISTICS

PHYSICAL		PERFORMANCE	
Length	288 inches	Speed	46 knots
Diameter	21 inches	Range	18,000 yards
Weight	4600 pounds		
Propulsion	Turbine		
Guidance	Gyro		
Enabling	No		
Flask Air Pressure	2800 psi		
Homing	No		
FC Settings	Mechanical		
Warhead	Mk 17 Mod 3 879.5 pounds HBX		
Exploder	Mk 6 Mod 1 Contact		

Torpedo Mk18

DEVELOPMENT DATE:
1942

APPROXIMATE IN-SERVICE DATES:
1943-1950



Torpedo Mk 18, a submarine-launched, antisurface ship weapon, was one of the most successful torpedoes of World War II. This torpedo, based on a captured G7e German torpedo, was widely used in the latter stages of the war. Torpedo Mk 18 was developed by the Westinghouse Electric Corp., Sharon, Pa., and the Electric Storage Battery Co., Philadelphia, Pa., and approximately 9000 were produced by Westinghouse and the Naval Ordnance Plant, Forest Park, Ill. In 1944, 30 percent of the torpedoes fired from submarines were Mk 18 torpedoes, while in 1945, it was 65 percent. The tactical advantage of Torpedo Mk 18 was the lack of a wake. About 1,000,000 tons of Japanese shipping were sunk by the Mk 18 torpedo.

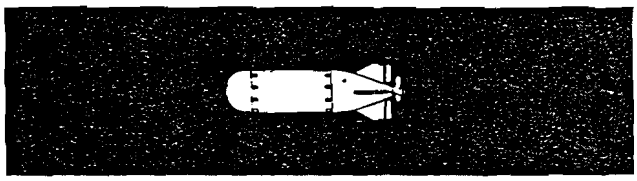
CHARACTERISTICS

PHYSICAL		PERFORMANCE	
Length	245 inches	Speed	29 knots
Diameter	21 inches	Range	4000 yards
Weight	3154 pounds		
Propulsion	Electric motor		
Guidance	Gyro		
Enabling	No		
Homing	No		
FC Settings	Mechanical		
Warhead	Mk 18 Mod 3 575 pounds HBX		
Exploder	Mk 8 Contact Mk 9 Contact/Influence		

Torpedo Mine Mk24

DEVELOPMENT DATE:
1942

APPROXIMATE IN-SERVICE DATES:
1942-1948



Called a mine for security reasons, the Mk 24 was developed as an outgrowth of work on an underwater listening device sponsored by the Naval Defense Research Committee during World War II. This torpedo, with a small warhead, was a crippling weapon designed for "mission kill" vice "platform kill." Approximately 4000 of these aircraft-launched, passive acoustic, antisubmarine torpedoes were produced and in service during World War II and subsequent years until replaced by Torpedo Mk 34. Mine Mk 24 was developed by a group of activities including Western Electric Co., Kearney, N.J.; Bell Telephone Laboratories, Murray Hill, N.J.; Harvard University Underwater Sound Laboratory, Cambridge, Mass.; and General Electric Co, Schenectady, N.Y. The Western Electric Co., Kearney, N.J., and General Electric Co. in Erie and Philadelphia, Pa. were the producers.

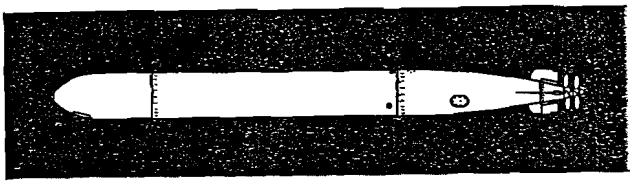
CHARACTERISTICS

PHYSICAL		PERFORMANCE	
Length	84 inches	Speed	12 knots
Diameter	19 inches	Range (search duration)	10 minutes = 4000 yards
Weight	680 pounds		
Propulsion	Electric, secondary battery		
Enabling	No		
Guidance	Preset circle search		
Homing	Passive acoustic		
Warhead	Mine Mk 24 92 pounds HBX-1		
Exploder	Mk 142 fuze Contact		

Torpedo Mk23

DEVELOPMENT DATE:
1943

APPROXIMATE IN-SERVICE DATES:
1943-1946



Torpedo Mk 23 was developed to satisfy what appeared to be a valid tactical requirement of World War II: the high-speed feature of the Mk 14 torpedo. In the early stages of the war, the low-speed feature (31 knots - 9000 yards) of the Mk 14 was rarely used. Due to the changing requirements of the war, however, most of the 9600 Mk 23 torpedoes saw little service. In the latter stages of the second World War, fewer targets and better/smarter escorts/escort tactics necessitated firing from longer ranges. The Mk 14 torpedo, with its low power and longer range, became the preferred weapon. Much of the Mk 23 inventory was scrapped or converted to Torpedoes Mk 14 while other units were cannibalized for spare parts. This submarine-launched, antisurface ship torpedo was developed by the Naval Torpedo Station, Newport, R.I., and produced by the Naval Torpedo Stations at Newport; Alexandria, Va.; and Keyport, Wash.; and by the Naval Ordnance Plant, St. Louis, Mo.

CHARACTERISTICS

PHYSICAL		PERFORMANCE	
Length	246 inches	Speed	46.3 knots
Diameter	21 inches	Range	4500 yards
Weight	3259 pounds		
Propulsion	Turbine		
Guidance	Gyro		
Enabling	No		
Homing	No		
FC Settings	Mechanical		
Warhead	Mk 16 Mod 6 643 pounds HBX		
Exploder	Mk 6 Mod 13 Contact		

ORDNANCE and EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR
NAVAL AUXILIARY LANDING FIELD
CHARLESTOWN, RHODE ISLAND
PROJECT NUMBER D01RI000804

APPENDIX E

REPORTS/STUDIES

APPENDIX E

REPORTS / STUDIES

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E-1. Portions of Environmental Impact Statement conducted by GSA, undated (B-27).

E-2. Federal and State Endangered Species Report issued by the Department of the Interior, undated (B-42).

E-3. Bimonthly Report on Facilities by the Naval Bureau of Aeronautics, dated 1 March 1945 (B-43).

E-4. Summary Report on Facilities with Ammunition Storage Capabilities at NAAS Charlestown, RI, dated 4 October 1946 (B-44).

E-5. Ammunition and Explosives Stowage Inspection Report for ALF Charlestown, RI, dated 29 October 1953 (B-45).

E-6. Airfield Pavement Condition Survey, USNALF Charlestown, RI, dated February 1971 (B-46).

E-7. Report of Historic and Archaeological Resources at Charlestown, RI, (Senulis Survey), dated 1972 (B-47).

E-8. Findings and Determination of DOD Responsibility for Naval Auxiliary Landing Field, Charlestown, RI, Project No. D01RI000801, dated 5 March 1985 (B-48).

E-9. Potential Hazardous Waste Site Preliminary Assessment Report, dated March 1988 (B-49).

E-10. Portion of Reconnaissance Archaeological Survey, Public Archaeology Laboratory, Inc., (PAL, Inc.), dated February 1992 (B-50).

E-11. Supplement to DERP-FUDS INPR for Site No. D01RI0008, dated August 1992 (B-51).

E-12. DERP-FUDS INPR for Site No. D01RI000804, dated 12 November 1996 (B-52).

Over the next year, GSA reviewed various possible disposal actions for the Charlestown NALF site and concluded that the property should be sold to Narragansett Electric Company for construction of nuclear powered electricity generation facilities. As part of this disposition decision, GSA on October 30, 1974 issued a formal declaration that such disposal action would not require an environmental impact statement (EIS) under Section 102 (2) (C) of the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq). The GSA reasoned in this regard:

> Since the Atomic Energy Commission, or a successor agency, will be primarily responsible for licensing the proposed plant, AEC is considered the lead agency in obtaining environmental clearance of the project. GSA will not convey title to the Narragansett Electric Company until there has been full compliance by AEC with the requirements of the National Environmental Policy Act of 1969.[1]

In December 1974 the Rhode Island Committee on Energy (RICE) brought suit against GSA in the Federal District Court of Rhode Island to halt sale of the NALF property to Narragansett Electric until GSA prepared an environmental impact statement.[2] On July 8, 1975 the court ruled in favor of RICE and in early August 1977 GSA contracted with the joint venture of Harbridge House, Inc. of Boston and Jason M. Cortell and Associates of Waltham, Massachusetts to prepare the requisite EIS. The contract terms called for preparation of a preliminary Draft Environmental Impact Statement (DEIS) within 180 days after Notice to Proceed, a final DEIS within 237 days after such Notice, a proposed Final Environmental Impact Statement (FEIS) within 327 days and a FEIS within 361 days after such Notice.

A major purpose of the EIS process as provided in the National Environmental Policy Act is to provide a mechanism for public participation in, input to, and review of, federal decision-making. A number of specific steps have been taken, and will continue to

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[1] "Determination Under PMD 1095.1A", October 30, 1974.

[2] Rhode Island Committee on Energy v. GSA, U.S. District Court of Rhode Island, No. 74-272, 7 ERC 2096, 2109, July 8, 1975.

is increasing in Charlestown as in neighboring towns. Seasonal dwellings are predominately located in Cross Mills and Quonochontaug.

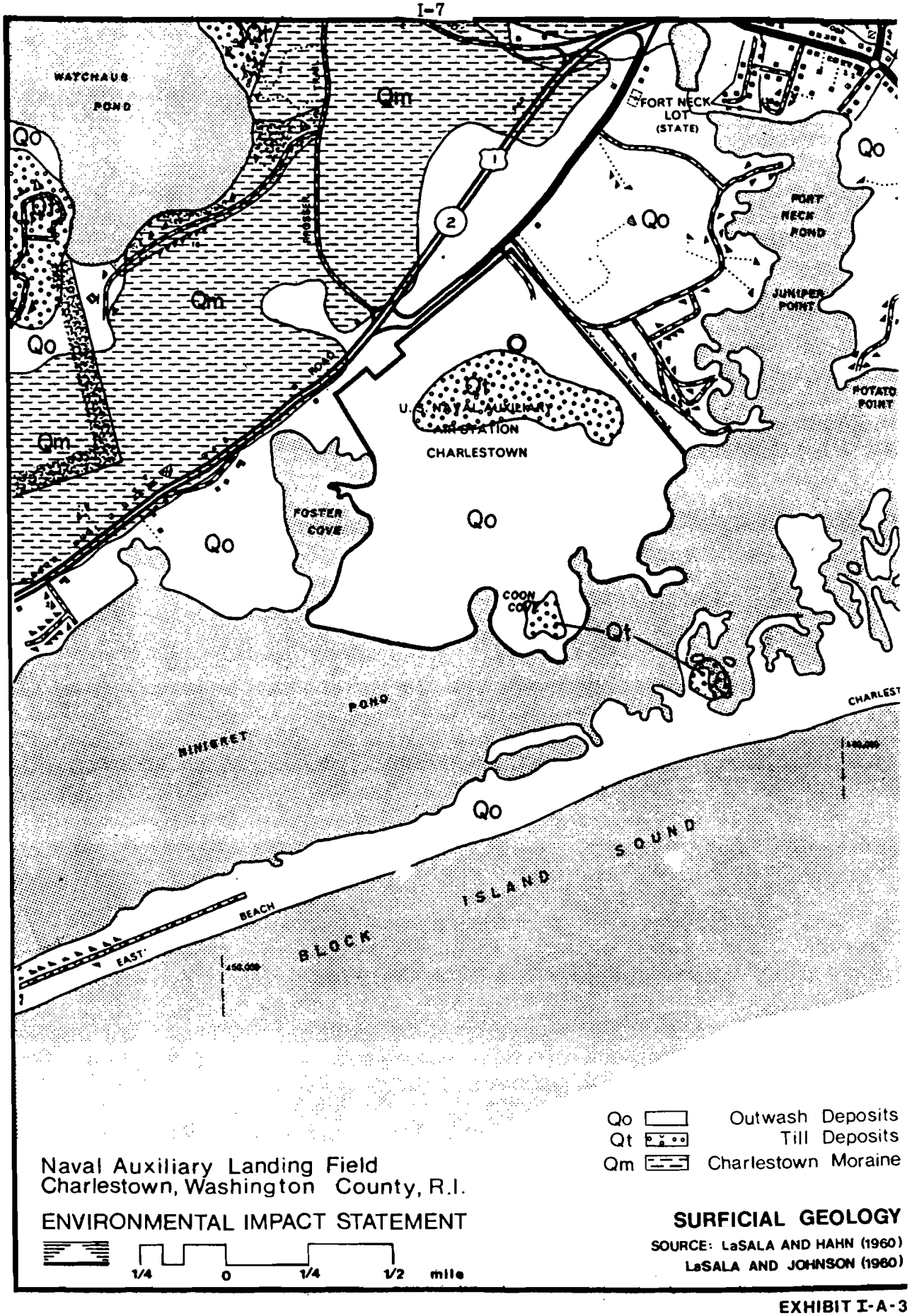
(3) Land Capability Analysis. The Rhode Island Statewide Planning Program, as part of the Areawide Water Quality Management Plan, is developing statewide Land Capability Analyses. These analyses are based on seven selected criteria:

- Existing (1970) Land Use
- Flood Hazard Areas
- Ground Water
- Soils
- Slopes
- Wetlands
- Public Water and Sewer.

b. Existing Land Ownership. Large amounts of land in Charlestown are owned by the State government, and the NALF has, since 1943, been owned by the Federal Government. A considerable amount of privately owned land is, as of December 1, 1977, in a doubtful ownership status due to land claim suits filed against individual property owners by the Narragansett Tribe of Indians. Virtually all of the land abutting the NALF is privately owned. The Federal Government holds clear title to the NALF. Approximately 19 percent of the town of Charlestown's total land area is owned by the Federal or State Government (not including highway rights of way).

(1) Federally Owned Land. The major federally owned land in Charlestown is the former Naval Auxiliary Landing Field, the subject of this EIS. The land was purchased in 1942 in two parcels, from Thomas L. Arnold and from George Prosser. There were no provisions for reversion to the original owner, nor any other restrictions on the title when the land was acquired. The U.S. Navy declared the land excess, and it was transferred to the General Services Administration in 1974 for disposition. The NALF encompasses 603.77 acres of fee land and 1.33 acres of easements (605 acres total) equal to 2.2 percent of the total land area of the Town of Charlestown.

The Ninigret National Wildlife Refuge, 27.5 acres, is also federally owned. This is a barrier beach opposite the NALF.



Naval Auxiliary Landing Field
Charlestown, Washington County, R.I.

ENVIRONMENTAL IMPACT STATEMENT

SURFICIAL GEOLOGY

SOURCE: LaSALA AND HAHN (1960)
LaSALA AND JOHNSON (1960)

EXHIBIT I-A-3

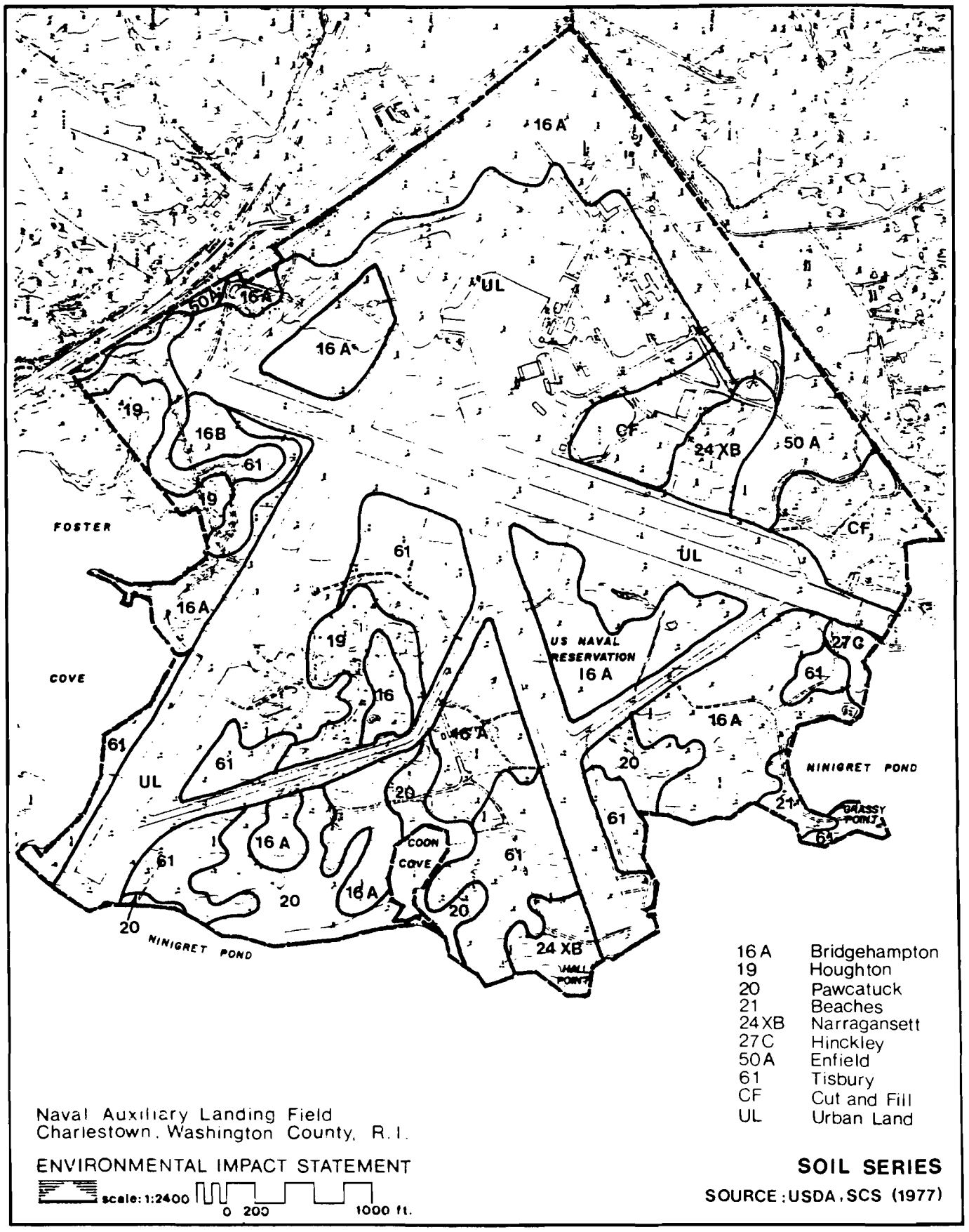
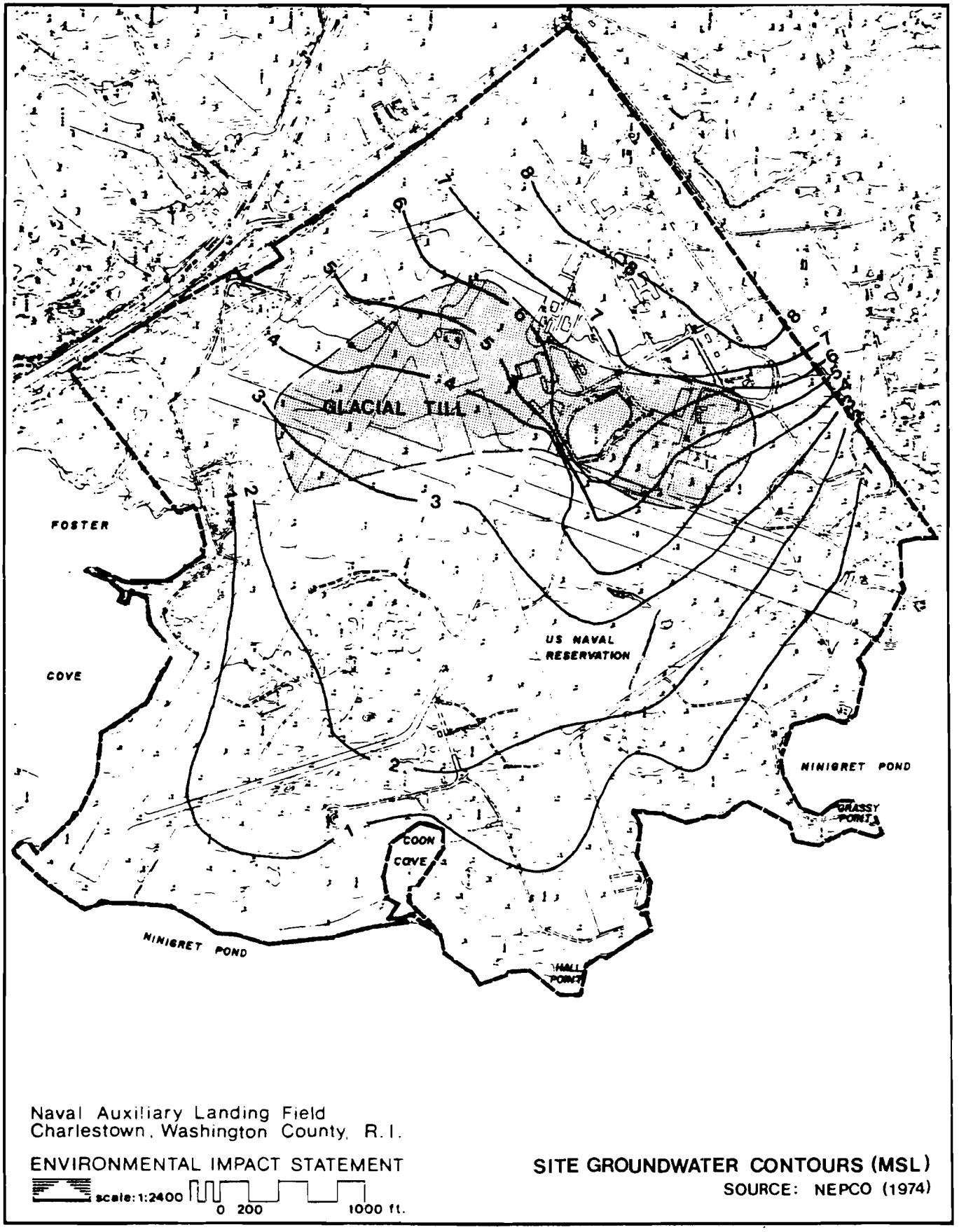

16 A
UL
50A
16 A
16 A
19
16B
61
19
FOSTER
COVE
16 A
61
19
16
16 A
61
UL
61
16 A
20
COON
COVE
16 A
20
20
NINIGRET POND
61
20
US NAVAL
RESERVATION
16 A
24 XB
CF
24 XB
50 A
CF
UL
27C
61
16 A
20
NINIGRET POND
21
GRASSY
POINT
61
61
24 XB
HALL
POINT
16 A Bridgehampton
19 Houghton
20 Pawcatuck
21 Beaches
24XB Narragansett
27C Hinckley
50A Enfield
61 Tisbury
CF Cut and Fill
UL Urban Land
Naval Auxiliary Landing Field
Charlestown, Washington County, R.I.
ENVIRONMENTAL IMPACT STATEMENT
scale: 1:2400
0 200 1000 ft.
SOIL SERIES
SOURCE: USDA, SCS (1977)

EXHIBIT I-A-6

EXHIBIT I-A-7
CHARLESTOWN NALF SOILS

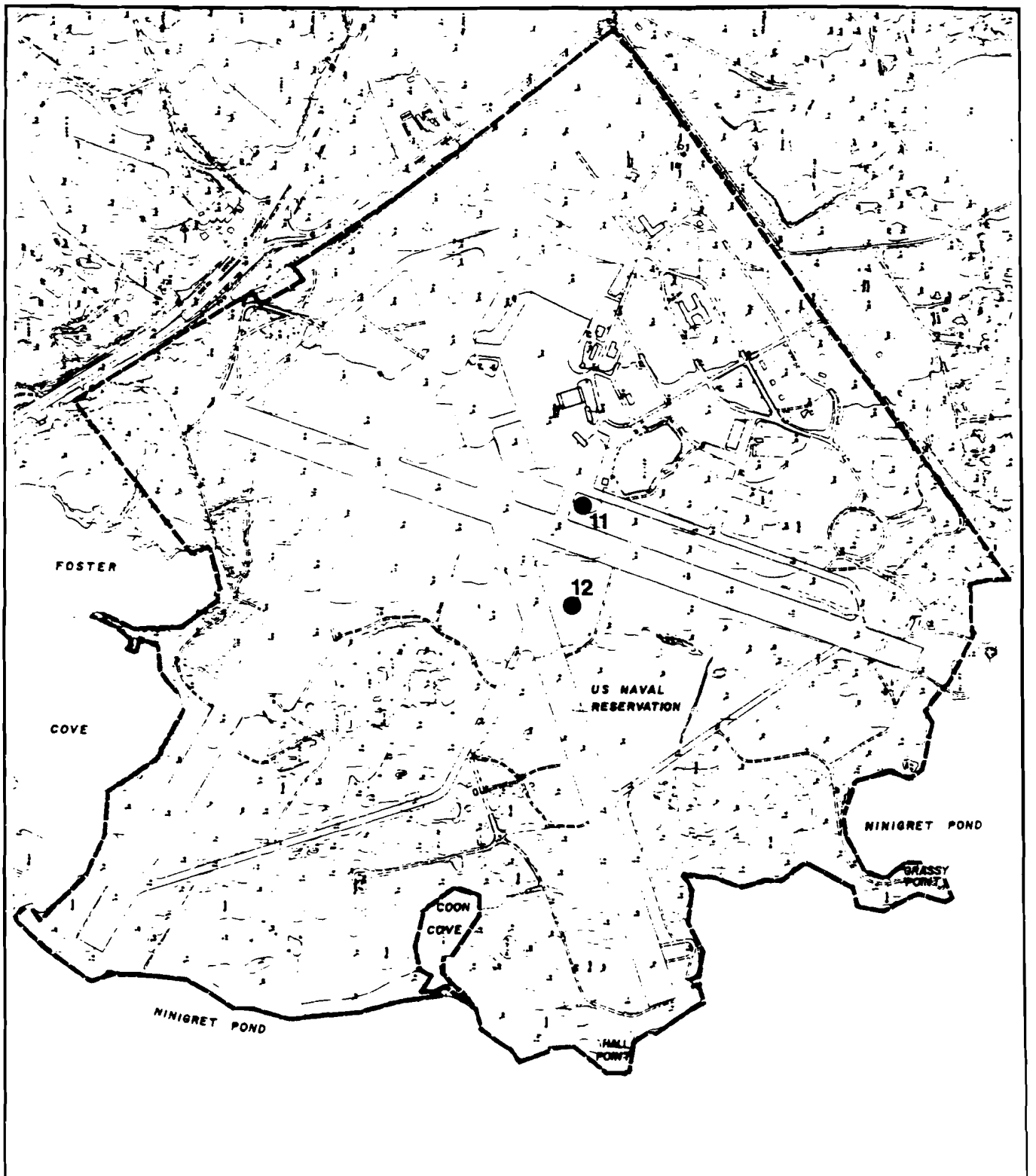
Soil Symbol	Name	Hydrologic Group	Seasonal High Water Table	Estimated Physical Properties: Permeability	Estimated Physical Properties: Available Water Capacity	Parent Material	Percolation Rate at 30 inches	Septic Limitations	Camp Areas	Picnic	Paths	K-Factor: Surface	K-Factor: Subsoil	K-Factor: Sub-stratum	Land Capability Class
16	Bridgehampton silt loam	B	4	0.6-2.0	.18-.10	Stratified Drift	Moderately slow	moderate permeability	A-slight B-moderate (slope)	slight	slight	.49	.64	.17	A: I-1 B: IIe
19	Houghton Muck	D	0-0.5	2.0	.20-.28	Herbaceous Plants	High Water Table	very severe HWT	very severe wetness	very severe wetness	very severe wetness	- -	- -	- -	- -
20	Pawcatucket Peat	D	+1.0-0.5	2.0[1] 6.0[2]	.20-.28[1] .01-.08[2]	Tidal Marsh	High Water Table	very severe tidal flooding	very severe wetness	very severe wetness	very severe wetness	- -	- -	- -	- -
21	Beaches	A	Variable	Variable	Variable	Variable	Variable	severe	Variable	Variable	Variable	- -	- -	- -	- -
24X	Narragansett very stony silt	B	4	0.6-2.0	.17-.24	Glacial Till "X" = very stony	Moderately Fast	moderate stoniness	moderate slope & stoniness	moderate slope	moderate stoniness	.32	.43	.43	VIs
27	Hinckley gravelly sandy loam	A	4	6.0	.06-.14	Deep outwash Deposits	Fast	moderate slopes	slight	slight	slight	.17	.17	.15	C:IVs
50	Enfield silt loam	B	4	.6-2.0	.16-.30	Outwash plains	Fast	slight	slight	slight	slight	.49	.64	.17	I
61	Tisbury silt loam	B	1.5-4.0	0.6-2.0 6.0[3]	.17-.30 .01-.08	Outwash	Fast	severe S. HWT	slight	slight	slight	.49	.64	.17	IIW
CF	Cut and Fill	- -	Variable	Variable	Variable	Need on-site	- -	variable	- -	- -	- -	- -	- -	- -	- -
UL	Urban Land	- -	Variable	Variable	Variable	Need on-site	- -	variable	- -	- -	- -	- -	- -	- -	- -

[1] Muck and peat horizon.
[2] Loam sand, sand horizon.
[3] Sand and gravel horizon.



SITE GROUNDWATER CONTOURS (MSL)
SOURCE: NEPCO (1974)

EXHIBIT I-A-22



Naval Auxiliary Landing Field
Charlestown, Washington County, R.I.

ENVIRONMENTAL IMPACT STATEMENT

scale: 1:2400 0 200 1000 ft.

● Wells

GROUNDWATER QUALITY ANALYSIS SITES

SOURCES: R.I. Development Council (1953)
& R.I. Dept. Public Health (1946)

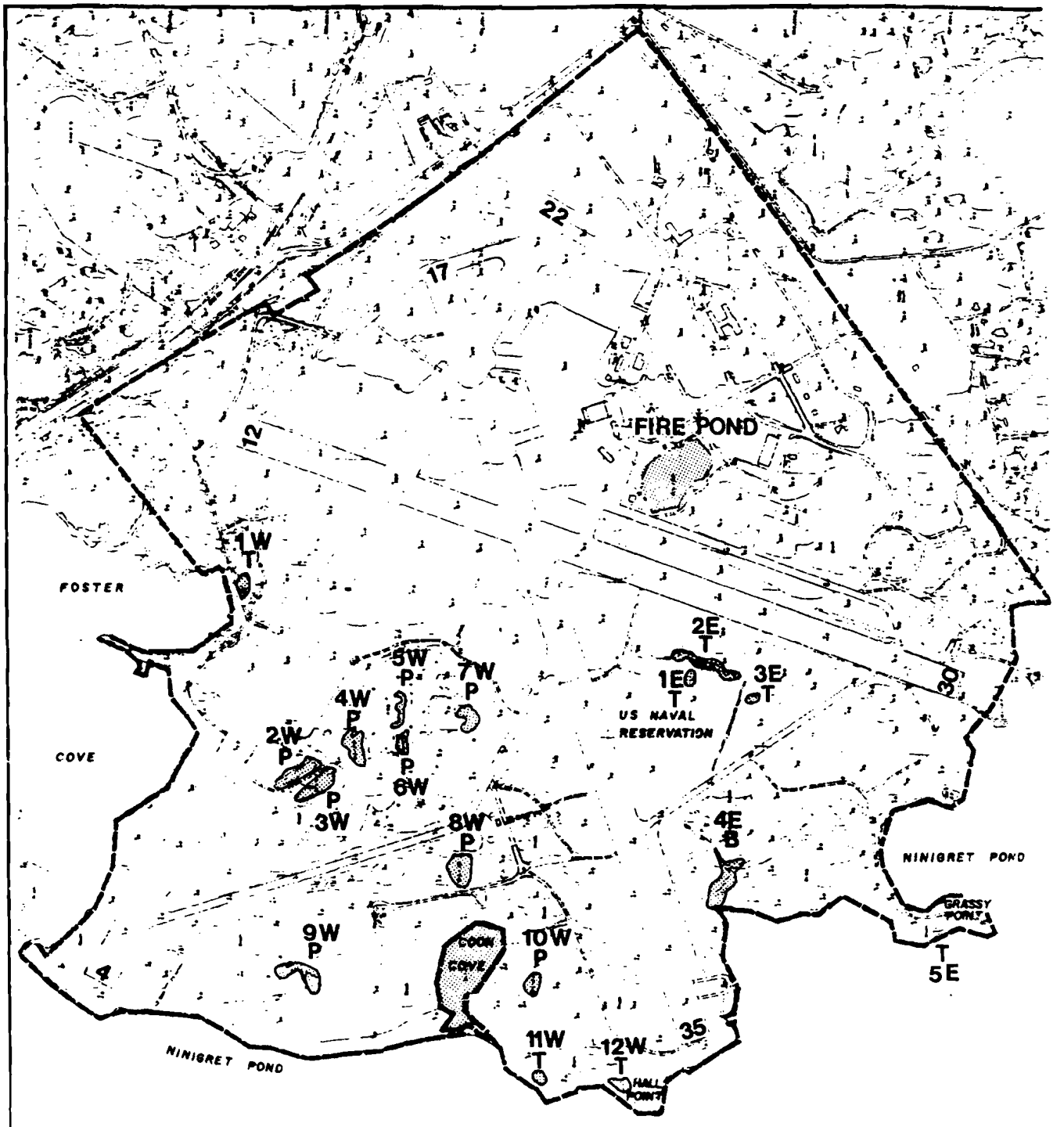
EXHIBIT I-A-23

EXHIBIT I-A-24
GROUNDWATER ANALYSIS

	Well #11[1] 2-28-46	Well #12[2] 2-28-46	Well #11[2] 4-17-46	Well #12[2] 4-17-46
pH	6.2	6.0	5.8	5.8
Iron (Fe) mg/l	0.05	0.1	0.00	0.00
Calcium (Ca) mg/l	21.0	15.0	--	--
Magnesium (Mg) mg/l	2.0	2.0	--	--
Bicarbonate (HCO_3) mg/l	61.0	--	--	--
Sulfate (SO_4) mg/l	5.0	12.0	--	--
Chloride (Cl) mg/l	22.0	14.0	24.0	16.0
Nitrate (N) mg/l	--	--	1.0	0.2
Dissolved Solids mg/l	109.0	--	--	--
Hardness				
Total mg/l	61.0	--	7.0	4.5
Carbonate mg/l	50.0	--	--	--
Non-carbonate mg/l	11.0	--	--	--
Turbidity JTU	--	3.0	--	--
Suspended Solids mg/l	--	0.4	--	--
Nitrite (N) mg/l	--	--	.024	.001
Total Solids mg/l	--	83.0	136.0	112.0
Carbon Dioxide (CO_2)	--	35.0	--	--
Dissolved Oxygen mg/l	--	8.4	--	--
Total Alkalinity mg/l	--	30.0	23.5	14.5

[1] Rhode Island Development Council, 1953.

[2] Rhode Island Department of Public Health, 1946.



T - Temporary Pond
P - Permanent Pond
B - Brackish Pond

Naval Auxiliary Landing Field
Charlestown, Washington County, R.I.

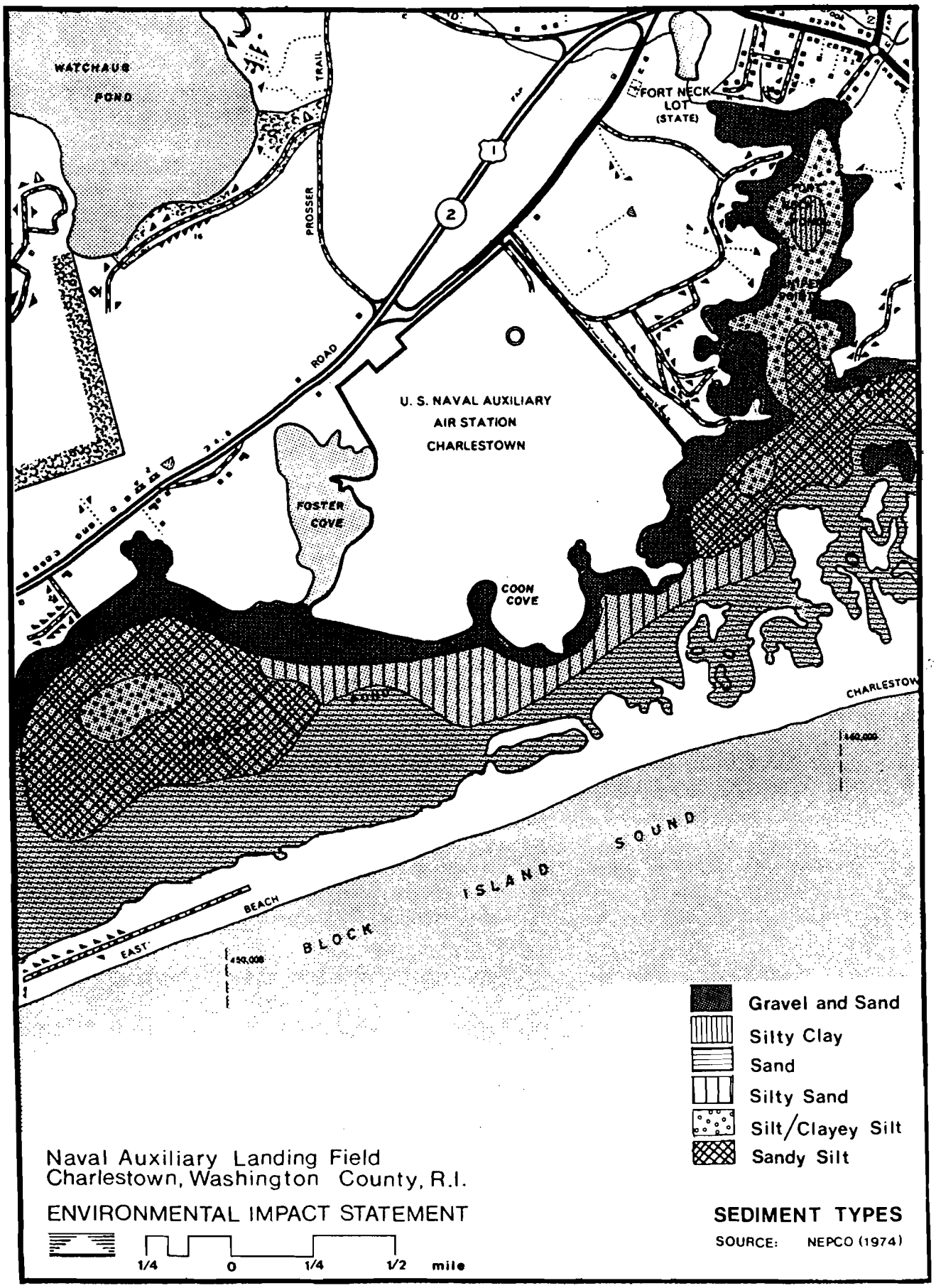
ENVIRONMENTAL IMPACT STATEMENT

scale: 1:2400 0 200 1000 ft.

ON-SITE PONDS

SOURCE: NEPCO (1974)

EXHIBIT I-A-25



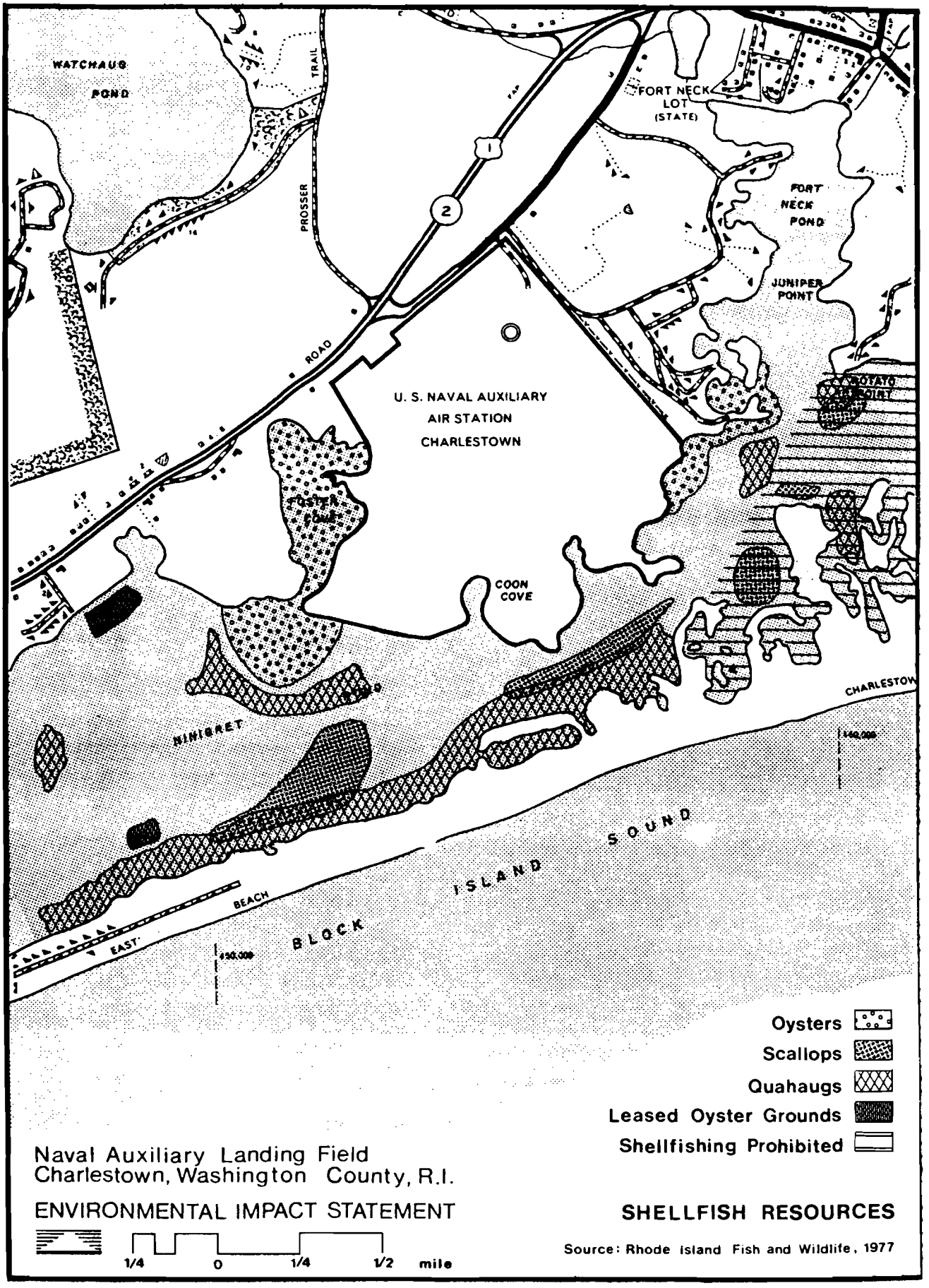
Naval Auxiliary Landing Field
Charlestown, Washington County, R.I.

ENVIRONMENTAL IMPACT STATEMENT

SEDIMENT TYPES

SOURCE: NEPCO (1974)

EXHIBIT I-A-26



Naval Auxiliary Landing Field
Charlestown, Washington County, R.I.

ENVIRONMENTAL IMPACT STATEMENT

SHELLFISH RESOURCES

Source: Rhode Island Fish and Wildlife, 1977

EXHIBIT I-A-28

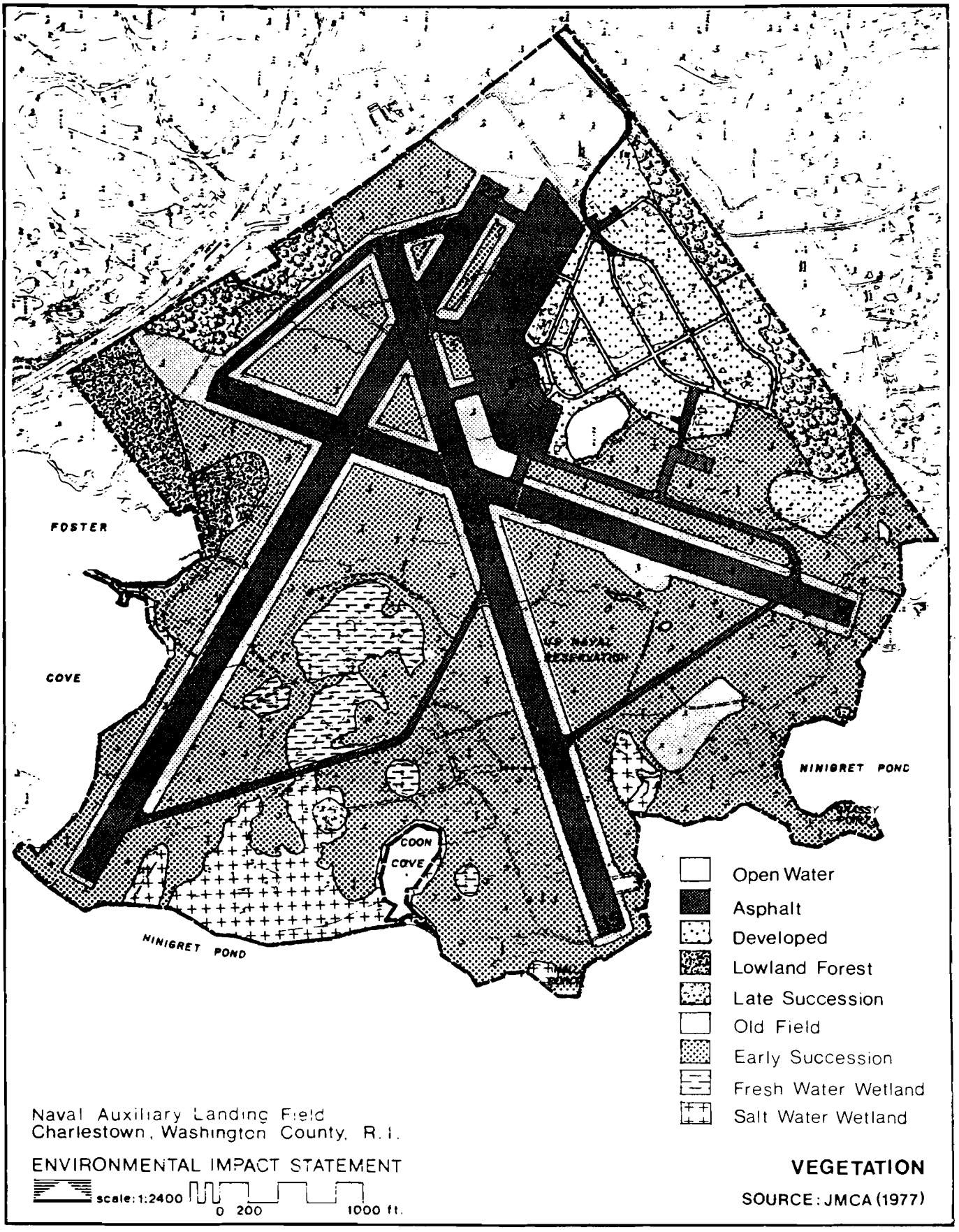
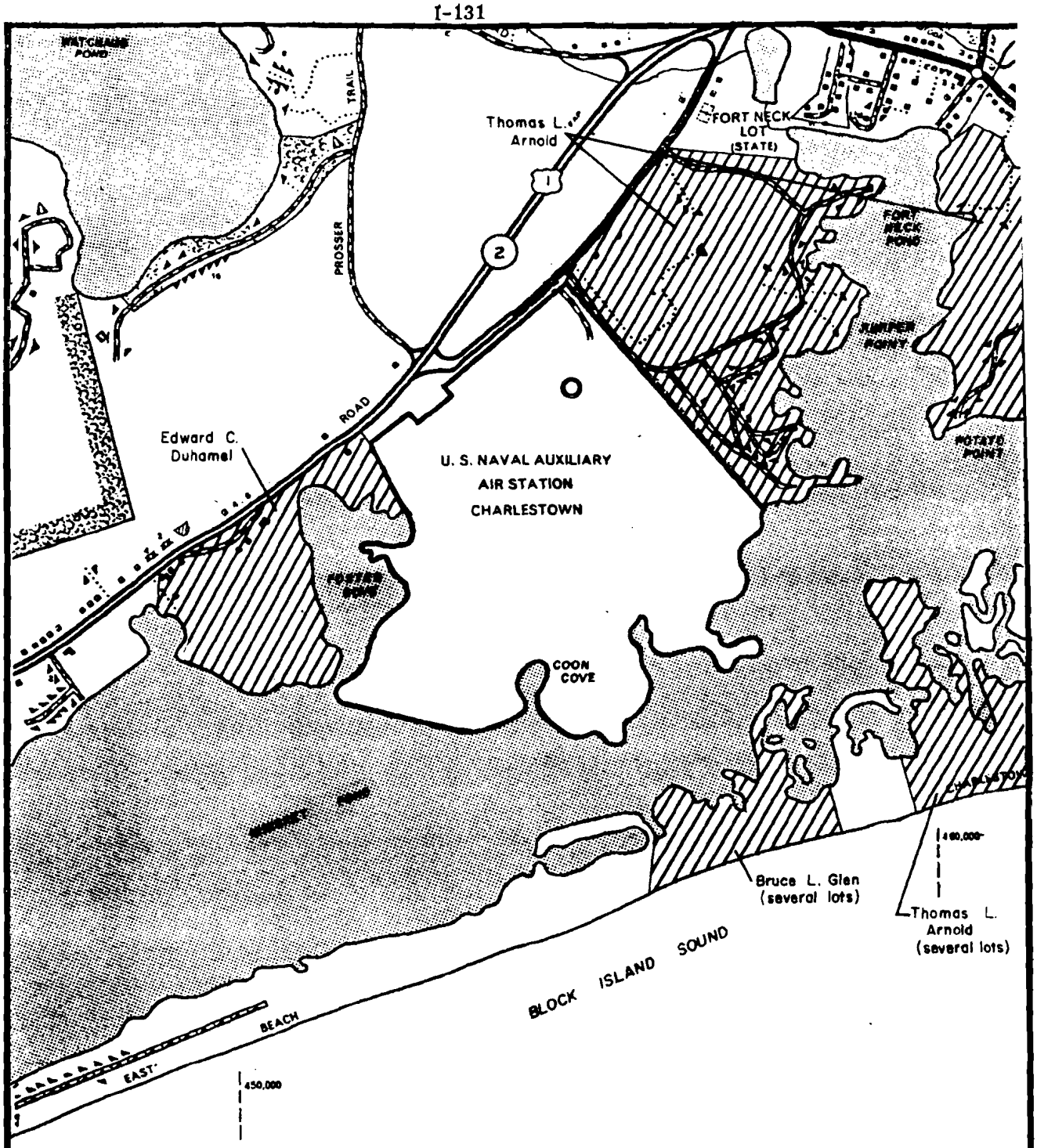


EXHIBIT I-A-29



Major Abuttors

Naval Auxiliary Landing Field
Charlestown, Washington County, R.I.

ENVIRONMENTAL IMPACT STATEMENT

1/4 0 1/4 1/2 mile

APPROXIMATE LOCATION OF MAJOR ABUTTING PRIVATE PROPERTY OWNERS

SOURCE: Donal Simpson Assoc. (1977)

EXHIBIT I-B-33

In danger of being lost forever

Rhode Island law forbids buying or selling, storing, transporting, importing or exporting plants or animals, or parts of plants or animals, which are on either the federal or state lists of endangered species.

Of approximately 1,400 native plant species documented as existing in Rhode Island, three percent are considered to be endangered. That is, they occur at only one or two locations in the state, or occur at three or more locations here but 100 sites or fewer throughout their whole global range. The state list of endangered plants also includes species being considered for inclusion on the federal list.

State endangered species include these plants:

Small-whorled pogonia

New England boneset

● Stiff clubmoss	Lizard's tail
Foxtail clubmoss	● Dwarf mistletoe
Mountain spleenwort	● Smooth sandwort
Walking fern	Rock sandwort
Purple cliffbrake	● Purple clematis
Podgrass	Blue cohosh
● Slender arrowhead	Climbing fumitory
Collins' sedge	Long's bitter cress
Variable sedge	● Thread-leaved sundew
Walter's sedge	Dewdrop
● Black-fruited spike rush	Canadian burnet
● Three-angled spike rush	Sessile-leaved tick-trefoil
Umbrella grass	● Sandplain flax
Long-beaked bald rush	Grooved flax
Inundated horned rush	● Bushy rockrose
Torrey's beaked rush	Toothcup
Untubercled bulrush	Round-fruited false
● Long's bulrush	● loosestrife
● Few-flowered nut rush	Spikenard
Tall nut-rush	● Saltpond pennywort
Golden club	● Bog rosemary
● Showy orchis	Plymouth gentian
Green adder's mouth	● Hyssop-leaved hedge-nettle
● Yellow fringed orchid	● Long-leaved bluets
Pale green orchid	New England boneset
Hooker's orchid	Northern blazing star
Little ladies' tresses	● Sclerolepis

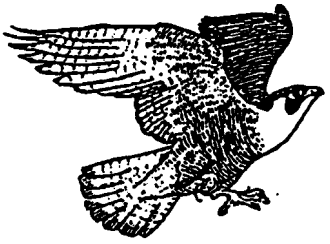
Long's bitter cress

Plymouth gentian

* ● — CONFIRMED PRESENCE ON CHARLESTOWN NALF

Federally listed endangered plants found in Rhode Island include the small-whorled pogonia and sandplain gerardia.

There are five endangered vertebrate animals in the state, all of them birds:



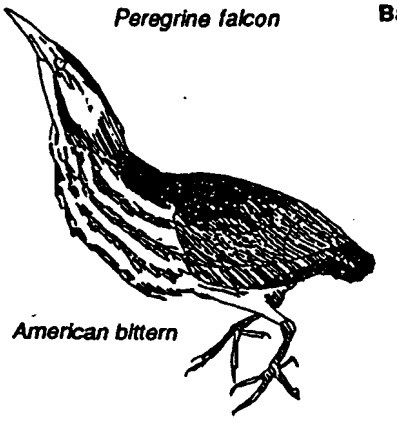
Peregrine falcon

American bittern
Upland sandpiper
Northern harrier
Black-throated blue warbler
Yellow-breasted chat.

Rhode Island's endangered invertebrates are:

Barrens bluet damselfly
Banded bog skimmer dragonfly
Regal fritillary butterfly

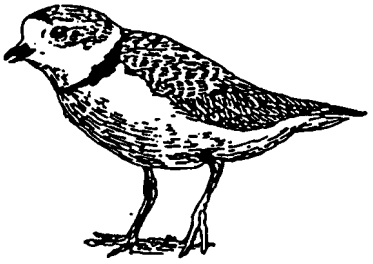
American burying beetle



American bittern

The following Rhode Island species are on the federal endangered list:

American burying beetle
Atlantic loggerhead
Atlantic green turtle
Atlantic leatherback turtle
Atlantic ridley turtle
Bald eagle
Peregrine falcon
Piping plover
Roseate tern



Piping plover

One Rhode Island bird was taken off the state's endangered list last year, according to Richard Enser, coordinator of the state's Natural Heritage Program. "We removed the vesper sparrow from the list because no one can find it nesting any more." It has moved into another category, called State Historical.

SOURCE: New England's rare, threatened, and endangered plants

BUREAU OF AERONAUTICS

BIMONTHLY REPORT ON FACILITIES

NAVAL AVIATION SHORE ESTABLISHMENTS

~~CONFIDENTIAL~~

1 MARCH 1945

NAME OF ACTIVITY AND COMMANDING OFFICER	POSITION AND ELEVATION	TYPE	AIRCRAFT FOR WHICH FACILITIES ARE REQUIRED — CNO REQUIREMENTS — LANDPLANES		SEAPLANES		LTA		AUTH. STATION PLANES	RUNWAYS — DIMENSIONS (FEET)	SURFACING	GROSS PLANE LOAD CAPACITY	NO. OF OUTLYING FIELDS	NO. OF AIRSHIP MOORING CIRCLES	A & R CLASSIFICATION	PERSONNEL FACILITIES — TYPE		EXISTING CAPACITY	ADDIT'L AUTHORIZED	ESTIMATED USABLE DATE
NAVAL AIR BASES, 1st ND NAS Quonset Point, R. I. USE: H.Q. ComFairQuonset and Com NAB. Major A&R and ASD. Group Staging. Misc. fleet schs. and units. EastSeaFron Operations. R. H. Wyatt, Capt., USN, CO	Lat. 41-34 N Long. 71-24 W Elev. 13 Ft	I&S	CV VPB(NL) VPB(NL) VO-VS VR VJ VSB-VN TOTAL	198 33 18 24 3 3 37 314	VJ VJR VO-VS VR VPB TOTAL	21	ZNP ZNP TOTAL		3 VR 7 VJ 4 VSB	1. 6000 x 500 2. 4000 x 500 3. 4000 x 300 4. 4290 x 300	Asphalt Asphalt Asphalt Asphalt	60M	3		A	OFFICER ENLISTED FLIGHT STUDENT TOTAL	MALE FEMALE MALE WHITE MALE COLORED FEMALE OFFICER ENLISTED & CADET	1087 51 9785 1048 560 12531		
NAAF Hyannis, Mass USE: Fleet training—VT. R. M. Sullivan, Lt., USN, OinC	Lat. 41-40 N Long. 70-17 W Elev. 55 Ft	L	CV VPB(NL) VPB(NL) VO-VS VR VJ VSB-VN TOTAL	18 18	VJ VJR VO-VS VR VPB TOTAL	0	ZNP ZNP TOTAL	0		1. 4000 x 150 2. 4000 x 150 3. 4140 x 150	Asphalt Asphalt Asphalt	40M	2		D	OFFICER ENLISTED FLIGHT STUDENT TOTAL	MALE FEMALE MALE WHITE MALE COLORED FEMALE OFFICER ENLISTED & CADET	8 360 16 384		
NAAF Nantucket Island, Mass. USE: Staging point for gunnery, rocket, and torpedo training in Quonset area. A. P. Mills, Lt. Comdr., USNR, OinC	Lat. 41-15 N Long. 70-04 W Elev. 47 Ft	L	CV VPB(NL) VPB(NL) VO-VS VR VJ VSB-VN TOTAL	Minor Facilities	VJ VJR VO-VS VR VPB TOTAL	Minor Facilities 0	ZNP ZNP TOTAL	0	1 VJ	1. 4000 x 150 2. 4000 x 150	Asphalt Asphalt	60M			D	OFFICER ENLISTED FLIGHT STUDENT TOTAL	MALE FEMALE MALE WHITE MALE COLORED FEMALE OFFICER ENLISTED & CADET	6 142 148		
NAAF Otis Field, Camp Edwards, Mass. USE: Fleet training—CV. J. M. deBraganca, Lt. Cdr., USNR, OinC	Lat. 41-39 N Long. 70-32 W Elev. 126 Ft	L	CV VPB(NL) VPB(NL) VO-VS VR VJ VSB-VN TOTAL	130 22 152	VJ VJR VO-VS VR VPB TOTAL		ZNP ZNP TOTAL		1 VJ	1. 7000 x 150 2. 7000 x 150 3. 7000 x 150	Asphalt Asphalt Asphalt	60M			C	OFFICER ENLISTED FLIGHT STUDENT TOTAL	MALE FEMALE MALE WHITE MALE COLORED FEMALE OFFICER ENLISTED & CADET	245 2 2860 120 40 3267		
NAAF New Bedford, Mass. USE: Fleet training—VT. Utility Operations. J. R. Harrison, Lt., Cdr., USNR, OinC	Lat. 41-41 N Long. 70-58 W Elev. 64 Ft	L	CV VPB(NL) VPB(NL) VO-VS VR VJ VSB-VN TOTAL	36 6 42	VJ VJR VO-VS VR VPB TOTAL		ZNP ZNP TOTAL			1. 5000 x 150 2. 5000 x 150	Asphalt Asphalt	30M			D	OFFICER ENLISTED FLIGHT STUDENT TOTAL	MALE FEMALE MALE WHITE MALE COLORED FEMALE OFFICER ENLISTED & CADET	43 500 543		
NAAF Groton, Conn. USE: Fleet training—CV Charles Platt, Jr., Lt., Cdr., USNR, OinC	Lat. 41-20 N Long. 72-03 W Elev. 10 Ft	L	CV VPB(NL) VPB(NL) VO-VS VR VJ VSB-VN TOTAL	97 15 112	VJ VJR VO-VS VR VPB TOTAL		ZNP ZNP TOTAL			1. 4000 x 150 2. 4000 x 150 3. 5000 x 150	Concrete Concrete Concrete	30M			D	OFFICER ENLISTED FLIGHT STUDENT TOTAL	MALE FEMALE MALE WHITE MALE COLORED FEMALE OFFICER ENLISTED & CADET	190 1350 80 1620		
NAAF Westerly, R. I. USE: Fleet training—VF(N). W. P. Watts, Lt., USNR, OinC	Lat. 41-21 N Long. 71-45 W Elev. 82 Ft	L	CV VPB(NL) VPB(NL) VO-VS VR VJ VSB-VN TOTAL	84 15 99	VJ VJR VO-VS VR VPB TOTAL	0	ZNP ZNP TOTAL	0	1 VJ	1. 4000 x 150 2. 4000 x 150	Asphalt Asphalt	30M			D	OFFICER ENLISTED FLIGHT STUDENT TOTAL	MALE FEMALE MALE WHITE MALE COLORED FEMALE OFFICER ENLISTED & CADET	104 464 568	232 232	3-15-45
NAAF Charlestown, R. I. USE: Fleet training—VF(N) H. W. Grieve, Lt. USNR, OinC	Lat. 41-22 N Long. 71-40 W Elev. 30 Ft	L	CV VPB(NL) VPB(NL) VO-VS VR VJ VSB-VN TOTAL	161 18 41 220	VJ VJR VO-VS VR VPB TOTAL	0	ZNP ZNP TOTAL	0	1 VJ	1. 5800 x 200 2. 4800 x 200 3. 5400 x 200	Asphalt Asphalt	30M			C	OFFICER ENLISTED FLIGHT STUDENT TOTAL	MALE FEMALE MALE WHITE MALE COLORED FEMALE OFFICER ENLISTED & CADET	261 1492 48 1801	232 232	3-15-45

PREPARED BY AIR STAFF . SHORE ESTABLISHMENTS GROUP

SUMMARY REPORT ON FACILITIES
NAVAL AVIATION SHORE ESTABLISHMENTS

NAAS CHARLESTOWN, R. I.

NAVAL AIR BASES
FIRST NAVAL DISTRICT

I GENERAL DATA

DATE OF THIS REPORT: KEY 4 OCT 1946

A NAME OF ACTIVITY: NAAS CHARLESTOWN RHODE ISLAND

LOCATION LAT: N41 22 08 LONG: W71 39 51

ELEVATION OF AIRFIELD: 32 FT 25 FT ABOVE MSL

ADMINISTRATIVE SENIOR: CNOR HAS 1ST ND DIST HAS COMMST PT R I

BEARING & DISTANCE IN NAUTICAL MILES FROM ADMINISTRATIVE SENIOR: 220 22

B REAL ESTATE SUMMARY

NAVY OWNED AREA	631 29	ACRES
CAA NAVY STANDARD LEASE	NONE	ACRES
TEMPORARY USE LEASE PERMIT ETC.	46	ACRES
TOTAL AREA OF STATION	631 75	ACRES

AERIAL GUNNERY RANGES & SITES

BOMB	STRAFING	TORPEDO	ROCKET	AIR TO AIR	OTHER
NONE	NONE	NONE	NONE	NONE	NONE

OUTLYING FIELDS: NONE NUMBER

Ic CNO CAPACITY REQUIREMENTS

MISSION: 30 APRIL 1945 — FLEET NIGHT ATTACK AND COMBAT TRNG

	LANDPLANES						SEAPLANES		LTA
	CV	VPB	VR	VJ	VN	OTHER	VPB	OTHER	
TOTAL	111	20	3	1	20	14	20	20	20
ON BOARD	52	20	20	2	6	20	20	1	20

	OFFICERS	CADETS	ENLISTED	CIVILIANS
TOTAL	136	NONE	1762	141
ON BOARD	216	NONE	942	155

II PERSONNEL FACILITIES

A ENLISTED QUARTERS

	TOTAL DESIGN CAPACITY	TOTAL OVRLOAD CAPACITY	TOTAL SQ. FT. FLOOR AREA	TEMP ENERG CAP
TOTAL MALE ENLISTED WHITE	1489	2341	75376	2996
TOTAL MALE ENLISTED COLORED	72	116	3784	148
TOTAL CADET	NONE	NONE	NONE	NONE
TOTAL FEMALE ENLISTED	NONE	NONE	NONE	NONE
TOTAL ENLISTED & CADET	1561	2457	79160	3144
INCLUDED BUT UNDER CONSTRUCT	NONE	NONE		

B OFFICERS QUARTERS

TOTAL BOQ	168	348	17422	497
TOTAL WOQ & NURSES	NONE	NONE	NONE	NONE
TOTAL OFFICERS	168	348	17422	497
INCLUDED BUT UNDER CONSTRUCT	NONE	NONE		

D OTHER QUARTERS

MARRIED ENLISTED MENS QUARTERS 12 UNDER CONSTRUCT. 12 UNITS
MARRIED OFFICERS QUARTERS 1 UNDER CONSTRUCT. 1 UNITS

E PHYSICAL TRAINING & RECREATION FACILITIES

NO.	SEATS EACH	LENGTH	WIDTH	
1	450	72	40	GYM &/OR DRILL HALLS WITH CAPACITY WHEN USED AS AUDITORIUM
NO				AUDITORIUMS WITH FIXED SEATS

F PERSONNEL SERVICE FACILITIES

SHIPS SERVICE FACILITIES	3120	SQ. FT.
SHIPS STORE ASHORE	950	SQ. FT.
COMMISSARY	NONE	SQ. FT.
G BRIG	NONE	MEN
H CHAPE	NONE	MEN

I BAKERY RATED CAPACITY: NONE MEN PER ____ HRS. ____ SQ. FT.

J LAUNDRY RATED CAPACITY: NONE MEN PER ____ HRS. ____ SQ. FT.

III ADMINISTRATIVE & TRAINING FACILITIES

	NUMBER	SQ. FT.	TYPE CONST
A ADMINISTRATION BLDGS. OFFICE SPACE		5590	CWWAR
B SQUADRON OFFICES	3	5754	TOTAL
C INSTRUCTION BLDGS.	2	3120	TOTAL
TRAINING DEVICES BLDGS.	4	6720	TOTAL

D SWIMMING TRAINING POOLS

LENGTH	WIDTH	MAX DEPTH	ENCLOS'D	LOCKERS SHOWERS	HEATED WATER
NONE					

G DISPENSARY

	TOTAL BEDS DESIGN CAPACITY	TOTAL BEDS EMERGENCY CAPACITY	TYPE CONST
CAPACITY	45	65	CWWAR

NEAREST NAVAL HOSPITAL	DISTANCE IN MILES
NEWPORT NAVAL HOSP NEWPORT R I	28

IV OPERATIONS FACILITIES

	SQ. FT.	TYPE CONST
TOTAL SPACE	515	CWWAR
OFFICE SPACE ONLY	225	CWWAR

VI STORAGE FACILITIES

RECEIVING & SHIPPING SPACE TOTAL 1200 SQ. FT.
SUPPLY DEPARTMENT OFFICE SPACE TOTAL 800 SQ. FT.

A GENERAL STORES CLASSES 5 TO 75
TOTAL GROSS AREA 6000 SQ. FT.

B AVIATION STORES CLASSES 80 TO 93
TOTAL GROSS AREA 7000 SQ. FT.

C INFLAMMABLE STORES PAINT & OIL
TOTAL GROSS AREA 1084 SQ. FT.

G COLD STORAGE
TOTAL GROSS REFRID. SPACE 6466 CU FT.

K GASOLINE BULK STORAGE
AVIATION 126200 GALS. TOTAL CAPACITY
AUTOMOTIVE 10000 GALS. TOTAL CAPACITY

L LUBRICATING OIL BULK STORAGE
TOTAL CAPACITY NONE GALS.

VII AIRCRAFT REPAIR FACILITIES

CLASS 0
TOTAL AREA 76035 SQ. FT.

ALL OTHER AIRCRAFT REPAIR FACILS SHOWN UNDER IX C BELOW (UTILITY SHOPS)

IX LANDPLANE FACILITIES

A HANGARS EXCLUSIVE OF LEAN TOS

NO.	DOOR OPENING CLEARANCES HEIGHT	DOOR OPENING CLEARANCES WIDTH	HANGARS SPAN	HANGARS LENGTH	SPRINKLER SYSTEM	TYPE CONSTR.
1	32	120	120	200	YES	~~CWCAH~~
1	27	105	105	187	NO	CWCAH
1	32	120	120	100	YES	CWCAH

C UTILITY SHOPS NOT SHOWN UNDER AIRCRAFT REPAIR FACILS
TOTAL 11120 SQ. FT.

D LANDPLANE PARKING AREA

GROSS AREA IN SQUARE YARDS	NET AREA DEDUCTING ACCESS LANES	TYPE OF SURFACE	MAXIMUM WEIGHT OF PLANE ACCOMMODATED
86000	57332	ASPHALT	30000

G RUNWAYS

NUMBER	1	2	3	4	5	6
TYPE OF SURFACE	ASPH	ASPH	ASPH			
MAGNETIC BEARING	040 220	170 350	120 300			
LENGTH	5800	5250	4800			
WIDTH	200	200	200			
MAXIMUM WEIGHT OF PLANE ACCOMMODATED	30M	30M	30M			

X LTA FACILITIES

A LANDING MATS

MAXIMUM WEIGHT OF PLANE (MTAI) ACCOMMODATED	TYPE SURFACE	AREA IN SQUARE YARDS	SIZE

B MOORING OUT CIRCLES

NO.	DIAMETER	TYPE OF SURFACE

C LTA HANGARS

CLEARANCE OF DOOR HEIGHT	CLEARANCE OF DOOR WIDTH	CLEAR HEIGHT IN HANGAR	LENGTH & WIDTH	TYPE CONSTR.

XI SEAPLANE FACILITIES

A HANGARS EXCLUSIVE OF LEAN TOS

NO.	DOOR OPENING CLEARANCES HEIGHT	DOOR OPENING CLEARANCES WIDTH	HANGARS SPAN	HANGARS LENGTH	SPRINKLER SYSTEM	TYPE CONSTR.

C SEAPLANE RAMPS

NO.	SIZE	SLOPE	TYPE CONST.	WATER DEPTH AT END	MAXIMUM WT. PLANE ACCOMM.

D SEAPLANE PARKING AREA

GROSS AREA IN SQUARE YARDS	NET AREA DEDUCTING ACCESS LANES	TYPE OF SURFACE	MAXIMUM WEIGHT OF PLANE ACCOMMODATED

E SEAPLANE OPERATING CHANNELS OR AREAS

NO.	DIRECTION	WIDTH IN FEET	LENGTH IN FEET	DEPTH IN FEET BELOW MLW
1				
2				
3				
4				
5				

XIV ORDNANCE FACILITIES

A SHOPS

AVIATION ORDNANCE SHOPS TOTAL 2880 SQ. FT.

B AMMUNITION STORAGE STRUCTURES

HIGH EXPLOSIVE MAGAZINES	TOTAL	1000	SQ. FT.
TORPEDO STORAGE MAGAZINES	TOTAL	NONE	SQ. FT.
SMALL ARMS MAGAZINES	TOTAL	7900	CU. FT.
PYROTECHNIC MAGAZINES	TOTAL	500	CU. FT.
FUSE & DETONATOR MAGAZINES	TOTAL	500	CU. FT.
READY MAGAZINES	TOTAL	7000	CU. FT.
READY AMMUNITION LOCKERS	TOTAL	NONE	SQ. FT.
SMOKE DRUM STORAGE	TOTAL	NONE	SQ. FT.
INERT STORAGE	TOTAL	9600	SQ. FT.

ACTIVITY: NAAS CHARLESTOWN R I

AIR STATIONS BR SECRE ASF DIV SUARR

DEPARTMENT OF THE NAVY
Bureau of Ordnance
Washington, 25, D.C.

In Reply Refer to:
IN-TJM:mch
NA 43
29 Oct 1953

RESTRICTED SECURITY INFORMATION

From: Chief, Bureau of Ordnance
To: Commanding Officer
U.S. Naval Air Station
Quonset Point, Rhode Island

Via: Chief, Bureau of Aeronautics

Subj: Inspection of Ammunition and Explosives Stowage and Handling at the U.S. Naval Air Station, Quonset Point, Rhode Island on 24 September 1953, Report of

Ref: (a) Articles 0417, 0435, 0436 U.S. Navy Regulations 1948

Encl: (1) Report of Inspection of Ammunition and Explosives stowage and Handling at the U.S. Naval Air Station, Quonset Point, Rhode Island on 24 September 1953, by the Inspector of Naval Ordnance Establishments (Bureau of Ordnance)

1. In accordance with reference (a), Assistants to the Inspector of Naval Ordnance Establishments (Bureau of Ordnance), LCDR T. J. McTiernan USN, and LCDR W. H. Funston USN inspected the safety of stowage and handling of ammunition and explosives at the U.S. Naval Air Station, Quonset Point, Rhode Island on 24 September 1953.

2. Enclosure (1) is a report of the conditions noted at the U.S. Naval Air Station, Quonset Point, Rhode Island, including suggestions or indicated procedures for corrective action.

M. F. SCHOEFFEL

W. S. Parsons

W. S. PARSONS
Deputy and Assistant Chief

Copy to:
COM ONE ND
COMNAB ONE ND
CNO (OP 08)
OIR
ASESB
BUAER (PE28)

RESTRICTED

ENCLOSURE (1)

REPORT OF INSPECTION OF AMMUNITION AND EXPLOSIVES STOWAGE AND HANDLING AT THE U.S. NAVAL AIR STATION, QUONSET POINT, RHODE ISLAND ON 24 SEPTEMBER 1953, BY THE INSPECTOR OF NAVAL ORDNANCE ESTABLISHMENTS (BUREAU OF ORDNANCE)

(Items noted herein were discussed with and copies of field notes were provided the Commanding Officer)

1. Any comment or deficiency noted as to a specific location or arrangement may be applicable to similar conditions, equipment or arrangement at other locations, and accordingly, should be checked at all such other locations and be corrected as needed. No item of the inspection should be reported as completed before this condition (i.e. correction of the item at all locations) is met.

2. Previous BuOrd (IN) inspection. The deficiency noted in the BuOrd (IN) inspection of 16 November 1951 was found to have been corrected satisfactorily.

3. Authorization for Ammunition and Explosives Stowages. It was noted, in several instances, that changes in stowages have been made and that BuOrd authorization for the changes had not been obtained. Currently the Rhode Island Air National Guard is utilizing the magazines at the U.S. Naval Auxiliary Landing Field (a satellite of Naval Air Station Quonset Point) for the stowage of .50 cal., 2.25 (SCAR) rockets, pyrotechnic items and miniature practice bombs. The Inspector was not presented with the BuOrd authorization for these stowages. The Inspector was advised that a request for authorization for stowages at Naval Air Station Quonset Point and Naval Auxiliary Landing Field Charlestown is being prepared for submission to BuOrd. Ref: Par 687-691 OP 5 and Art. 14D4 BuOrd Manual.

4. Burning Ground Area. Burning operations, involving pyrotechnic items, have been conducted at the dump located near the Construction Battalion Center, Davisville, Rhode Island. The inspector was not presented with the BuOrd authorization for use of this site for burning operations. It was recommended that BuOrd be requested for authorization to use the dump site. Ref: Chapter 8 OP 5, and OP 998

RESTRICTED
SECURITY INFORMATION

ALF CHARLESTOWN, R. I.

Sheet # 1

1. Building Number # 56 Size 24'x36'x14'
2. Magazine Number # 1-SH-1
3. Type and Construction. Inert Magazine. Foundation, concrete floor. Wood frame with corrigated asbestos siding. Two (2) 5'x10' doors. Capacity; 864 sq.ft. Vol. 8640 cu.ft.

4. Permissible Stowage. Inert Ordnance Material
5. Maximum Permissible Quantities. 8000 cu.ft.
6. Actual Contents.

100 lb. WSF Practice Bombs property of Rhode Island Air National Guard.

Distance in Feet to Nearest.
Off Station

Inhabited Building	Public Railway	Public Highway	Navigable Channel
3900	34680	3700	*NA

Remarks:

1. Building Number # 57 Size 6'x8'x8"
2. Magazine Number # 1-YC-2
3. Type and Construction. Keyport type construction ¼" corrigated steel. Earth covered. No barricade.

4. Permissible Stowage. Smokeless Powder
5. Maximum Permissible Quantities. 10,000 lbs.
6. Actual Contents. EMPTY

Distance in Feet to Nearest.
Off Station

Inhabited Building	Public Railway	Public Highway	Navigable Channel
4,050	34730	3950	*NA

Remarks:

RESTRICTED

Sheet # 2

1. Building Number # 58 Size 25'x50'
2. Magazine Number # 1-YC-3
3. Type and Construction. Foundation; concrete. Floor; ¼" corrigated steel arch. Earth covered. No barricade.

4. Permissible Stowage. Smokeless Powder
5. Maximum Permissible Quantities. 10,000 lbs.
6. Actual Contents. Scar Rockets - 600 rds. Property of Rhode Island Air National Guard

Distance in Feet to Nearest.
Off Station

Inhabited Building	Public Railway	Public Highway	Navigable Channel
4,050	34830	4050	*NA

Remarks:

1. Building Number #59 Size 6'x8'x8"
2. Magazine Number # 1-XT-4
3. Type and Construction. Keyport type construction; ¼" corrigated steel. Earth covered and barricaded.

4. Permissible Stowage. High Explosives
5. Maximum Permissible Quantities. 15,000 lbs.
6. Actual Contents.

EMPTY

Distance in Feet to Nearest.
Off Station

Inhabited Building	Public Railway	Public Highway	Navigable Channel
4075	34855	4075	*NA

Remarks:

ALF CHARLESTOWN, R. I.

SECURITY INFORMATION

Sheet # 3

1. Building Number # 60 Size 25'x50'
2. Magazine Number # 1-XT-5
3. Type and Construction. Foundation concrete; concrete floor; ¼" corrigated steel arch. Earth covered and barricaded.

4. Permissible Stowage. High Explosives
5. Maximum Permissible Quantities. 125,000 lbs.
6. Actual Contents. .50 Cal. Ammunition. Property of Rhode Island Air National Guard

Distance in Feet to Nearest.
Off Station

Inhabited Building	Public Railway	Public Highway	Navigable Channel
3625	34630	3850	*NA

Remarks: *Not applicable - Excess distance

1. Building Number #
2. Magazine Number #
3. Type and Construction.

4. Permissible Stowage.
5. Maximum Permissible Quantities.
6. Actual Contents:

Distance in Feet to Nearest.
Off Station

Inhabited Building	Public Railway	Public Highway	Navigable Channel

Remarks:

Technical Note N-1152

AIRFIELD PAVEMENT CONDITION SURVEY, USNALF CHARLESTOWN, RHODE ISLAND

By

D. J. Lambiotte and L. J. Woloszynski

February 1971

Approved for public release, distribution unlimited.

NAVAL CIVIL ENGINEERING LABORATORY
Port Hueneme, California 93043

INTRODUCTION

In October 1969, the Naval Facilities Engineering Command authorized a series of periodic pavement condition surveys to be conducted at Naval and Marine Corps air stations. The purpose of this condition survey task is to determine the suitability of the airfield pavement surfaces for aircraft operational requirements and to establish a uniform basis for maintenance and repair efforts. During the month of July 1970, a pavement condition survey was conducted at the U. S. Naval Auxiliary Landing Field, Charlestown, Rhode Island. The survey consisted of a sophisticated, statistically-based procedure of pavement defect identification and defect measurement which permitted the establishment of condition numbers (weighted defect densities) which are direct indicators of the surface condition of the asphaltic concrete (AC) and/or portland cement concrete (PCC) airfield pavement facilities. (Note that although NALF Charlestown had no portland cement concrete pavements, the general comments pertaining to survey techniques and methods of obtaining ratings which deal with both asphaltic and portland cement concrete pavements are included in this report.) Though different survey techniques were used for the two pavement types, the resulting defect densities often were similar numerically. However, this was coincidental. The defect densities for the two types of pavement are incompatible and must be considered separately. Additional survey efforts included photographic coverage of defect types, preparation of the construction history of the station, compilation of data on current aircraft traffic and aircraft types using the station, performance of runway skid resistance tests, and delineation of requirements for future pavement evaluation efforts at the station.

BACKGROUND

The U. S. Naval Auxiliary Landing Field, Charlestown, is located in Washington County, 28 miles southwest of NAS Quonset Point, Rhode Island, at an elevation of 32 feet. An aerial photograph of the station is shown in Figure 1. The airfield has three runways: Runway 12-30, which is 4,830 feet long; Runway 17-35 at 5,280 feet; and Runway 4-22 at 5,850 feet. All three runways are used primarily for carrier landing practice of aircraft from squadrons deployed at NAS Quonset Point. Taxiways and the parking apron received very little use during the time this condition survey was made.

CONSTRUCTION HISTORY

All three runways and the southern portion of the parking apron were constructed in 1942. All runways were extended in 1943. The northern section of the parking apron and taxiways 5, 6, 7, 8 and 9 were constructed in 1944. A complete history of construction and recorded maintenance is provided in Appendix A.

CURRENT AIRCRAFT TRAFFIC

A tabulation of the number of aircraft operations for a 12-month period is shown in Table 1. Table 2 lists the aircraft which normally use the facilities at NALF Charlestown.

CONDITION SURVEY PROCEDURES

The condition survey procedures used in this study are as follows:

Step 1. Preliminary Survey

In the preliminary survey the evaluators made a general and personal inspection of all airfield pavement areas, during which they noted the type and distribution of defects in each facility (runway, taxiway, etc.). In addition, a previously-prepared construction history was consulted and areas of different construction and different pavement type (AC or PCC) within a facility were noted. As a result of these efforts, each pavement facility was then divided into "discrete areas" of reasonably similar failure modes for performance of the subsequent sampling and tally or measurement of defects. Thus, if the type and/or number of defects found in one portion of a facility were distinctly different from those found in another portion of that facility, discrete areas were selected on this basis. If, however, the pavement facility contained few defects or if the defects found were similar in type and distribution throughout the facility, each facility was individually divided for survey according to the construction history. Under either criterion, a discrete area may vary, for example, from a 500-foot length of runway or taxiway to the entire length of the facility. Discrete areas selected at NALF Charlestown are shown in Figure 2. Note that all discrete areas are numbered with a system that relates the discrete area to the runway, taxiway, etc., of which it is a part. For example, the discrete area comprising Runway 17-35 is designated R17-1, the discrete area for Taxiway 2 is T2-1, and so on.

A special survey of singular occurrences of serious defects was made during the preliminary survey. This is necessary because the statistical sampling techniques utilized in the subsequent survey are

Table 1. Operations Data for USNALF Charlestown, Rhode Island

Month	Number of Operations (includes touch and go)
Jan 69	5,545
Feb 69	3,995
Mar 69	2,046
Apr 69	3,826
May 69	4,023
Jun 69	29
Jul 69	7,114
Aug 69	3,312
Sep 69	532
Oct 69	5,056
Nov 69	904
Dec 69	450
Average monthly operations for above 1-year period	3,069

Note: Less than 1% of operations by aircraft with 20,000-pound single gear load or heavier.

Table 2. Aircraft Using USNALF Charlestown, Rhode Island

Aircraft based at station	None
Aircraft using facilities	S-2, T-28, C117, SH3A(Helo), HUS(Helo)

Note: Most of the aircraft using USNALF Charlestown are based at NAS Quonset Point and use USNALF Charlestown facilities for carrier landing practice.

Historic and Archaeological Resources at Charlestown Naval Landing Field

In 1974, the RIHPHC archaeologist, John Senulis, conducted a survey of the air base, which was neither well planned nor well executed. Based on this study, our office identified four prehistoric sites in the refuge. Our site numbers for these are RI 16 (RI-CH-2)--the Foster Cove site, RI 19 (RI-CH-5), RI 20 (RI-CH-6), and RI 677. (An aside on site numbers--in the 1970s, sites were ordered according to town, CH indicating Charlestown. We have since abandoned this approach, and now have a single numerical list for the whole state). A map showing these sites is enclosed.

RI 16 was located in Senulis trenches 2 and 19. It is a Late Woodland shell midden/habitation site with ceramics and chipping debris. Based on two Senulis trenches, the RIHPC determined that the site was eligible for listing on the National Register of Historic Places, but Senulis did not successfully complete the nomination form. In 1979 (post-Senulis), two archaeologists from this office excavated a series of shovel test pits to determine the horizontal extent of the site. The site is currently listed on the National Register of Historic Places.

RI 19 was located in trench 8 (16 flakes, 4 of which were chert/chalcedony). This area seemed relatively undisturbed. No subsequent work defining the nature or extent of this site has been undertaken.

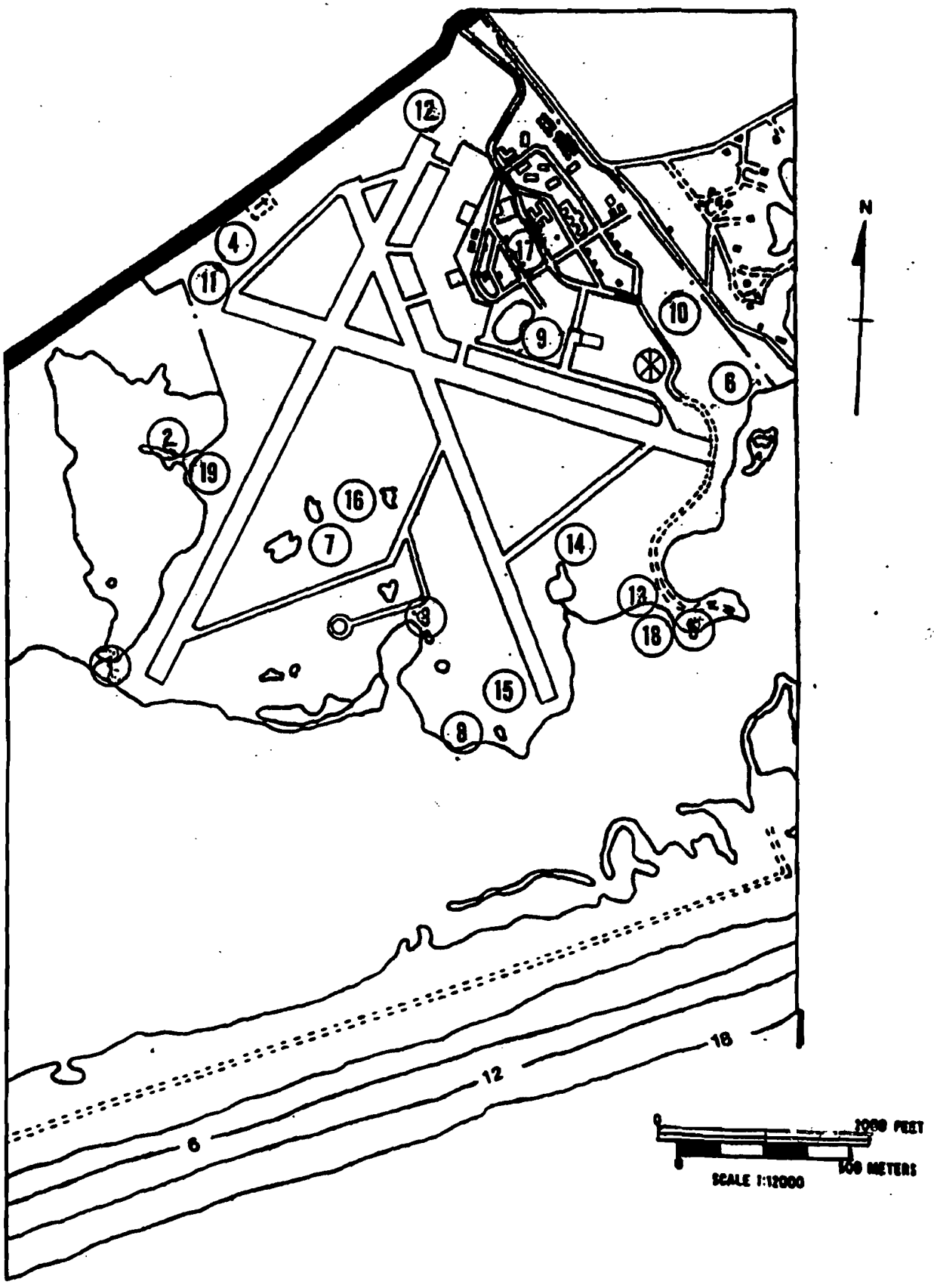
RI 20 was identified in trenches 7 and 16, where a small amount of quartz chipping debris was located. It also could include trench 9, which was located incorrectly on the Senulis site map, and seems to have been closer to the other two trenches.

RI 677 was designated an official "site" some time after the actual survey. This site is Senulis' Trench 6, and seems to be a shell midden. As well as large quantities of oyster shell, the site also contained quartz and chert or chalcedony chipping debris/possible bifaces. Because of time constraints, the 1974 team did not define the boundaries of this site.

We do not have any sort of survey of the above-ground resources of the Naval Air base itself (the Senulis report looked at resources in the vicinity only); it is possible that significant above-ground resources from the WW II era survive.

U.S. NAVAL AUXILIARY AIR STATION
ARCHEOLOGICAL SURVEY

TRENCH LOCATION



Source. USDA Soil Conservation Service 1972

NEDRE-C

Defense Environmental Restoration Project (DERP)
Naval Auxiliary Landing Field, Charlestown, RI

Ch, Engineering Div

Ch, Real Estate Div

5 Mar 85
Batt/jag/590

1. Inclosed are three copies of the Findings and Determination under the subject program for the Naval Auxiliary Landing Field in Charlestown, Rhode Island.

2. It is requested that your Division prepare and attach the estimate for the work being recommended and forward two copies of the complete report to Huntsville Division, the third copy is for your files.

3. It is pointed out that the recommendation for isolating and testing the possible toxic and munitions waste site is based upon information received after the site inspection with the engineer. This added recommendation should be considered in the cost estimate.

4. There has been strong interest expressed by the office of Senator John H. Chafee of Rhode Island to have this report forwarded to Huntsville Division as soon as possible. This fact should be included in the forwarding letter to HND.

Incls.
as

RICHARD T. BOGACZYK
Chief, Real Estate Division

CF: R.E. Div File

U.S. ARMY ENGINEER DIVISION - NEW ENGLAND
DEFENSE ENVIRONMENTAL RESTORATION PROGRAM

FINDINGS AND DETERMINATION OF DOD RESPONSIBILITY NAVAL AUXILIARY LANDING FIELD, CHARLESTOWN, RHODE ISLAND PROJECT NO. D01RI000801

Based on the findings set forth below, the proposed environmental restoration of the former Naval Auxiliary Landing Field at Charlestown, Rhode Island is within the authority and meets the criteria of Public Law 98-212 (97 Stat. 1427).

FINDINGS OF FACT

1. Synopsis of Proposed Project

This Division proposes the removal of 8-10 underground fuel tanks containing various levels of contaminated jet fuel aviation gas, gasoline, and fuel oil. Also proposed is the demolition and removal of one complete one story brick building and further demolition and removal of extensive walls, foundations, pads, adjacent walks and parking areas at 14 sites throughout the installation, one of these sites also has an old water tank head to be removed and several have underground vaults with valves and other equipment to be extracted and filled. A further area is the site of an old sewage distribution system to be removed. Also to be removed is approximately 500,000 sq. ft. of an old bituminous and concrete runway. The town requests that all restored areas be filled, graded and seeded. It is also recommended that the former dump site be tested for possible toxic and munitions contamination as suggested in this report by the RIDEM.

2. Real Estate History

The Charlestown Naval Auxiliary Landing Field was constructed between 1940 and 1942 as a training field for naval pilots and aviation crews. After World War II it continued to be used somewhat for training and as an alternate landing site in support of the Quonset Point Naval Air Station, Rhode Island until its closing in 1970. It was reported to GSA for disposal in 1974.

The entire installation originally consisted of 604 acres. The area covered by this report is the 227 acres conveyed to the Town of Charlestown, Rhode Island. The remaining 377 acres was granted to the Department of Interior, Fish and Wildlife Service and is managed by them as the Ninigret National Wildlife Refuge. The local office of The Fish and Wildlife Service has indicated that there is much work they would like to have done under the DERP program. An inspection will be made of the Ninigret NWR site and a report submitted as an addendum to this finding at a later date.

The 227 acres covered by this report was granted to the Town of Charlestown in two parcels. By deed, dated 22 May 1981, 172.4 acres were conveyed to the town for public park or public recreation purposes. By deed, dated 18 June 1982, 55.0 acres were conveyed to the town for consideration in the amount of $279,000.00 A review of both these instruments revealed no conditions or language either establishing or releasing Government responsibility for restoration.

3. Site Inspection

The site was inspected on 17 September 1984 by Robert L. Batt, Realty Specialist (FTS 839-7590) and Paul Schimelfinyg, Engineer (FTS 839-7394) who met with the POC George F. Bliven, the Director of Recreation for the Town of Charlestown, (401/364-7718).

Mr. Bliven began by explaining that the town's primary concern was to have two underground aviation fuel tanks removed. These tanks are located close to a recently completed 2-1/2 acre freshwater pond which is part of a public recreation area. They have discovered traces of fuel residue in the water of this pond and suspect that it may come from leakage of these tanks. The tanks are partially full of water contaminated aviation fuel. The town feels very strongly about having these tanks removed as soon as possible because they suspect they threaten the water quality, and therefore the public image, of this public use area. The tanks have never been used since being abandoned by the military.

The site where they are located is a heavily overgrown section of ground with several concrete pads and old foundations some of which house old fuel valves and connections. Mr. Bliven would like all of these removed and the area returned to a natural state.

A second site, being the former Motor Pool and Refueling area, has three underground tanks they would like removed. Mr. Bliven believes two are at least partly full of gasoline and one has diesel fuel. This area will be converted in the future to a municipal multi-purpose recreational field, the town would like to have these tanks removed before this happens. The tanks are 15 feet apart, with a drop of 9-1/2 feet from ground level to the top of the fluid in one of the tanks. They would also like the concrete piers at the surface directly over the tanks removed.

There are two boiler houses, each having one or two underground fuel oil tanks apiece. At the one referred to as the "coal fired boiler house" the concrete foundation walls of the demolished building must be removed. At the other site, known as the "oil fired boiler house", the structure remains and the town wishes to retain it, however, Mr. Bliven has requested that some large pits inside the house be cleaned out, filled in and leveled. The underground tanks at both these sites need to be removed.

The site of the water tower and boiler building has an underground fuel tank, contents unknown, that must be removed. Also, a dilapidated brick boiler building must be demolished and removed, as well as various adjacent concrete wall foundations and water tower footings. Two submerged concrete valve chambers must be removed and filled in. A hemispherical steel water tower head is lying on the ground and must be removed.

In addition to the above, there are several sites where former concrete buildings and structures stood. All that remain are broken walls and foundations; concrete pads, mats and footings; and concrete and bituminous walks and parking lots. These areas are covered in most cases with rubble and debris that consist of broken building materials. They are overgrown in many cases with grass and scrub growth. These rubble sites are identified as the old wood hangar foundation sites nos. 1 and 2; the fire house; the canteen, theatre, and gymnasium site; the heater house; dispensary; barracks building; CPO buildings site; and navy storage pads. Mr. Bliven would like to see all these and the other areas, cleared, filled, graded and seeded.

Another area was identified as a sewage outflow distribution system. This consisted of a central concrete distribution box with lines leading to a circular perimeter of smaller concrete outlet boxes. The boxes, lines and ground are overgrown with grasses and scrub growth. The area also seems to have been used in recent times as a dump site for a comparatively small amount of trash and refuse. Mr. Bliven would like the boxes and lines removed to an area where they can be buried and the area filled and graded.

A large sloped area across the street from the sewer distribution system was identified as a former navy dump site and land fill. Mr. Bliven did not believe that any of the material was of a toxic nature. However, a later conversation with a representative of the Rhode Island Department of Environmental Management, Mr. John Leo (401/277-2797), indicated that there may indeed be both toxic wastes and ordinance materials deposited in this site. He believed there were "demi-bombs" disposed of here from the time this area was used to train air crews, there is also evidence of highly corroded and broken up 55 gal. drums. In addition, he felt that there were many airplane and heavy equipment parts buried here that may have been contaminated with degreasing and deicing agents. He is particularly concerned because the water table in this area is affected by tidal action, this situation would exacerbate the many years of leaching that have occurred here already. Now that this area is being developed for public recreation the possible effect if contaminates are present should be considered. Mr. Leo suggests that the dump site area, which includes the slope across from the sewer distribution site and extends somewhat further along the road in a southeasterly direction, has been in place for so long that digging it up, at least initially, would only intensify the danger of spreading toxic materials that have long since had their containers corroded away. He suggests isolating and restricting the area with signs and digging a series of (2-4) monitoring wells to test the degree of toxicity that may be in the ground water. The munitions should not be a problem if the area is restricted, and may be further dealt with later if excavation is determined to be necessary.

Mr. Bliven also stated the town would like a portion of the old navy runway and taxiway removed. One of the runways is being retained by the town for recreation activities. The other runway, consisting of approximately 500,000 sq. ft. has score marks where the town attempted to break it up and remove it. The attempt was abandoned when the town discovered their equipment was not sufficient for the job and they did not have the funds to contract it out. The runway consists of bituminous asphalt with adjacent concrete pads.

Mr. Bliven stated there were dump sites located in the vicinity sufficiently large to hold the building rubble and the torn up runway material.

Attached to this report are photographs of the site and a map of the town's portion of this installation that was provided by Mr. Bliven. The map shows in pencil roughly the location of some of the areas to be restored.

DETERMINATION

Based on the foregoing findings of fact, the hazardous and unsightly conditions at the former Charlestown Naval Auxiliary Landing Field have been determined to be the result of prior DOD utilization. For the reasons stated above, it is determined that an environmental restoration project to remedy the conditions is an appropriate undertaking within the purview of the Defense Environmental Restoration Program under Public Law 98-212.

Motor Pool area, to be converted recreation area

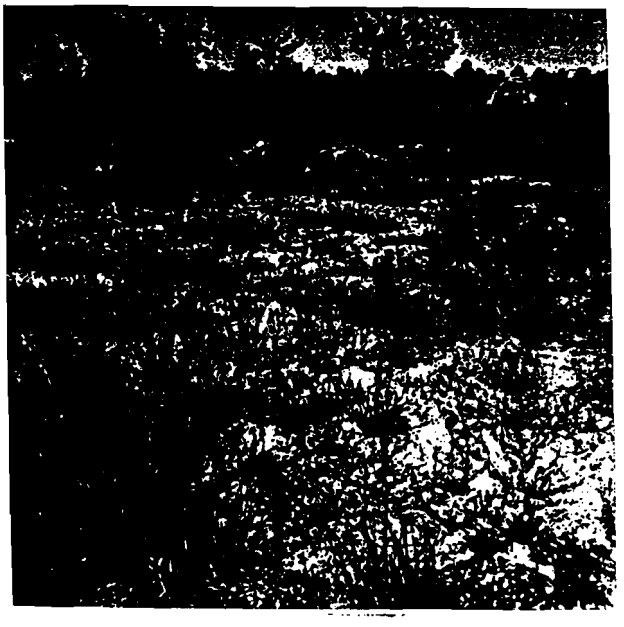
Sewer distribution system site, trash visible

Sewer distribution system, overgrown central distribution box

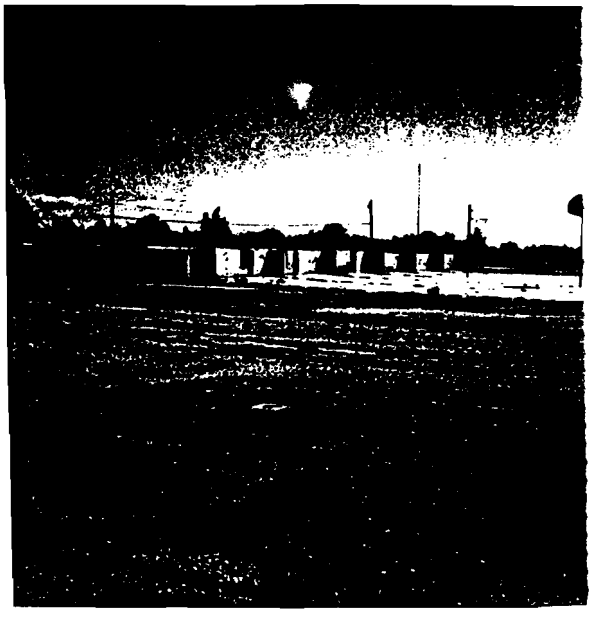
Sloped dump site across street from sewer distrubution system

Pieces of broken foundation wall

Steel water tank head



Area next to water tank head, with underground tanks, lines, and valve chambers



Motor Pool area, to be converted to recreation area

Value chamber at site of underground aviation gas tanks

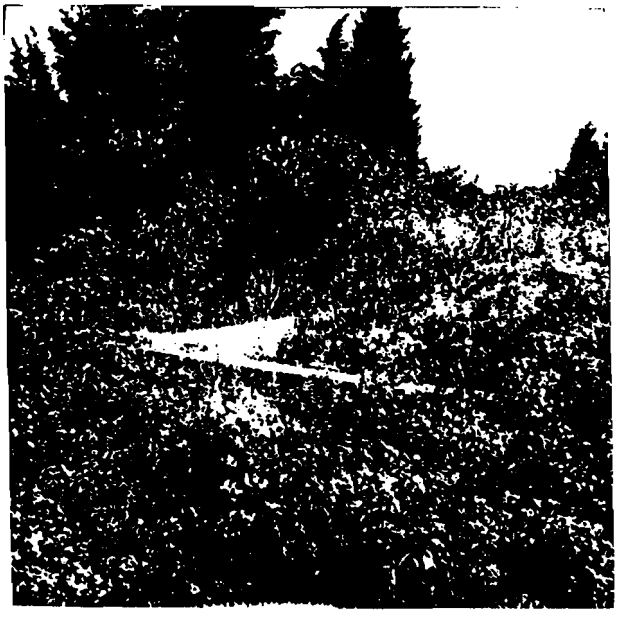
Typical concrete mat for former building

Former CPO buildings site, typical broken up foundation

Typical old foundation wall, debris filled and overgrown

Site of underground aviation gas tanks

Site of underground aviation gas tanks

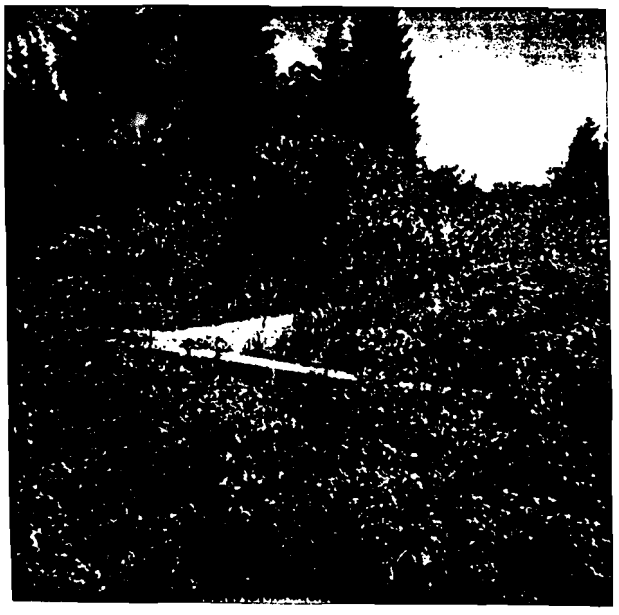


Site of underground aviation gas tanks

Site of underground aviation gas tanks

Site of underground aviation gas tanks

Site of underground aviation gas tanks



Site of underground aviation gas tanks

Site of underground aviation gas tanks

U.S. DEPT. OF THE INTERIOR
FISH AND WILDLIFE SERVICE
NINIGRET REFUGE

T.D.C.
REFUGE MANAGER: CHARLES BLAIR

CHARLESTOWN, R.I. (NAVAL AUX. AIR STATION)

ITEM NO. 1- HAZARDOUS WASTE SITE (POTENTIAL)

ITEM NO. 2- HAZARDOUS WASTE SITE (POTENTIAL)

ITEM NO. 3- BUNKER (2 EA. SIMILAR CONSTRUCTION)

ITEM NO. 4- PUMP HOUSE (CONC. STRUCTURE + DISTRIBUTION SYSTEM)

ITEM NO. 5- RUNWAY & TAXIWAYS (BIT. CONC. PAVEMENT + GRAVEL BASE)

ESTIMATE: 11-1-85

ITEM NO. 1 - HAZARDOUS WASTE SITE (POTENTIAL) HUNTER ISLAND. SEE SKETCH #1

AN AREA (150' x 75') USED FOR DUMPING MISC. MATERIALS. A VISUAL INSPECTION REVEALED MISC. DEBRIS CONTAINING POSSIBLE AIR CRAFT PARTS, BROKEN PAVEMENT, CONC. BLOCKS, GENERAL TRASH AND EMPTY, RUSTED DRUM TYPE CONTAINERS.

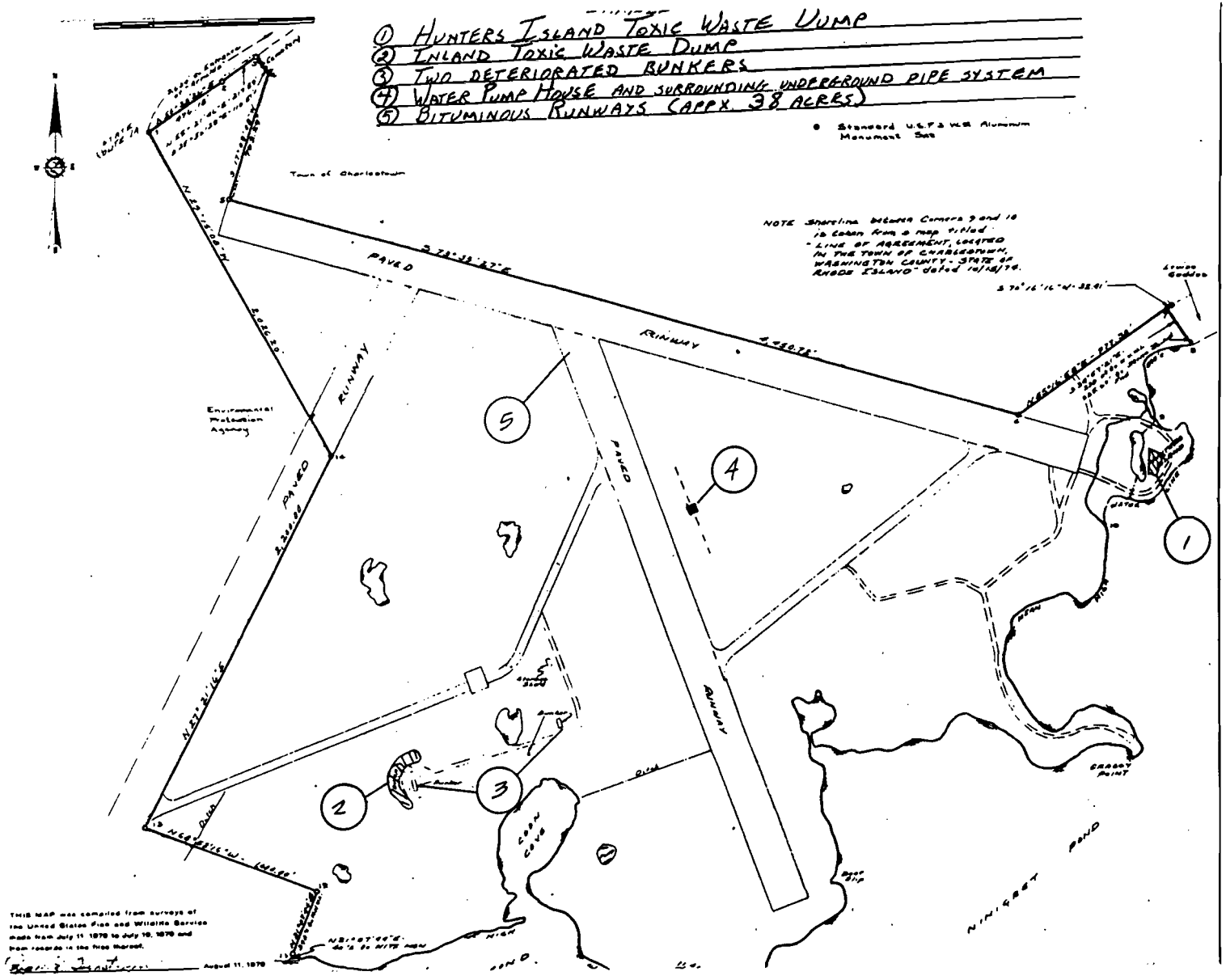
* NOTE:

ITEM NO. 2 - HAZARDOUS WASTE SITE (POTENTIAL) INLET SITE. SEE SKETCH #1

AN AREA APPROX. 1/2 ACRE USED FOR DUMPING MISC. MATERIALS. A VISUAL INSPECTION REVEALED MISC. DEBRIS CONTAINING POSSIBLE AIRCRAFT PARTS, BROKEN PAVEMENT, CONC. BLOCKS, GENERAL TRASH AND SUSPECTED DRUM TYPE CONTAINER.

* NOTE:

* ESTIMATE NOT AVAILABLE UNTIL SOIL AND/OR GROUND WATER TESTING IS ACCOMPLISHED?


① HUNTERS ISLAND TOXIC WASTE DUMP
② INLAND TOXIC WASTE DUMP
③ TWO DETERIORATED BUNKERS
④ WATER PUMP HOUSE AND SURROUNDING UNDERGROUND PIPE SYSTEM
⑤ BITUMINOUS RUNWAYS (APPX. 38 ACRES)
PAVED
RUNWAY
PAVED
RUNWAY
PAVED
RUNWAY
NEST BUILDER
Environmental Protection Agency
Town of Charlestown
GRASSY POINT
POND
NINIGRET
1
2
3
4
5

PRELIMINARY ASSESSMENT REPORT

Activity Name:	Former Naval Air Station (NAS) Charlestown
Address:	P.O. Box 307 Charlestown, RI 02813
UIC:	N00127
EPA Region:	1
EPA Identification:	RI 9143530260
Latitude:	41° 24′ N
Longitude:	071° 40′ W

Prepared by:
Thomas Flaminio, Environmental Engineer
Vern Novstrup, Civil Engineer
Naval Energy and Environmental Support Activity
Port Hueneme, CA 93043

NEESA 13-164PA
March 1988

Priority for Inspection: None

No further action is recommended under the Navy Installation Restoration Program, because the facility has been transferred to the U.S. Fish and Wildlife Service and town of Charlestown, Rhode Island. Information regarding the present status of installation restoration studies under the Formerly Used-Site Restoration Program may be obtained by contacting the Army Corps of Engineers, Huntsville Division.

EPA

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT
PART 1 - SITE INFORMATION AND ASSESSMENT

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
RI	9143530260

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
Former Naval Air Station, Charlestown	

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Charlestown	RI	02813	Washington	009	02

09 COORDINATES LATITUDE	LONGITUDE
41 24 __.N	071 40 W.__

10 DIRECTIONS TO SITE (Starting from nearest public road)

The facility is located south of U.S. highway 1 on the north side of Ninigret Pond.

III. RESPONSIBLE PARTIES

01 OWNER (If known)	02 STREET (Business, mailing, residential)
U.S. Fish and Wildlife Service (USF&WS)	

03 CITY	04 STATE	05 ZIP CODE	06 TELEPHONE NUMBER
and town of Charlestown			( )

07 OPERATOR (If known and different from owner)	08 STREET (Business, mailing, residential)

09 CITY	10 STATE	11 ZIP CODE	12 TELEPHONE NUMBER
			( )

13 TYPE OF OWNERSHIP (Check one)

☐ A. PRIVATE ☒ B. FEDERAL: USF&WS (Agency name) ☐ C. STATE ☐ D. COUNTY ■ E. MUNICIPAL

☐ F. OTHER: _____ (Specify) ☐ G. UNKNOWN

14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply)

☐ A. RCRA 3001 DATE RECEIVED: __/__/__ (MONTH DAY YEAR) ■ B. UNCONTROLLED WASTE SITE (CERCLA 103 c) DATE RECEIVED: unknown (MONTH DAY YEAR) ☐ C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION

☐ YES DATE __/__/__ (MONTH DAY YEAR)
■ NO

BY (Check all that apply)

☐ A. EPA ☐ B. EPA CONTRACTOR ☐ C. STATE ☐ D. OTHER CONTRACTOR
☐ E. LOCAL HEALTH OFFICIAL ☐ F. OTHER: _____ (Specify)

CONTRACTOR NAME(S): _____

02 SITE STATUS (Check one)

☐ A. ACTIVE ■ B. INACTIVE ☐ C. UNKNOWN

03 YEARS OF OPERATION

_____ BEGINNING YEAR | _____ ENDING YEAR ☐ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED

The facility has been transferred to the U.S. Fish and Wildlife Service and town of Charlestown, Rhode Island.

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION

not applicable

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and Incidents)

☐ A. HIGH (Inspection required promptly) ☐ B. MEDIUM (Inspection required) ☐ C. LOW (Inspect on time available basis) ☒ D. NONE (No further action needed, complete current disposition form)

VI. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NUMBER
Ron Vandageriff	Army Corps of Engineers	(205) 247-3204

04 PERSON RESPONSIBLE FOR ASSESSMENT	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NUMBER	08 DATE
Thomas Flaminio	Navy	NEESA, Port Hueneme, CA 93043	(805) 982-4502	10/20/87 (MONTH DAY YEAR)

EPA FORM 2070-12 (7-81)

1. ACTIVITY DESCRIPTION

Former Naval Air Station (NAS) Charlestown is located in southwestern Rhode Island in the coastal town of Charlestown in Washington County. The facility consists of approximately 605 acres (Army Corps of Engineers, 1987). A site map of the facility is shown in Figure 1.

2. FINDINGS

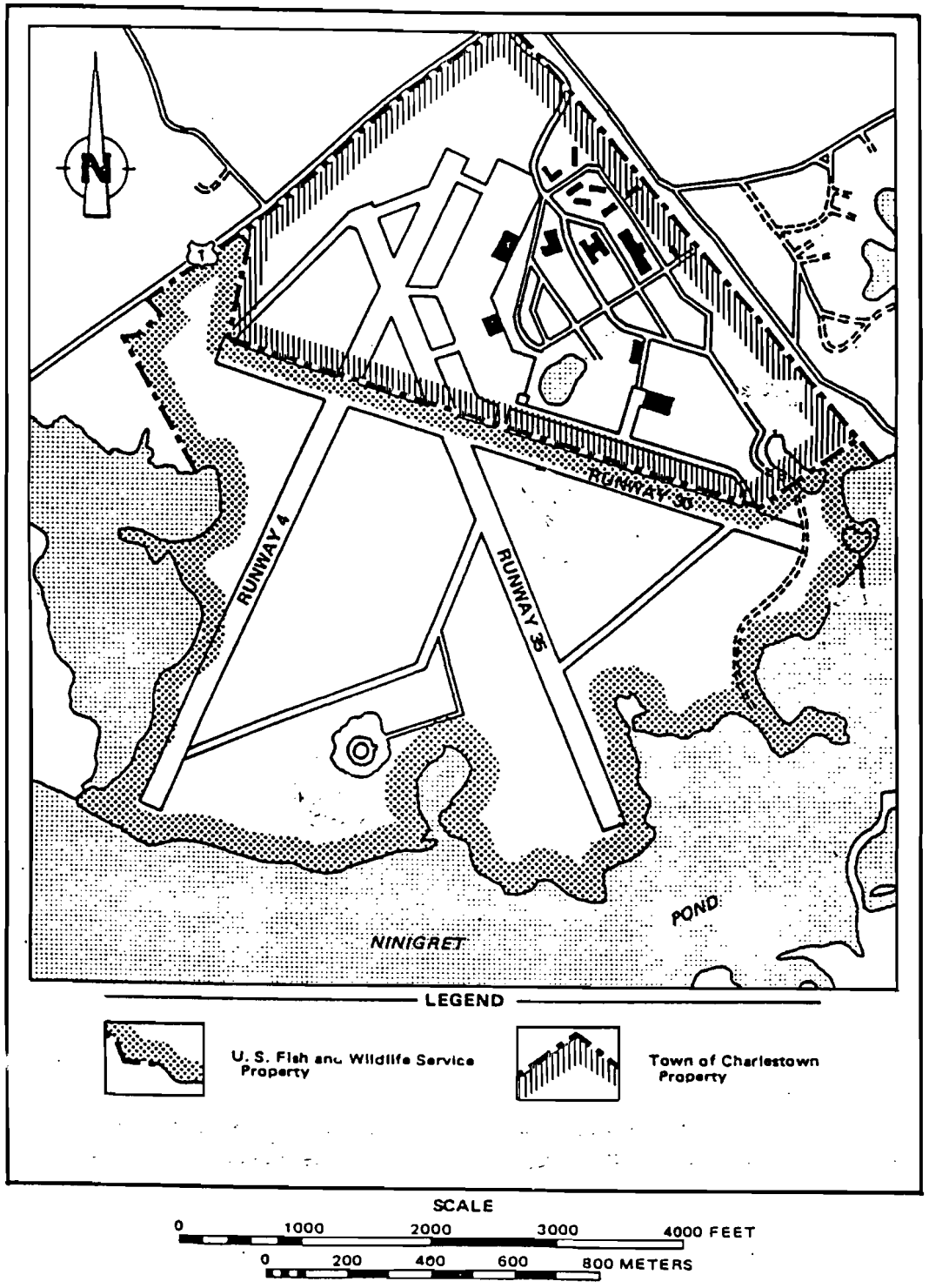
The Federal Agency Hazardous Waste Compliance Docket (Federal Register, 12 February 1988) compiled by the Environmental Protection Agency indicates that a notification of hazardous waste site has been filed for the facility under Section 103(c) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

Former NAS Charlestown, also known as Naval Auxiliary Landing Field Charlestown, was operated by the Navy from the 1940s to 1972 as an annex to Naval Air Station Quonset Point. The Navy declared the facility excess in 1974. The property was then transferred to the General Services Administration for disposal. A portion of the facility was ultimately transferred to the town of Charlestown and is now being developed as a park and community center. The remainder of the property was transferred to the United States Fish and Wildlife Service (USF&WS) and is now part of the Ninigret Wildlife Refuge (Army Corps of Engineers, 1987) Figure 1 shows current property holdings at the facility.

Facilities transferred from one federal agency to another are the responsibility of the current owner (Federal Register, 12 February 1988). The Army Corps of Engineers is responsible for conducting installation restoration studies at formerly owned federal facilities which are now privately owned.

The Army Corps of Engineers is currently conducting an installation restoration study under the Formerly Used-Site Restoration Program on property that is currently controlled by either the Town of Charlestown or the USF&WS. Information regarding the status of the study may be obtained by contacting The Army Corps of Engineers, Huntsville Division. Questions should be directed to:

Commander
U.S. Army Engineer Division, Huntsville
ATTN: CEHND-ED-PM
P.O. Box 1600
Huntsville, Alabama 35807-4301
Telephone: (205) 895-5140



(Army Corps of Engineers, 1987)

FIGURE 1
FACILITY LOCATION

PRELIMINARY ASSESSMENT
FORMER NAVAL AIR STATION
CHARLESTOWN

3. CONCLUSIONS

No further action is recommended under the Navy's Installation Restoration Program because the facility has been transferred to the U.S. Fish and Wildlife Service at Charlestown, Rhode Island. Information regarding the present status of Installation Restoration studies may be obtained by contacting The Army Corps of Engineers, Huntsville Division.

4. AUTHORITY AND SCOPE

Section 211 of the Superfund Amendments and Reauthorization Act of 1986 (SARA 211) provides continued authority for the Department of Defense Environmental Restoration Program (DERP) and the Defense Environmental Restoration Account (DERA). The Navy Installation Restoration (IR) program is authorized by Chief of Naval Operations Instruction (OPNAVINST) 5090.1 of 26 May 1983. The Naval Facilities Engineering Command (NAVFACENGCOM) manages the Navy program. NAVFACENGCOM tasked the Naval Energy and Environmental Support Activity (NEESA) to conduct a preliminary assessment (PA) for each Navy and Marine Corps facility listed on the Federal Agency Hazardous Waste Compliance Docket as required by SARA 120.

PAs are conducted in accordance with Environmental Protection Agency (EPA) draft guidance on "Pre-Remedial Activities at Federal Facilities" forwarded by EPA memorandum of 8 September 1987. PA recommendations are consistent with the National Contingency Plan.

The PA begins with investigation and review of available records at NEESA and the cognizant NAVFACENGCOM Engineering Field Division. If the Navy is responsible for the facility, the PA team visits the activity to complete documentation of past and present operations and disposal practices. With the assistance of the activity contact, the team tours the activity and interviews long term employees. If a potential threat to human health or the environment is suspected, further appropriate action is recommended.

5. REFERENCES

Army Corps of Engineers, 1987, Engineering Report on Contamination Evaluation at The Former Naval Auxiliary Landing Field Charlestown, Rhode Island.

Federal Register, 12 February 1988, Federal Agency Hazardous Waste Compliance Docket: Initial list notice, Volume 53, Number 29.

CHAPTER I

INTRODUCTION

This report presents the results of a Phase Ia archaeological survey and historic architectural evaluation of the former naval auxiliary landing field in Charlestown, Rhode Island (CNALF) (Figure 1-1). The former CNALF project area covers approximately 605 acres, and is bounded on the south by Ninigret Pond, East Beach, and Block Island Sound; to the west by Foster Cove and wetlands; to the north by Routes 1 and 1A; and to the east by Arnolda Drive, which provides access to private residential properties located within the Arnolda Historic District (Figure 1-2). The CNALF facility was operated as an annex to Quonset Point Naval Air Station from 1942 to 1972. In 1974, the CNALF was declared excess property by the U.S. Government and abandoned. It remained unoccupied until the early 1980's. Presently, the facility grounds include a 400 acre U.S. fish and wildlife sanctuary (Ninigret Wildlife Refuge) and a recreational complex operated by the town of Charlestown.

The International Technology (IT) Corporation of Fieldcrest, New Jersey, is currently preparing an environmental evaluation of the former CNALF facility. The environmental evaluation is being performed under the Defense Environmental Restoration Program (DERP). A limited archaeological survey of the property is to be included in the environmental evaluation. The Public Archaeology Laboratory, Inc. (PAL, Inc.) was contracted by IT Corporation to conduct a Phase 1 cultural resources survey on the 605 acre CNALF site in Charlestown, Rhode Island.

This Phase I cultural resources survey was planned to be performed in two parts. The Ia element of the survey is comprised of a documentation study, informant interviews, and a walkover of the study area in order to stratify the project area into varying zones of archaeological sensitivity and to refine testing strategies. The Ib element of the survey will consist of limited subsurface archaeological testing in zones considered to have a high or moderate potential to contain significant cultural resources as identified in the Ia portion of the survey. The objectives of this survey are to identify and evaluate any structures that may be eligible for nomination to the National Register of Historic Places and to locate, identify, and evaluate any significant cultural resources discovered in the project area during subsurface testing.

The Phase Ia archaeological survey and architectural evaluation was conducted in accordance with the Rhode Island Historic Preservation Commission's (RIHPC) Standards for Archaeological Survey, Section 106 of the National Historic Preservation Act of 1966, the National Park Service Guidelines and Standards for Archaeological Survey, the U.S. Fish and Wildlife Coordination Act (16 U.S.C.), and in compliance with the Archaeological Resources Protection Act of 1979, including a permit for collection (Phase IB).

The PAL, Inc. completed background research, informant interviews, the walkover, and all other activities associate with the Phase Ia element of the cultural resources survey for the CNALF project area. Non-collecting fieldwork was conducted in May 1991 under RIHPC Permit No. 91-11 issued by the State Historic Preservation Officer. PAL, Inc. staff involved in the survey were Alan Leveillee (Principal Investigator), Ronald Dalton (Project Archaeologist), Suzanne Glover, Mary Lynne Rainey (Research Associates), and Burr Harrison (Senior Archaeological Technician). All project information (field notes, maps, and project related documents) is currently on file at The Public Archaeology Laboratory, Inc., 387 Lonsdale Avenue, Pawtucket, Rhode Island. This report was word processed by Pat Capece and Joanne Aguiar.

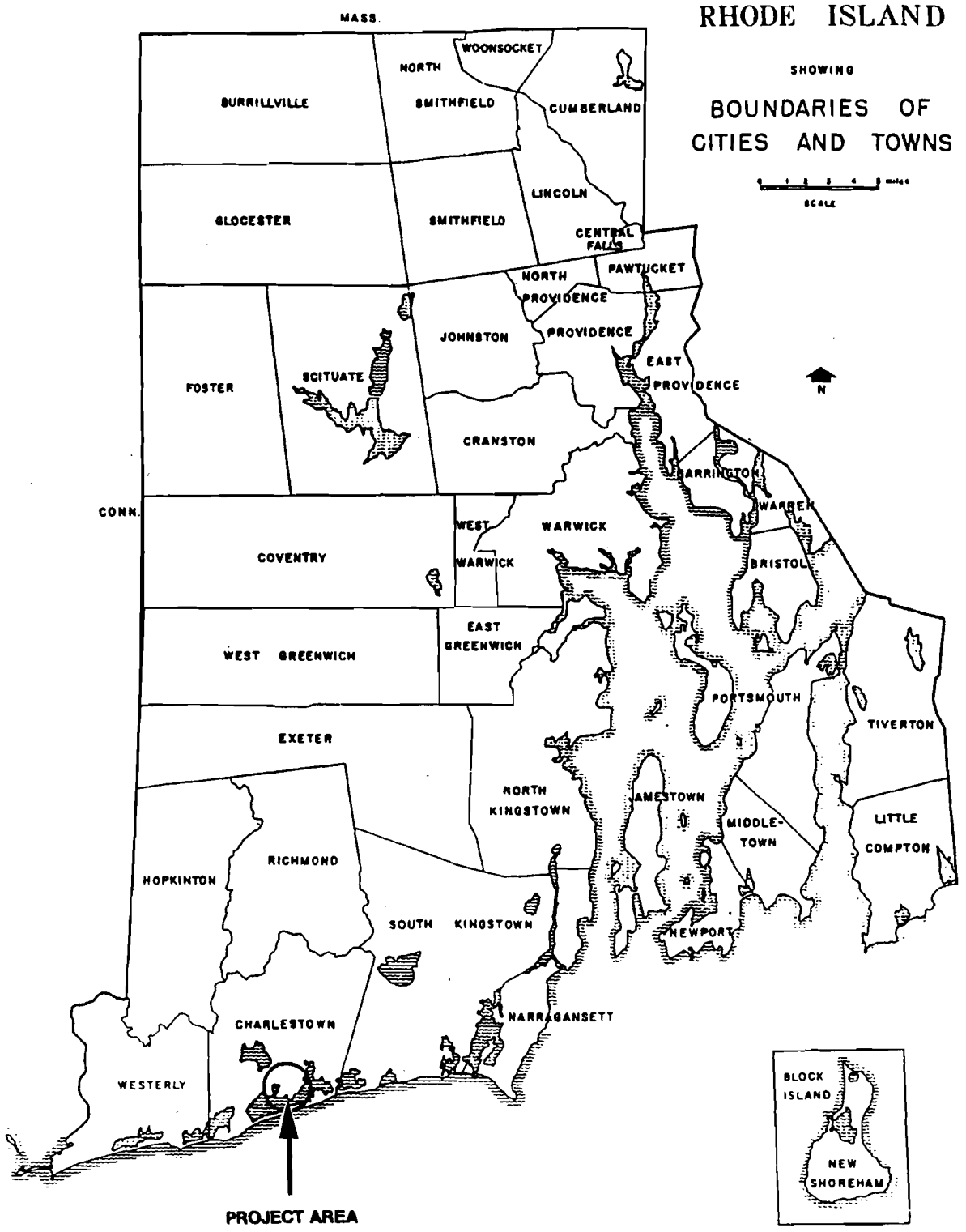


Figure 1-1. Map of Rhode Island with the location of the Charlestown Naval Auxiliary Landing Field (CNALF).

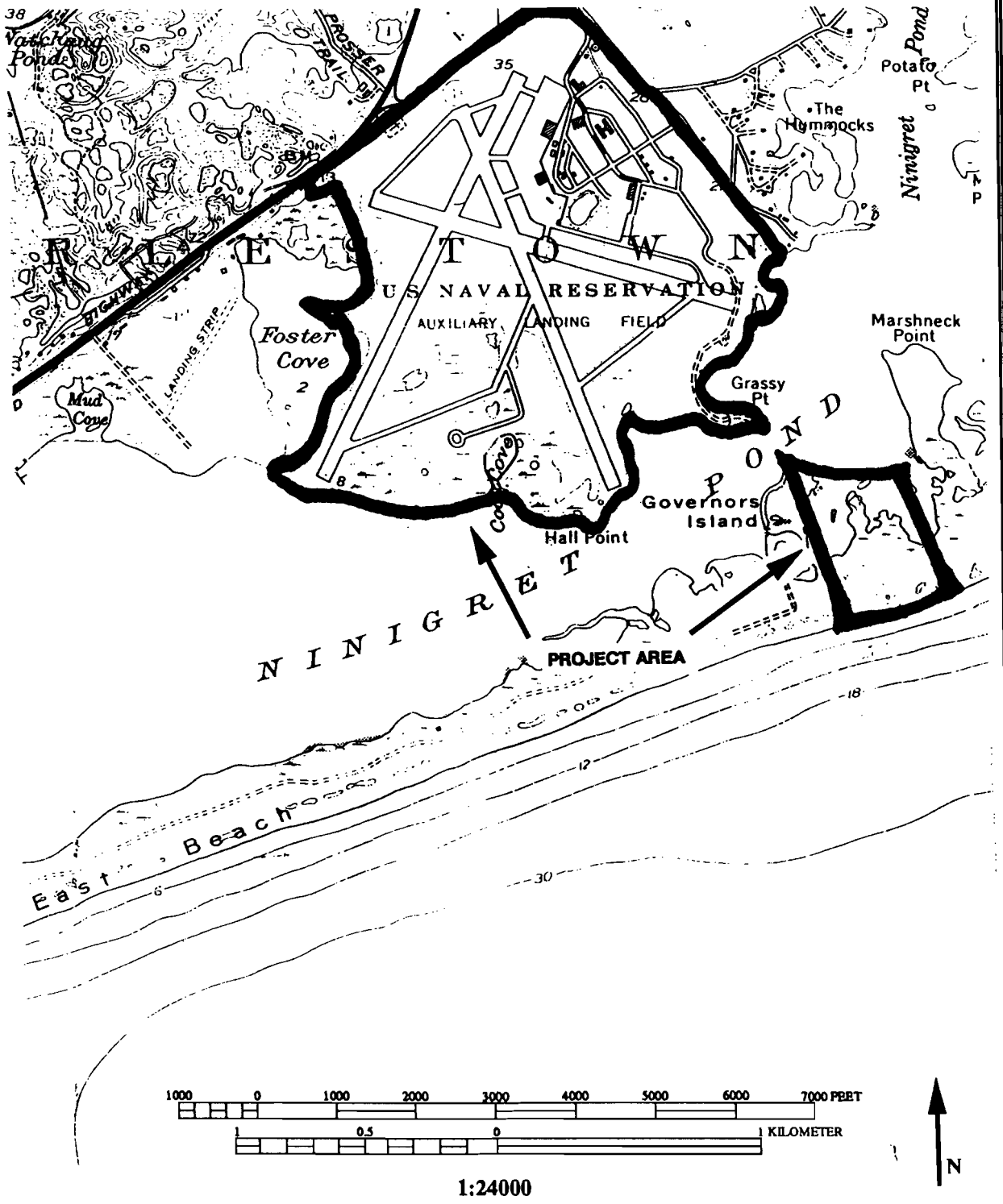


Figure 1-2. Quonochontaug, RI U.S.G.S. quadrangle map (7.5 minute series) with the location of the project area.

CHAPTER II

RESEARCH DESIGN AND STRATEGIES

The goal of a Phase I archaeological reconnaissance survey is to locate and identify areas of archaeological sensitivity and to locate prehistoric and historic cultural resources that exist within a given project area. The IT Corporation has requested that this particular survey be conducted in two parts. This consists of a Phase Ia documentation study and a Phase Ib field survey. To achieve the research goals of the archaeological reconnaissance survey, two research strategies were employed during the CNALF project: 1) background research (Phase Ia); and 2) limited field investigation (Phase Ia). This report section discusses the methods and objectives involved in the Phase Ia element of the survey. The results of Phase Ia project related activities are discussed and evaluated in the following report sections.

Identifying the location and nature of known prehistoric and historic sites in the general project vicinity before fieldwork begins allows investigators to place the project area into a larger anthropological framework. Known site data is utilized in the formulation of pertinent regional and project specific research questions. Information generated as a result of archaeological fieldwork has become part of the site inventory files at the Rhode Island Historical Commission (RIHPC). These files contain maps and descriptions of reported archaeological sites within the state of Rhode Island. Additionally, copies of all reports written as a result of cultural resource management (CRM) surveys are on file at the RIHPC. These reports provide a data base of archaeological work (amateur collections, professional CRM surveys, field schools, grant studies, etc.) conducted in the vicinity of a project area. Also, this information is important in evaluating site types and corresponding environmental variables.

The archaeological sensitivity of the project area was defined as the probability for any prehistoric or historic resources to be present. Three categories were considered in rating the sensitivity of the project area: 1) environmental characteristics; 2) degree of disturbance; and 3) the presence of known cultural resources within or in close proximity to the project area. Each of these larger categories was broken down into measurable attributes. The environmental attributes that were considered in the project specific sensitivity scheme are presented below as they relate to the overall archaeological rankings.

Table 2-1

Environmental Attributes Contributing to Archaeological Sensitivity Rankings

Criteria	High	Moderate	Low
Distance to Water/Wetland	adjacent < 150 m	150 to 300 m	>300 m
Slope	minimal 0 - 3%	moderate 3 -15%	steep > 15%
Soil Types	sandy, well-drained	gravelly, fair drainage	very gravelly, poor drainage

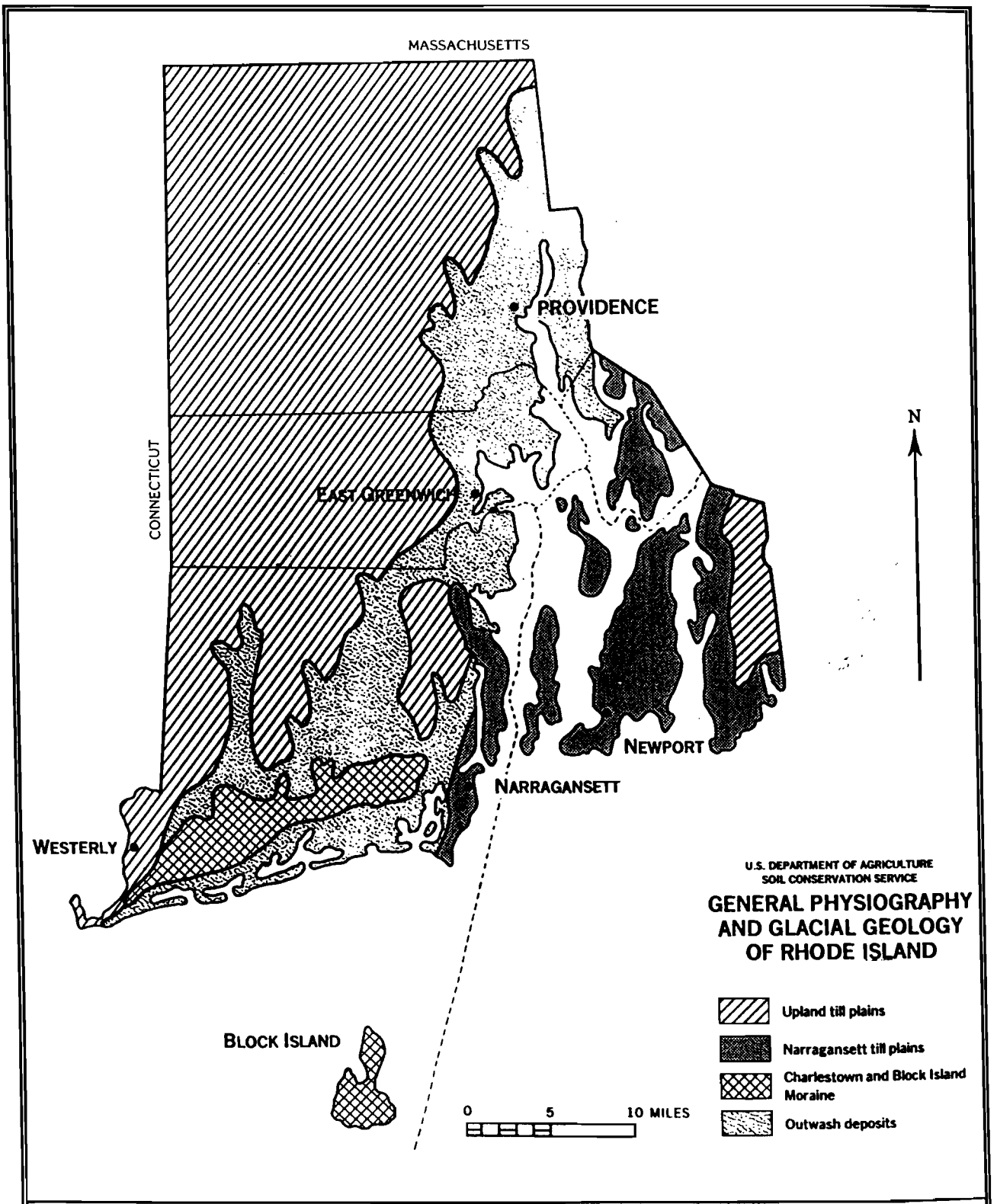


Figure 3-3 Drainage basin map of Rhode Island.

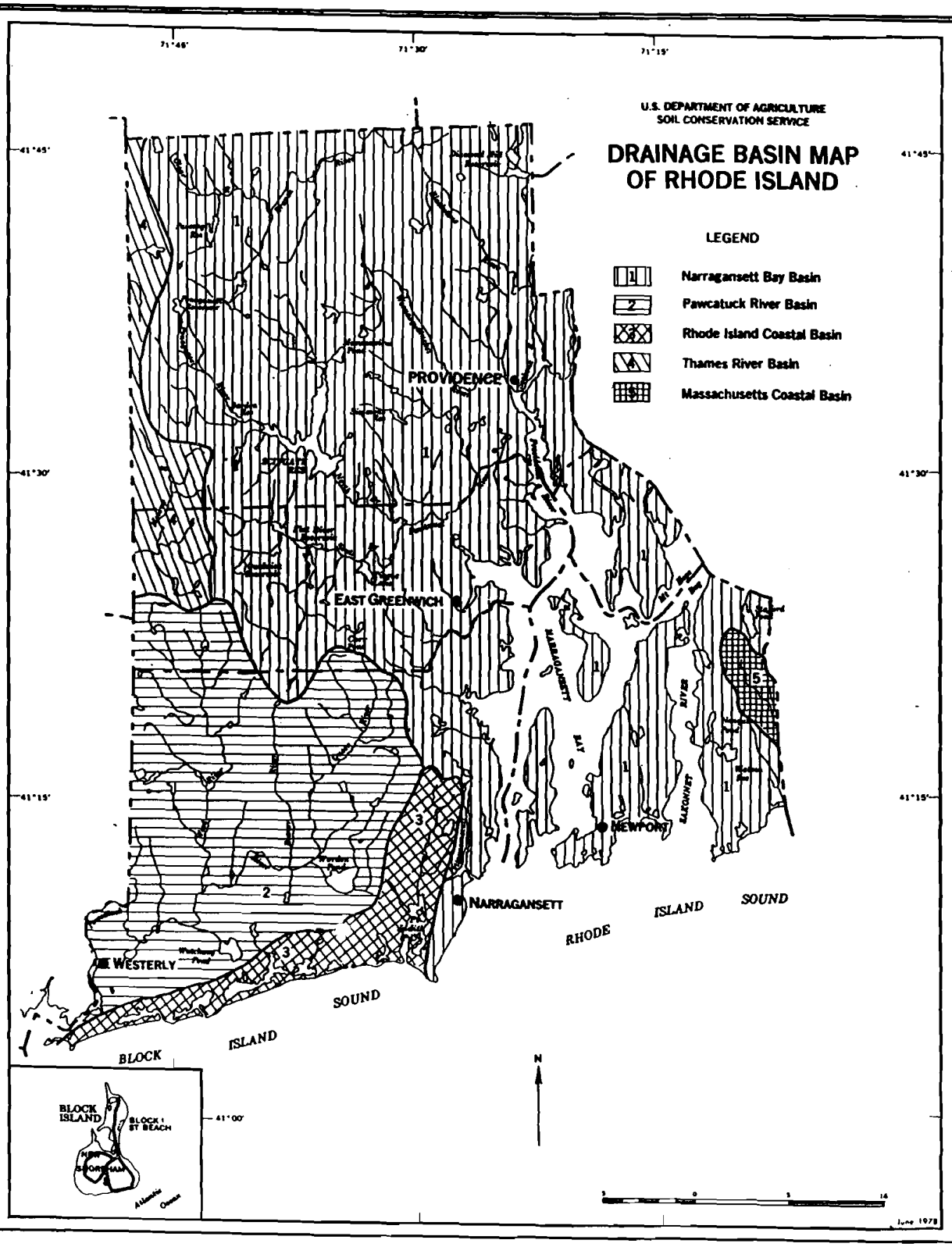


Figure 3-4. General physiography and glacial geology of Rhode Island.

and clay that were deposited in irregular layers by glacial meltwater as the water flowed toward the sea (USDA 1981).

Drainage Patterns

The project area, which lies southwest of the Pawcatuck River drainage basin and south of the Charlestown Moraine, has no natural surficial drainage brooks or streams. However, wetlands and freshwater ponds do exist on the project property and are probably fed, in part, by underground freshwater springs. The Charlestown Moraine acts as a block to drainage channels associated with the Pawcatuck River basin (see Figure 3-3). The southerly trending drainage patterns of the general area are cut short of the Block Island South by the Moraine, and are subsequently forced to flow in a southwesterly direction to empty into the ocean near Westerly (USDA 1981).

Subsurface drainage has, in part, resulted in several freshwater ponds and wetlands that are present within the project area. These freshwater sources, the tidal marsh, and shoreline environments support a wide variety of biotic natural resources.

Soils

A variety of soil types developed over time in the general project vicinity as a result of physical and chemical processes acting upon geological materials. Glacial ice picked up and ground bedrock, which it then transported and redeposited as an unconsolidated mixture of fresh unweathered rock particles of varying sizes. These sediments were subsequently separated and sorted by glacial meltwater, with strong winds redistributing fine particles. When vegetation became established in the area, the chemical processes of weathering increased, and these rock sediments were transformed into soils (USDA 1981).

There are ten different soil series represented within the project area. Soil series are differentiated according to their morphological characteristics such as color, texture, structure, reaction, consistence, and mineral and chemical composition (USDA 1981). Approximately 60% of the 605 acre project area's soils have been disturbed by the construction of the CNALF and recent development. The predominant undisturbed soil series found within the project area is grouped as Bridgehampton silt loam which is formed on nearly level outwash plains and terraces (Table 3-1).

Other soil series found in the study area include beaches, tidal marshes, muck soils and silt loams associated with outwash plains (Table 3-1). Distribution of soil series across the project area is demonstrated in Figure 3-5.

These predominant soil types, prior to disturbance, contained the capacity to support agricultural activities along with woodland, openland, marine, and wetland wildlife habitats. The seasonal and year-round exploitation and utilization of natural resources available in the general project vicinity by human populations is discussed in following report sections concerning prehistoric and historic land use and settlement patterns.

Salt Ponds

The irregular shoreline of southwestern Rhode Island's coastal plain is characterized by a series of salt ponds. Technically referred to as coastal lagoons, they are remnants of outwash valleys created

Table 3-1. Distribution of Soil Types within the CNALF Project Area.

Soil Symbol	Soil Type	Location	Slopes	Drainage	Water Capacity	Acidity
Ba	Beaches	nearly level to gently sloping areas along shore of ocean	0 to 8%			
BhA	Bridgehampton silt loam	nearly level outwash plains and terraces	0 to 3%	well to moderately drained	high	strong to medium
BhB	Bridgehampton silt loam	nearly level outwash plains and terraces	3 to 8%	well to moderately drained	high	strong to medium
Co	Carlisle Muck	outwash plains and glacial upland till plains	< 2%	poorly drained	high	medium to neutral
HkC	Hinckley gravelly sandy loam, rolling	terraces, outwash plains, kames, and eskers	3 to 15%	excessively drained	low	medium to extreme
Mk	Matunuk mucky peat	tidal marshes or salt marshes	< 1%	poorly drained	low	strong to neutral
NbB	Narragansett very strong silt loam	crests and side slopes of glacial till uplands	0 to 8%	well drained	moderate	strong to medium
Tb	Tisbury silt loam	terraces and outwash plains	0 to 3%, usually < 2%	well drained	moderate	very strong to medium
UD	Udorthents - Urban Land Complex	disturbed by outting or filling and areas covered by building and pavement		moderately to excessively well drained		
Ur	Urban Land	consists mostly of sites for buildings, paved roads, and parking lots; intensely built up areas	0 to 10%, usually 0 to 5%	moderately to excessively well drained		

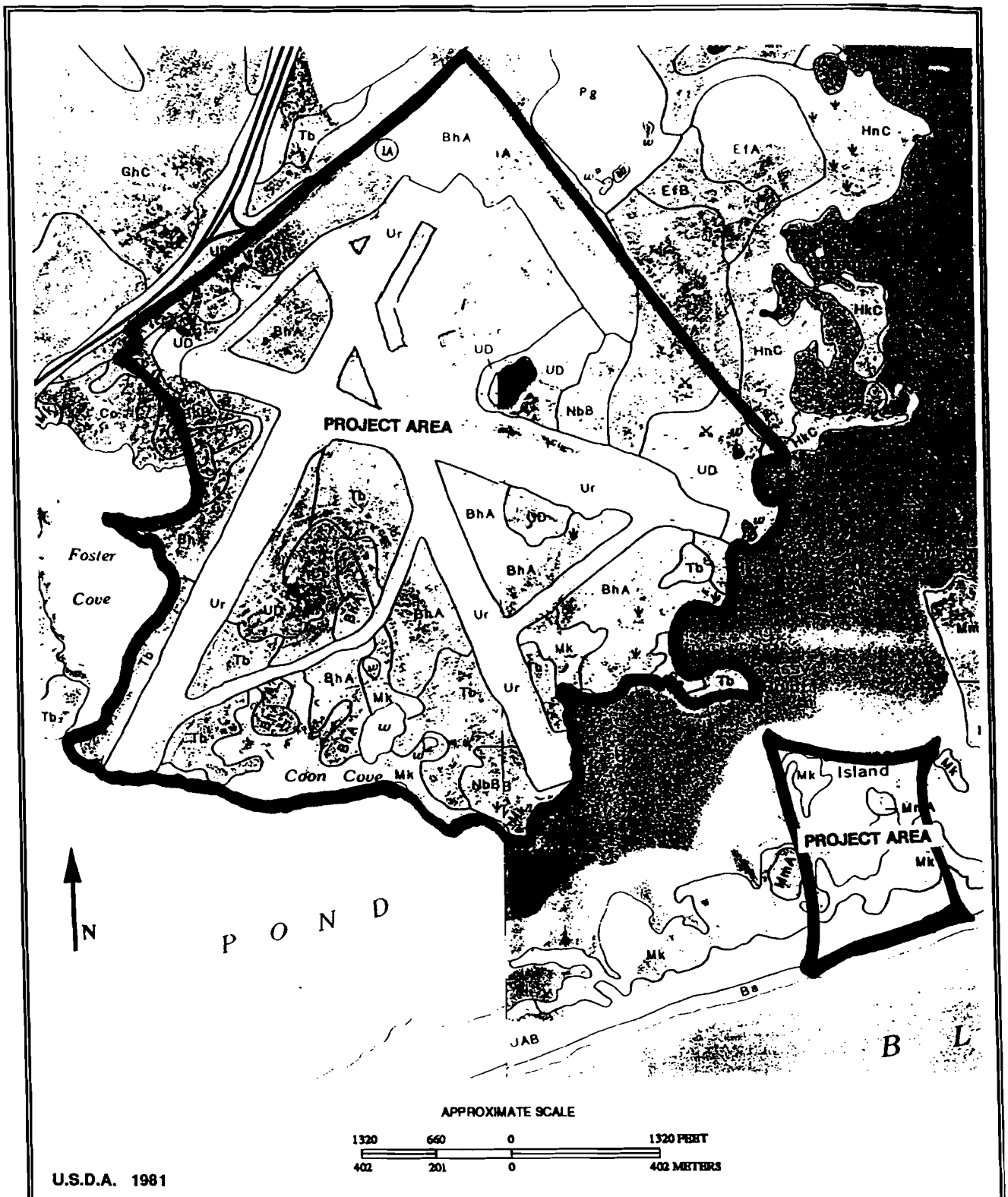


Figure 3-5 Distribution of soil types in the project area.

during the Wisconsin glacial retreat. Barrier beaches have formed between Block Island Sound and the salt ponds through a gradual buildup of sand. A small portion of the project area is situated on a barrier beach (north section of East Beach) and on Governor's Island in Ninigret (Charlestown) salt Pond. Tidal inlets (breachways) and temporary storm-surge channels allow the ocean water, sediments, and migratory organisms to enter the pond, replenishing nutrients and preventing stagnation (Stolgitis 1976). Waschaug and Little Maschaug ponds are the westernmost and smallest of Rhode Island's coastal lagoons. Continuing northeasterly along Block Island Sound are Winnapaug Pond, Quonochontaug, Ninigret Pond, Green Hill Pond, Trustom Pond, Cards Pond, Potter Pond, and Point Judith Pond (see Figure 3-2).

Project Area Condition

Prior to CNALF construction, the project area was primarily used as agricultural lands. In the seventeenth century, the project property was part of land settled by Christopher Champlin and became one of south county's large plantations. Charlestown's south strip, including the project lands, was under cultivation when Charlestown separated from Westerly in 1738. Farming continued on the historic Champlin Farm well into the twentieth century. During this time the farm house, barns, associated outbuildings, and farm roads were established on the property (Figure 3-6).

The Civilian Conservation Corps (C.C.C.), established by congress in 1933, was active in Charlestown. Their work on the project property included cutting forest fire trails, and the thinning of forest land. By 1942, the C.C.C. was deactivated, and the U.S. government acquired the project property and began construction of the CNALF complex.

Construction activities for the CNALF disturbed and developed over sixty percent of the 605 acres. In addition to the miles of runways, taxiways, and roads, base residences, hangers, a control tower, ammunition bunkers, an energy plant, fuel storage areas, and various utility trenches were also constructed on the property (Figure 3-7).

Activities on the project property after the CNALF was declared excess property in 1974 included three landfill sites, two gravel pits, a burn pit, and a sewer outfall. Additional plans to convert the area into a nuclear-powered electric-generating plant complex were abandoned in 1980.

Recent improvements to the project property include the Charlestown Recreation Complex and the Ninigret Wildlife Refuge. After the demolition of most of the CNALF facilities, several components of the recreation complex were established. In addition to the gate house and senior citizen center, the Frosty Drew Nature Center, the Observatory, the beach, playground and pavilion at Little Nini Pond, the bicycle racetrack and BMX course, nature trails, fitness trails, ball fields, plus the tennis and basketball courts comprise the Charlestown Recreational Complex.

The Ninigret Wildlife Refuge comprises the remaining area of the former CNALF. The Wildlife Refuge also has several components, these include a parking area, picnic areas with interpretive signs indicating marked nature trails and particular wildlife habitats, an observation tower, and access roads for wildlife management.

CHAPTER VI

SURVEY RESULTS

Walkover - Surface Inspection

The fieldwork aspect of the Phase Ia survey consisted of a walkover and surface inspection of the entire 605 acre project area. The walkover and surface inspection included areas where prehistoric cultural materials were previously recovered as well as areas where prehistoric materials would most likely be present. Undisturbed, nearly level, well-drained areas within 150 to 300 meters of fresh water or wetlands or areas that were suitable for the exploitation of marine resources were assigned high or moderate archaeological sensitivity. All other types of physical settings were considered to have low potential for containing prehistoric deposits due to poorly drained soils, steep topography, distance greater than 300 meters from fresh water, paved surfaces, recently developed areas, or where moderate to severe ground disturbances are obvious. The project area was then separated into zones of archaeological sensitivity (Figure 6-1).

Both historic archaeological resource potential and preliminary historic architectural assessments of standing structures were addressed during the walkover. Historic archaeological resource potential was assigned according to the same variables applied to prehistoric potential; the exception, and additional research aid, being information provided in town histories, maps, and historic properties' surveys. These types of data will enable a refinement of testing strategies that will be employed during the Phase Ib fieldwork aspect of this project.

Previous archaeological investigations (RIHPC 1974) on the project parcel identified evidence of prehistoric activity at five locations, including an important archaeological site (RI-16). The location of these prehistoric activity loci are shown on Figure 6-1. Area "A" is the National Register Foster Cove archaeological site (RI-16) which was discussed in a preceding report section. Area "B", situated near the southeast corner of the project property, yielded large quantities of oyster shell, quartz chipping debris (possibly modified for stone tool use), and what was identified as either chert or chalcedony stone tool fragments. Quartz chipping debris and what was identified as either chert or chalcedony chipping debris, was recovered from Area "C" at the southern edge of the project area. Test trenches excavated near the fresh water ponds in the central portion of the CNALF, Area "D" yielded quartz chipping debris. Area "E", located near the southeastern shore of the fresh water pond (Nini Pond), also yielded quartz chipping debris (RIHPC 1974) (see Figure 6-1).

Additional cultural resources may exist in small undisturbed areas scattered across the project property. These areas can be found where CNALF and later recreational development have not occurred. The area in the vicinity of historic cemetery No. 21 may have potential to contain historic cultural resources. Some of the stones in the historic stone walls that are extant near the cemetery have obvious evidence of earlier attempts at quarrying or splitting. During the walkover and surface inspection, approximately ten stones were observed in the walls with "plug and feather" method quarry holes, some were completely split, and some left in place unfinished. The area in the vicinity of "Grassy Point" may contain pockets of undisturbed soils. Small pockets of undisturbed soils may also exist along the eastern boundary of the project area and the neighboring Arnolda Historic District.

Informant consultation was productive in locating and examining local prehistoric artifact collections. Two such collections were examined and photographed, one private and one on display on the project property. The private collection is owned by Mr. and Mrs. George Bliven and was collected from their property which is located in the historic district of Arnolda. This collection was discussed in a previous report section. Additional private collections are known to exist elsewhere in the Arnolda Historic District. These additional private collections were not located or examined. The prehistoric artifact collection on display within the Charlestown Recreation Complex is located at the

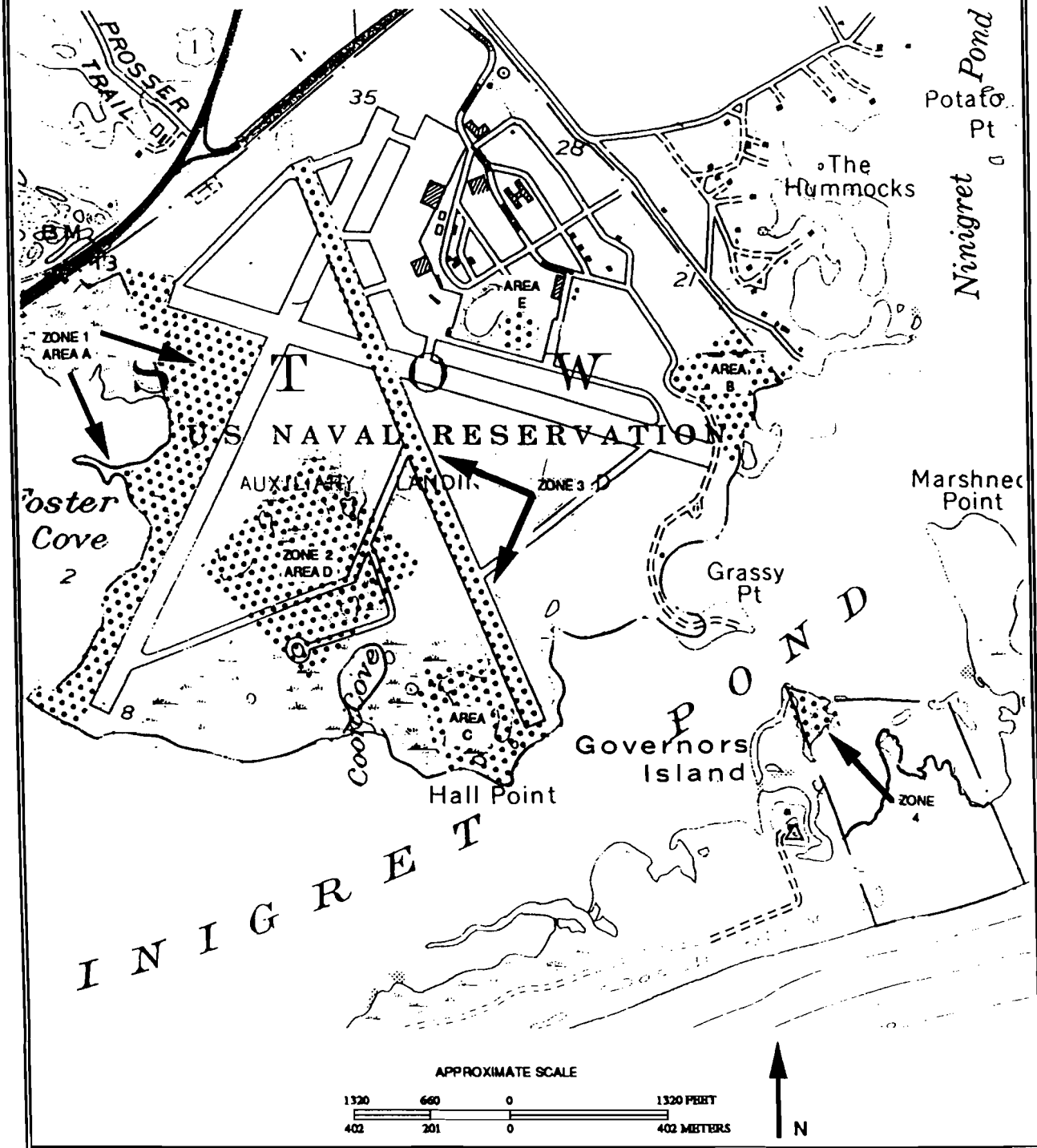


Figure 6-1. Archaeological sensitivity zones and previously discovered site areas within the CNALF project area.

CENED-RE-AM

~~13~~ 18 May 1993

MEMORANDUM FOR Director of Engineering (ATTN: Mr. Riccio)

SUBJECT: DERP-FUDS, Site No. D0RI0008, Former Naval Auxiliary Landing Field, Charlestown, Rhode Island, Request for DD Form 1391, Cost Estimate for BD/DR project

1. The site visit report for the Former Naval Auxiliary Landing Field, Charlestown, Rhode Island, dated August 1992, did not include a cost estimate.

2. Request a DD Form 1391, Cost Estimate, for a BD/DR project involving the demolition and removal of three buildings on the above subject site be prepared and forwarded to this Directorate as soon as possible. In a letter from Mr. George Bliven, Jr., dated 27 January 1993, he states that Senator John Chafee's office had been contacted concerning the urgency of the town's request for this BD/DR project.

3. Enclosed is a copy of the site visit report and portions of the draft INPR.

4. For questions contact Ms. Karen Schofield at X7603.

FREDERICK W. COLMAN
Director of Real Estate

CF:
Proj Mgt (Mr. Holtham)
RE Dir File
Ms. Schofield

KE

FORMER NAVAL AUXILIARY LANDING FIELD

CHARLESTOWN, RHODE ISLAND

DERP PROJECT NO. D01RI0008

AUGUST 1992

FORMER NAVAL AUXILIARY LANDING FIELD
CHARLESTOWN, RHODE ISLAND

DERP PROJECT NO. D01RI0008

NARRATIVE

The former Naval Auxiliary Landing Field located in Charlestown, Rhode Island was originally investigated under DERP-FUDS in September 1984. Recommendations contained within the INPR from the initial investigation resulted in the removal and disposal of underground storage tanks and fuel pipelines and the demolition of various buildings, foundations and structures located throughout the site. The work was performed under Contract No. DACA33-86-C-0041 entitled "Demolition of Structures and Tanks, Former U.S. Navy Auxiliary Landing Field, Charlestown, Rhode" by MacDonald and Watson Waste Oil Co., Inc. of North Scituate, Rhode Island.

This report is written as a supplement to the initial INPR as the result of a request by the Town to consider the demolition of additional structures not included within the scope of the original project.

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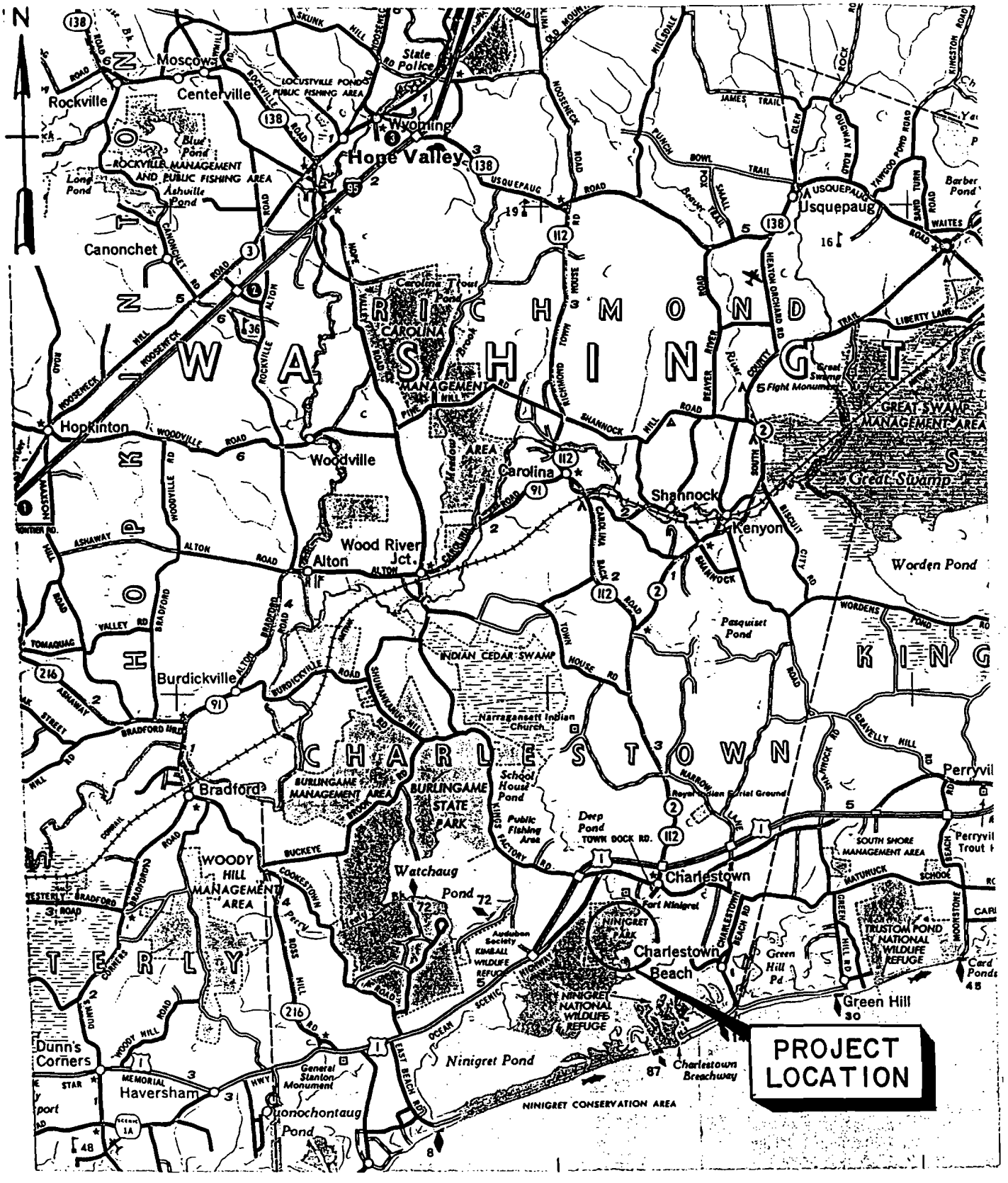
The former Naval Auxiliary Landing Field is located off Route 1A on the south shore of Charlestown, Rhode Island. The site can be reached taking Route 1A off Route 1 and following the signs to Ninigret Park. The former Naval Auxiliary Landing Field is now Ninigret Park and the Ninigret National Wildlife Refuge. Location and Vicinity Maps of the site are attached to this report as Plates Nos. 1 & 2, respectively.

The United States acquired 631.3 acres between 1940 and 1942 for the construction of the Naval Auxiliary Landing Field. The station was utilized as a training facility for Navy pilots and flight crews during World War II. The facility was closed in 1970 and reported as excess to General Services Administration in 1974. Approximately 172.4 acres of land were conveyed to the Town of Charlestown by deed dated 22 May 1981. The deed required that the land be utilized for public park and recreational uses and contained a recapture clause. This area is presently named Ninigret Park and is actively utilized by the town and surrounding communities as a recreational area. In addition, 55 acres were conveyed to the town by deed dated 18 June 1982 with no restrictions, recapture clause or restoration provisions. This area is located

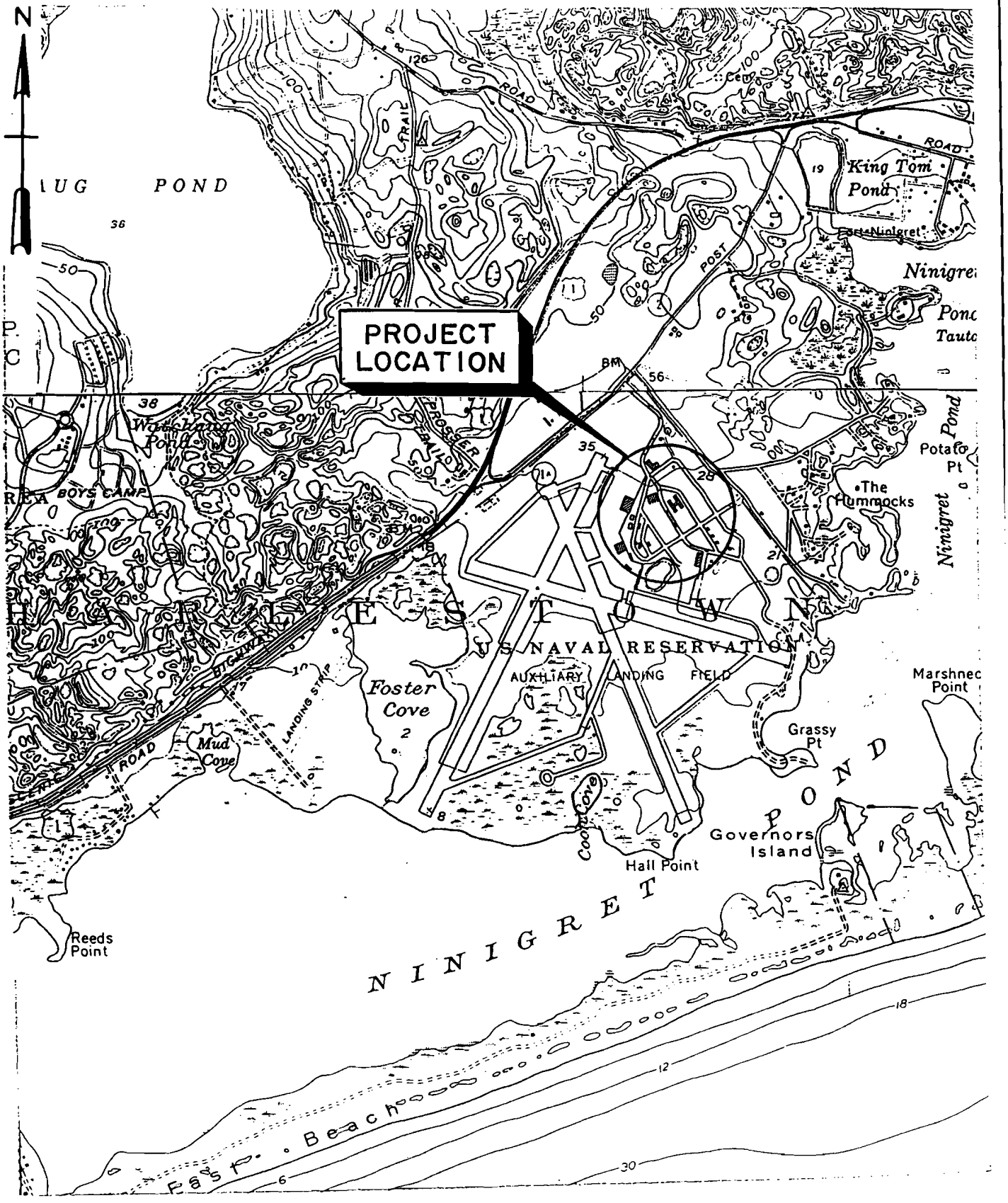


DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION
CORPS OF ENGINEERS
WALTHAM, MASS.

DEFENSE ENVIRONMENTAL RESTORATION PROGRAM
CHARLESTOWN, RHODE ISLAND
NAVAL AUXILIARY LANDING FIELD

E-11 LOCATION MAP

1/8



DEPARTMENT OF THE ARMY NEW ENGLAND DIVISION CORPS OF ENGINEERS WALTHAM, MASS.	DEFENSE ENVIRONMENTAL RESTORATION PROGRAM CHARLESTOWN, RHODE ISLAND NAVAL AUXILIARY LANDING FIELD **E-11** VICINITY MAP	2/8

adjacent to the recreational area and is utilized by the Town for municipal purposes.

The remaining 403.9 acres of the site were transferred from GSA to the Department of Interior, Fish and Wildlife Service in three separate transactions; the first by letter dated 21 March 1971 (27.5 acres), the second by letter dated 29 November 1979 (316.4 acres) and the third by letter dated 2 April 1982 (60 acres).

*****

Information regarding the history of the site was obtained during a site visit on May 28, 1992 with Mr. Duncan Creaser and Mr. Raymond Goff from the U.S. Army Corps of Engineers, New England Division (413-593-6791) and Mr. George Bliven, Park Commissioner for Ninigret Park (80 Arnold Road, Charlestown, Rhode Island 02813 tel: 401-364-6244) and Mr. Alan Arsenault, Director of Public Works for the town. Mr. Bliven was also the point of contact during the initial site visit conducted in 1984.

During the site visit Mr. Bliven, as spokesman for the Town of ~~Coventry~~ Charlestown, requested four structures be inspected and considered for demolition as a BD/DR project under DERP. The structures consist of a former supply warehouse, two former boiler houses and the remains of a former aircraft hangar. The location of these structures can be seen in the site plan on Plate No. 3 of this report. The plan is taken from a drawing entitled "Map of Naval Auxiliary Air Station, Charlestown, R.I. Showing Conditions on June 30, 1948". Many of the structures shown on the plan have since been demolished. All the remaining structures are located on property owned by the Town of Charlestown.

Mr. Bliven stated that all the buildings were structurally sound and well maintained while the site was an active Navy facility. He claims that since 1970 when the facility was closed and during that time period when the facility belonged to GSA that there was not one structure on site that was not vandalized and in need of repair.

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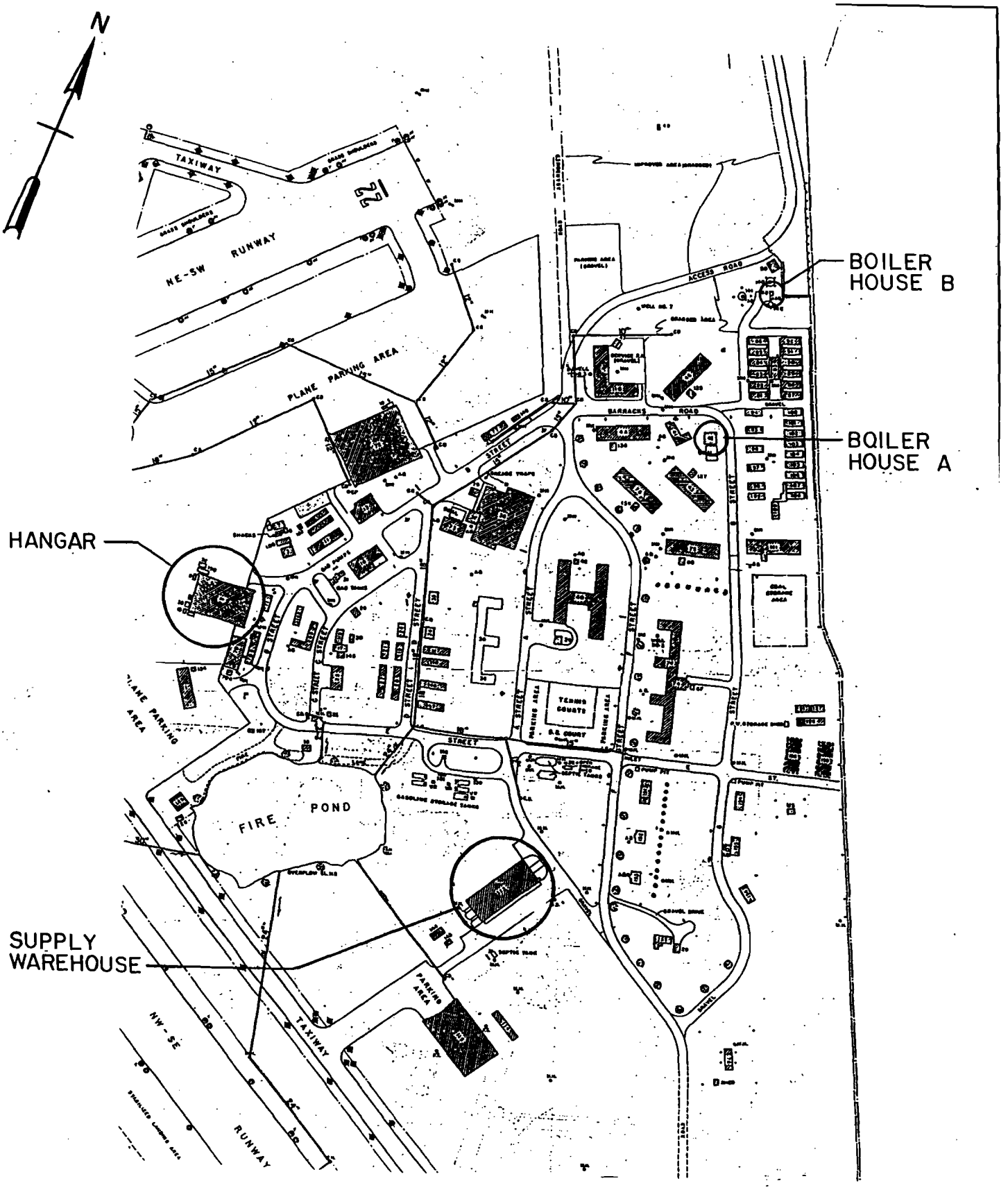
The former supply warehouse is a one story structure approximately 200 feet by 75 feet in area (see Photos Nos. 1 & 2) . The building consists of cinderblock walls with a concrete floor slab and a flat roof. The foundation extends five feet above existing grade and the cinderblock walls are approximately fifteen



SCALE: 1" = 400'

DEPARTMENT OF THE ARMY NEW ENGLAND DIVISION CORPS OF ENGINEERS WALTHAM, MASS.	DEFENSE ENVIRONMENTAL RESTORATION PROGRAM CHARLESTOWN, RHODE ISLAND NAVAL AUXILIARY LANDING FIELD GENERAL PLAN (CIRCA 1948)	3/8

feet high. The roofing system has failed and is in immediate need of repair. The are many large visible holes in the roof which the town has attempted to repair on a number of occasions. The roof structure is wood consisting of roof joists running the width of the building (five sections) between four girders running the length of the building. The girders are supported by wood posts (6 ft x 6 ft) located approximately twenty feet on center throughout the building. The roof deck is plywood. A cinderblock firewall bisects the interior of the building. Asbestos pipe insulation, much of which has fallen to the floor, covered(s) overhead heating pipes. The exterior and interior cinderblock walls are generally in good condition with relatively minor cracks at a few isolated locations.

Aside from the roof and damage that has occurred as the result of a failed roofing system, the building is in relatively good condition and appears to be structurally sound. Mr. Bliven stated that at one point the town was considering utilizing this building to house the Public Works Department. This idea was later scrapped due to the numerous posts located within the building. The building has been utilized by the town as a general storage area.

Photos Nos. 3 & 4, which were provided by Mr. Bliven, depict the building at approximately the time (circa 1981) when the building was turned over to the town. The building appears to be in sound condition. From a structural standpoint little seems to have changed between the time the photographs were taken and the condition of the building as it stands today. The building was not addressed in the Findings of Fact report, included as Attachment A to this report, which was written after the initial site visit conducted in 1984.

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The oil fired boiler house, identified as Boiler House A in Photos Nos. 5 & 6, is a concrete block wall structure with a slightly pitched roof approximately thirty six feet by thirty four feet in area. The building stands approximately twelve feet high. Two boilers which were located in the building were removed by the town. Two girders run to pilasters at the block walls which are supported at the center by steel posts. The interior floor is concrete and the ceiling appears to be covered with an asbestos board type material. The facia board at one section of the building exterior has deteriorated exposing rafter tails that are also deteriorated. The roof does not appear to be structurally sound. The concrete block wall is in relatively good condition with minor cracks located in isolated areas. The condition of this structure is similar to the supply warehouse. While the building appears structurally sound, the roof is in need of immediate repair.

The oil fired boiler house was addressed in the Findings of Fact report referenced above. The report states in part that "At the other site, known as the "oil fired boiler house", the structure remains and the town wishes to retain it ..." (see Attachment A, page 3).

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The "water tank" boiler house, referred to as Boiler House B in Photos Nos. 7 & 8, is a concrete block structure with a flat roof approximately thirteen feet by fifteen feet in area . The building stands approximately ten feet in height. A three foot by three foot brick chimney, thirty five feet in height, is attached to the building. This building is similar in construction to Boiler House A with an interior concrete floor slab and asbestos board type ceiling. The blockwork is in relatively good condition. An attempt has been made to repair one continuous crack in the blockwork at one corner (see Photo 7) of the building but otherwise the structure appears to be sound. Again as with the previous structures, the roof is in immediate need of repair. Wooden joists have deteriorated at one corner of the building where the facia board has deteriorated. As with the two previous structures discussed above, the building appears structurally sound with the exception of the roof.

The Findings of Fact report previously referenced discusses a "dilapidated brick" boiler building located near the site of the water tower which must be demolished and removed (see Attachment A, page 3). As previously stated, Boiler House B is constructed with concrete block and is in a relatively sound condition. It is not known whether Boiler House B is the building being referred to in the Findings of Fact report.

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The last structure to be inspected consisted of a former aircraft hangar foundation (see Photos Nos. 9 & 10). All that remains of the hangar are the foundation walls for the hangar structure, support facilities and door pockets, and the concrete floor slab. The hangar structure, which was dismantled by the town, was constructed of wood. The foundation walls are four feet in height and are approximately one hundred and ten feet in length and twenty feet wide, located at each side of the former hangar. The town used the hangar floor slab as a basketball court and also as area for skateboarding. The town discontinued using the hangar area for these purposes due to the fact that the joint sealant, which projects above the concrete slab at each panel, presents a tripping hazard.

The "old wooden hangar" foundation is identified in the Finding of Facts as an area Mr. Bliven originally requested be "cleared, filled, graded and seeded".

*****

In summary, the former supply warehouse and two boiler house buildings appear structurally sound. The roofs at these structures have failed, however, and are in need of immediate repair. Apparently the town intended to utilize the former supply warehouse and at least one boiler house building (Boiler House A) and did not wish these structures to be considered within the scope of the original demolition project. The town no longer plans to use these buildings and would like to see them demolished. It is unclear whether this was the case for the second boiler house building (Boiler House B). It is doubtful that any of these structures would have been eligible for demolition considering the condition of these structures as they stand today.

The former hangar was dismantled by a local contractor and the trusses were reused for the construction of a private residence. The foundation walls that remain are four feet in height and are not eligible for demolition under this program.

Based upon this field investigation and the present condition of the former supply warehouse and two boiler house buildings, it is recommended that no further action (NOFA) be taken at this site.

SUMMARY

DOD USE: The former Naval Auxiliary Landing Field in Charletown, Rhode Island was formerly owned by the Department of Defense.

Category of Hazards: The former hangar foundation is not eligible for BD/DR under this program. Based on the present condition of the former supply warehouse and two boiler house buildings, it is recommended that no further action (NOFA) be taken at this site.

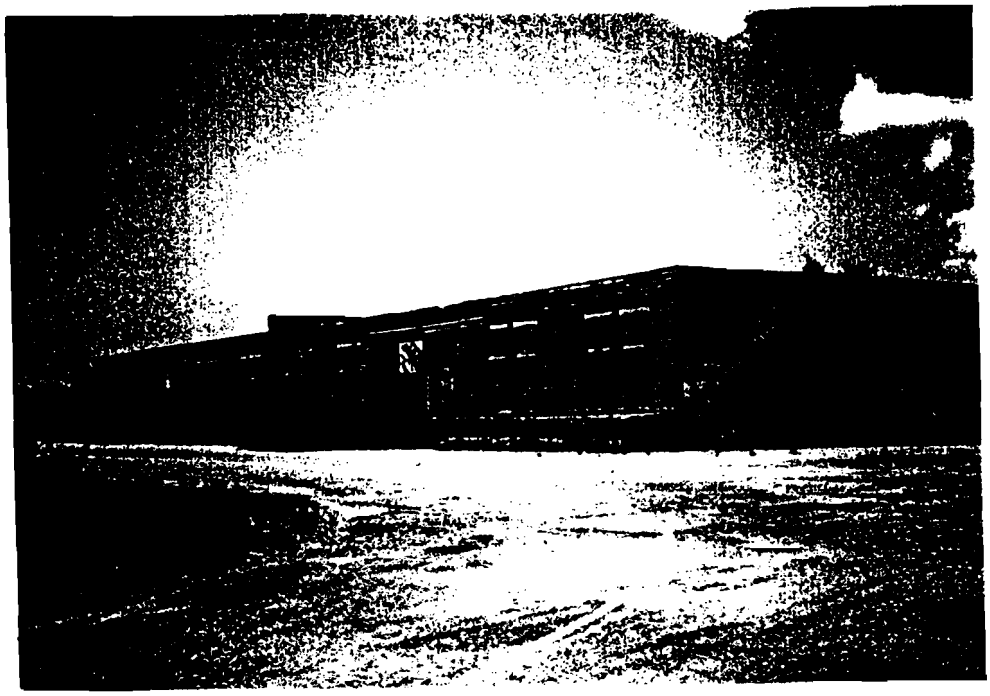

PHOTO 1: WAREHOUSE

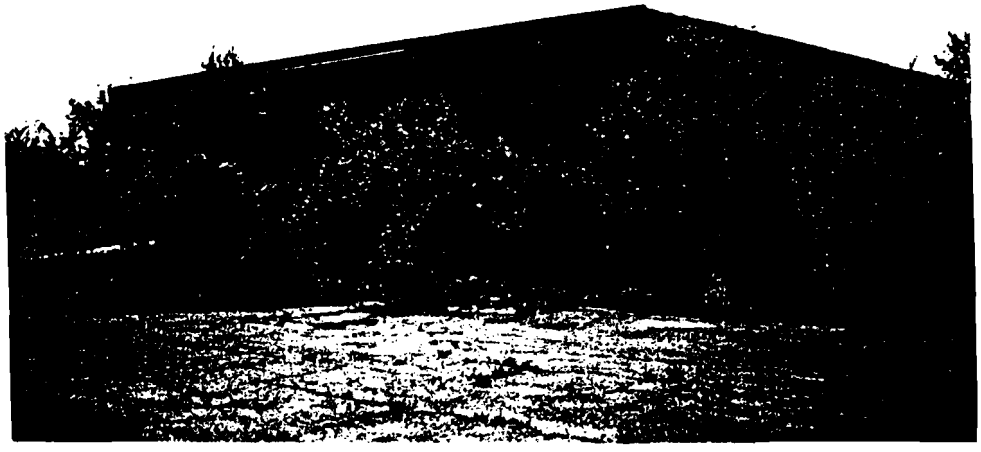

PHOTO 2: WAREHOUSE

PHOTO 3: WAREHOUSE (CIRCA 1981)

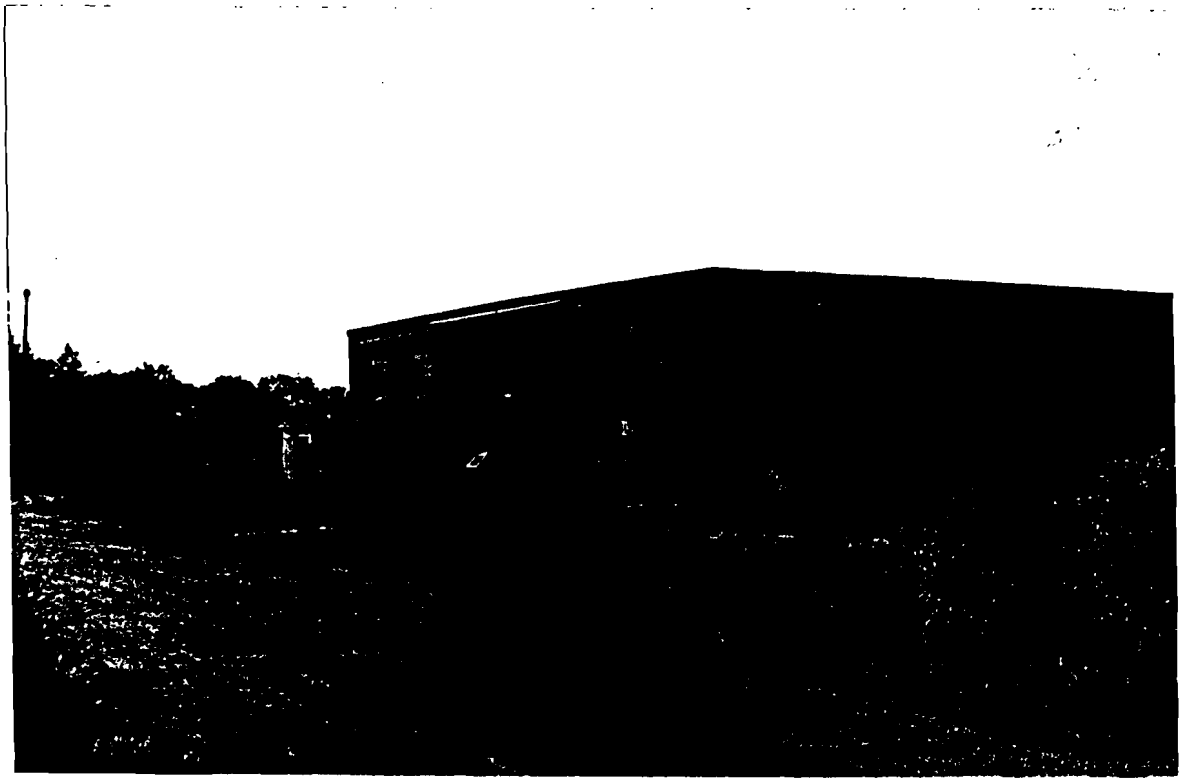

PHOTO 4: WAREHOUSE (CIRCA 1981)

DEPARTMENT OF THE ARMY NEW ENGLAND DIVISION CORPS OF ENGINEERS WALTHAM, MASS.	DEFENSE ENVIRONMENTAL RESTORATION PROGRAM CHARLESTOWN, RHODE ISLAND NAVAL AUXILIARY LANDING FIELD LOCATION MAP	

PHOTO 7: BOILER HOUSE B

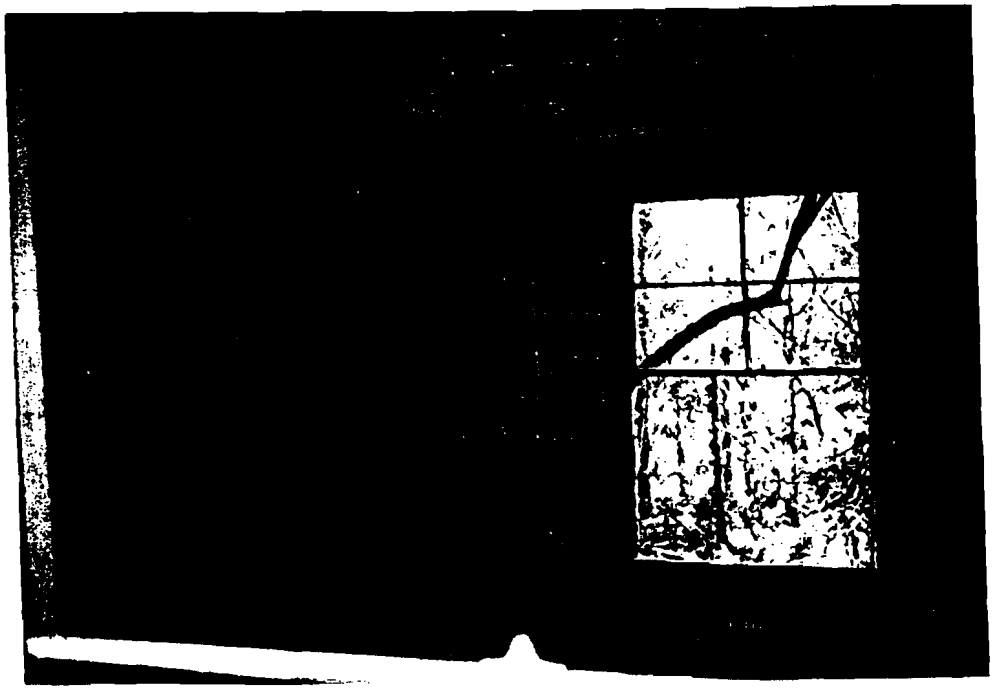

PHOTO 8: BOILER HOUSE B INTERIOR

PHOTO 9: HANGAR FOUNDATION

PHOTO 10: HANGAR FOUNDATION

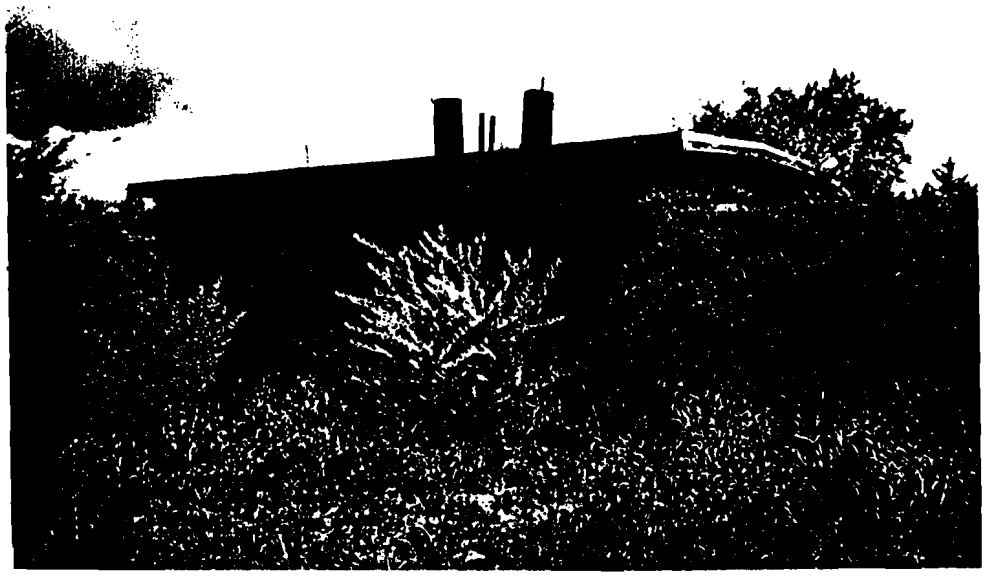

PHOTO 5: BOILER HOUSE A

PHOTO 6: BOILER HOUSE A

Site: FORMER NAVAL AUXILIARY LANDING FIELD Date: 5/28/92

Part II--Condition of the Property

1. How is the site currently used is the owner using it for a particular function is it vacant?
   NINIGRET PARK AS A RECREATIONAL AREA AND MUNICIPAL USES.

2. What is the natural state of the site; bare, grass, tree covered, sand, beach, etc.?
   PARK AREA, TREES, GRASS, ETC.

3. Where is the property located--is it a rural area, a residential area, a commercial area?
   SEMI RURAL AREA

4. What highways is the property near what is its street address?
   THE SITE IS LOCATED OFF ROUTE 1 IN CHARLESTOWN

5. Is the property open to the public how many people visit the area is it easily accessible to invited or uninvited persons?
   THE PROPERTY IS OPEN TO THE PUBLIC. ACCESS IS ENCOURAGED.

6. Does the owner know whether anyone has been injured on the property due to environmental conditions that might have resulted from the military activity that took place on the site (for example, falling into a silo built by the military)?
   NO

7. What structures presently are on the site were they built by the military when?
   ALL REMAINING STRUCTURES LOCATED ON THE SITE WERE CONSTRUCTED BY THE MILITARY CIRCA 194

8. What structures used to be on the site were they built by the military how were they removed?
   A TANK REMOVAL / DEMOLITION PROJECT WAS COMPLETED IN LATE 1980's UNDER DERP. PLANS COULD NOT BE LOCATED AT NED. ADDITIONAL STRUCTURES WERE DEMO'ED BY THE TOWN. - 2 -

Site: FORMER NAVAL AUXILIARY LANDING FIELD Date: 5/28/92

9. What is the present condition of the structures on the site (look to see if they fall into an "unsafe" category.) FORMER SUPPLY WAREHOUSE, TWO BOILER HOUSES AND FORMER HANGAR FOUNDATION WERE INSPECTED. BUILDINGS APPEAR STRUCTURALLY SOUND WITH THE EXCEPTION OF ROOFS WHICH ARE IN NEED OF IMMEDIATE REPAIR.
What was the condition of the structures at the time that the military abandoned the site?
MR. BLIVEN STATED THAT THE BUILDINGS WERE VANDALIZED AND ROOF(S) WERE IN NEED OF REPAIR.

10. Are there any tanks or transformers on the site if so, have they been used by the owner or anyone else since the military left the site have they been altered in any way since the military used them?

NO. THESE WERE REMOVED UNDER DERP PROJECT.

11. Does the owner know whether there are any potential landfill areas at the property If so,
A HTW INVESTIGATION UNDER DERP IS PRESENTLY UNDERWAY.
(a) what kind of material was deposited in the landfill?

—

(b) was the landfill created by the military has it been subsequently used by other people?

—

(c) has the landfill been tested for contamination (if so, get a copy of the test results or any report)

—

12. Does the owner know whether there is any unexploded ordnance at the site? NO

13. What does the owner request that we do at the site? (include everything that the owner asks for, even items that do not qualify for remediation under DERP...like asbestos removal. Use other side of this page if needed)

THE OWNER REQUESTS THAT THE FORMER SUPPLY WAREHOUSE, TWO BOILER HOUSES AND FORMER HANGAR FOUNDATION BE DEMOLISHED AS A BD/DR PROJECT

ATTACHMENT A

Findings and Determination of DOD Responsibility
Naval Auxiliary Landing Field, Charlestown, R.I.
Project No. D01RI00801

U.S. ARMY ENGINEER DIVISION - NEW ENGLAND
DEFENSE ENVIRONMENTAL RESTORATION PROGRAM

FINDINGS AND DETERMINATION OF
DOD RESPONSIBILITY
NAVAL AUXILIARY LANDING FIELD, CHARLESTOWN, RHODE ISLAND
PROJECT NO. D01RI000801

Based on the findings set forth below, the proposed environmental restoration of the former Naval Auxiliary Landing Field at Charlestown, Rhode Island is within the authority and meets the criteria of Public Law 98-212 (97 Stat. 1427).

FINDINGS OF FACT

1. Synopsis of Proposed Project

This Division proposes the removal of 8-10 underground fuel tanks containing various levels of contaminated jet fuel aviation gas, gasoline, and fuel oil. Also proposed is the demolition and removal of one complete one story brick building and further demolition and removal of extensive walls, foundations, pads, adjacent walks and parking areas at 14 sites throughout the installation, one of these sites also has an old water tank head to be removed and several have underground vaults with valves and other equipment to be extracted and filled. A further area is the site of an old sewage distribution system to be removed. Also to be removed is approximately 500,000 sq. ft. of an old bituminous and concrete runway. The town requests that all restored areas be filled, graded and seeded. It is also recommended that the former dump site be tested for possible toxic and munitions contamination as suggested in this report by the RIDEM.

2. Real Estate History

The Charlestown Naval Auxiliary Landing Field was constructed between 1940 and 1942 as a training field for naval pilots and aviation crews. After World War II it continued to be used somewhat for training and as an alternate landing site in support of the Quonset Point Naval Air Station, Rhode Island until its closing in 1970. It was reported to GSA for disposal in 1974.

The entire installation originally consisted of 604 acres. The area covered by this report is the 227 acres conveyed to the Town of Charlestown, Rhode Island. The remaining 377 acres was granted to the Department of Interior, Fish and Wildlife Service and is managed by them as the Ninigret National Wildlife Refuge. The local office of The Fish and Wildlife Service has indicated that there is much work they would like to have done under the DERP program. An inspection will be made of the Ninigret NWR site and a report submitted as an addendum to this finding at a later date.

The 227 acres covered by this report was granted to the Town of Charlestown in two parcels. By deed, dated 22 May 1981, 172.4 acres were conveyed to the town for public park or public recreation purposes. By deed, dated 18 June 1982, 55.0 acres were conveyed to the town for consideration in the amount of $279,000.00 A review of both these instruments revealed no conditions or language either establishing or releasing Government responsibility for restoration.

3. Site Inspection

The site was inspected on 17 September 1984 by Robert L. Batt, Realty Specialist (FTS 839-7590) and Paul Schimelfinyg, Engineer (FTS 839-7394) who met with the POC George F. Bliven, the Director of Recreation for the Town of Charlestown, (401/364-7718).

Mr. Bliven began by explaining that the town's primary concern was to have two underground aviation fuel tanks removed. These tanks are located close to a recently completed 2-1/2 acre freshwater pond which is part of a public recreation area. They have discovered traces of fuel residue in the water of this pond and suspect that it may come from leakage of these tanks. The tanks are partially full of water contaminated aviation fuel. The town feels very strongly about having these tanks removed as soon as possible because they suspect they threaten the water quality, and therefore the public image, of this public use area. The tanks have never been used since being abandoned by the military.

The site where they are located is a heavily overgrown section of ground with several concrete pads and old foundations some of which house old fuel valves and connections. Mr. Bliven would like all of these removed and the area returned to a natural state.

A second site, being the former Motor Pool and Refueling area, has three underground tanks they would like removed. Mr. Bliven believes two are at least partly full of gasoline and one has diesel fuel. This area will be converted in the future to a municipal multi-purpose recreational field, the town would like to have these tanks removed before this happens. The tanks are 15 feet apart, with a drop of 9-1/2 feet from ground level to the top of the fluid in one of the tanks. They would also like the concrete piers at the surface directly over the tanks removed.

There are two boiler houses, each having one or two underground fuel oil tanks apiece. At the one referred to as the "coal fired boiler house" the concrete foundation walls of the demolished building must be removed. At the other site, known as the "oil fired boiler house", the structure remains and the town wishes to retain it, however, Mr. Bliven has requested that some large pits inside the house be cleaned out, filled in and leveled. The underground tanks at both these sites need to be removed.

The site of the water tower and boiler building has an underground fuel tank, contents unknown, that must be removed. Also, a dilapidated brick boiler building must be demolished and removed, as well as various adjacent concrete wall foundations and water tower footings. Two submerged concrete valve chambers must be removed and filled in. A hemispherical steel water tower head is lying on the ground and must be removed.

In addition to the above, there are several sites where former concrete buildings and structures stood. All that remain are broken walls and foundations; concrete pads, mats and footings; and concrete and bituminous walks and parking lots. These areas are covered in most cases with rubble and debris that consist of broken building materials. They are overgrown in many cases with grass and scrub growth. These rubble sites are identified as the old wood hangar foundation sites nos. 1 and 2; the fire house; the canteen, theatre, and gymnasium site; the heater house; dispensary; barracks building; CPO buildings site; and navy storage pads. Mr. Bliven would like to see all these and the other areas, cleared, filled, graded and seeded.

Another area was identified as a sewage outflow distribution system. This consisted of a central concrete distribution box with lines leading to a circular perimeter of smaller concrete outlet boxes. The boxes, lines and ground are overgrown with grasses and scrub growth. The area also seems to have been used in recent times as a dump site for a comparatively small amount of trash and refuse. Mr. Bliven would like the boxes and lines removed to an area where they can be buried and the area filled and graded.

A large sloped area across the street from the sewer distribution system was identified as a former navy dump site and land fill. Mr. Bliven did not believe that any of the material was of a toxic nature. However, a later conversation with a representative of the Rhode Island Department of Environmental Management, Mr. John Leo (401/277-2797), indicated that there may indeed be both toxic wastes and ordinance materials deposited in this site. He believed there were "demi-bombs" disposed of here from the time this area was used to train air crews, there is also evidence of highly corroded and broken up 55 gal. drums. In addition, he felt that there were many airplane and heavy equipment parts buried here that may have been contaminated with degreasing and deicing agents. He is particularly concerned because the water table in this area is affected by tidal action, this situation would exacerbate the many years of leaching that have occurred here already. Now that this area is being developed for public recreation the possible effect if contaminates are present should be considered. Mr. Leo suggests that the dump site area, which includes the slope across from the sewer distribution site and extends somewhat further along the road in a southeasterly direction, has been in place for so long that digging it up, at least initially, would only intensify the danger of spreading toxic materials that have long since had their containers corroded away. He suggests isolating and restricting the area with signs and digging a series of (2-4) monitoring wells to test the degree of toxicity that may be in the ground water. The munitions should not be a problem if the area is restricted, and may be further dealt with later if excavation is determined to be necessary.

Mr. Bliven also stated the town would like a portion of the old navy runway and taxiway removed. One of the runways is being retained by the town for recreation activities. The other runway, consisting of approximately 500,000 sq. ft. has score marks where the town attempted to break it up and remove it. The attempt was abandoned when the town discovered their equipment was not sufficient for the job and they did not have the funds to contract it out. The runway consists of bituminous asphalt with adjacent concrete pads.

DEPARTMENT OF THE ARMY
HUNTSVILLE CENTER, CORPS OF ENGINEERS
P.O. BOX 1600
HUNTSVILLE, ALABAMA 35807-4301

REPLY TO
ATTENTION OF:

CEHNC-OE-AI (200-1c) 12 November 1996

MEMORANDUM FOR Commander, HQUSACE, ATTN: CEMP-RF,
20 Massachusetts Avenue NW, Washington, DC
20314-1000

SUBJECT: DERP-FUDS Inventory Project Report (INPR) Requiring an Ordnance and Explosives (OE) Engineering Evaluation and Cost Analysis (EE/CA)

1. The enclosed INPR has been submitted to us for action. We have reviewed the INPR and recommend a phased EE/CA be scheduled for the following site:

DIVISION	PROJECT NO.	RAC	SITE NAME
NED	D01RI000804	3	Naval Auxiliary Landing Field

2. An INPR Cost Model has been added as enclosure 2. The POC is Ms. Carrie Douglas at 205-895-1465 or Mr. Bill McPherson at 205-895-1595.

FOR THE DIRECTOR, ORDNANCE
AND EXPLOSIVES TEAM:

Carrie W. Douglas
CARRIE W. DOUGLAS
INPR Manager

Encls

CF:
Commander, U.S. Army Engineer Division, New England, ATTN: CENED-RE-AM, 424 Trapelo Road, Waltham, MA 02254-9149

DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION, CORPS OF ENGINEERS
424 TRAPELO ROAD
WALTHAM, MASSACHUSETTS 02254-9149

REPLY TO
ATTENTION OF

CENED-RE-AM (200-1a)

20 Aug 96

MEMORANDUM FOR

COPY

HQ, USACE, ATTN: CEMP-R
COMMANDER, HNC-OE-PM

SUBJECT: DERP-FUDS Inventory Project Report (INPR) for Site No. D01RI0008, Property of the Town of Charlestown (Former Naval Auxiliary Landing Field), Charlestown, Rhode Island

1. The former Naval Auxiliary Landing Field in Charlestown, Rhode Island was determined to be eligible for DERP-FUDS on 1 February 1988. Reconsideration of this site indicates that this auxiliary landing field has the potential for OEW contamination. The proposed OEW project is eligible for DERP-FUDS.

2. Forwarded is an OEW Project Summary Sheet and RAC for the former Naval Auxiliary Landing Field in Charlestown.

3. Recommend that CEHNC-OE-PM review the OEW PSS.

Encl

J. MICHAEL BRADBURY
LTC, EN
Acting Commander

SITE SURVEY SUMMARY SHEET
FOR
PROJECT NO. D01RI000800

SITE NAME: Naval Auxiliary Landing Field

LOCATION: Charlestown, Rhode Island

DESCRIPTION OF PROBLEM: A confirmation study determined that several areas of the site have elevated levels of petroleum hydrocarbons, acetone, and heavy metals. Soil analyses conducted during a tank removal project revealed significant petroleum hydrocarbons and lead contamination.

SITE HISTORY: The site was constructed between 1940 and 1942 as a training field for Navy pilots and aviation crews. After World War II, it continued to be used for training and as an alternate landing site in support of the Quonset Point Naval Air Station, RI, until its closing in 1970. The entire 631.3 acres were reported to GSA for disposal in 1974. GSA conveyed 172.4 acres to the Town of Charlestown in 1981 and 55 acres in 1982. The remaining 403.9 acres were conveyed to the Department of the Interior between 1971 and 1982.

AVAILABLE STUDIES AND REPORTS: DERP Findings and Determination of Eligibility for Naval Auxiliary Landing Field, Project No. D01RI000801; Engineering Report on Contamination Evaluation at the Former Naval Auxiliary Landing Field, prepared for Huntsville Division, by Ecology and Environment, Inc.

CATEGORY OF HAZARD: Hazardous/toxic waste. The HRS score is 12.

BASIS FOR DETERMINATION OF DOD RESPONSIBILITY: DOD is the probable source of the environmental contaminants. The landfills, burn pit area and tanks have not been used by owners subsequent to DOD ownership.

POC/DISTRICT: Robert L. Batt, 617-647-8590, New England Division.

STATUS: The site is currently owned by the Town of Charlestown and Department of Interior.

DESCRIPTION OF PROPOSED REMEDIAL ACTION: Remedial Investigation/Feasibility Study encompassing three landfill sites, a burn pit and a fuel farm area.

ESTIMATED COST: $907,000.

SITE SURVEY SUMMARY SHEET
FOR
PROJECT NO. D01RI000801

SITE NAME: Naval Auxiliary Landing Field

LOCATION: Charlestown, Rhode Island

DESCRIPTION OF PROBLEM: The site contains 8 to 10 underground fuel tanks containing various levels of contaminated jet fuel, aviation gas, gasoline, and fuel oil; a one-story brick building; extensive walls, foundations, and adjacent walks at 14 sites; a water tank head and several underground vaults with valves and other utilities. There also is an old sewage distribution system and approximately 500,000 ft^2 feet of old bituminous and concrete runway.

SITE HISTORY: The site was constructed between 1940 and 1942 as a training field for Navy pilots and aviation crews. After WW II, it continued to be used for training and as an alternate landing site in support of the Quonset Point Naval Air Station, RI, until its closing in 1970. It was reported to GSA for disposal in 1974.

AVAILABLE STUDIES AND REPORTS: Any existing studies may be obtained through the POC listed below.

CATEGORY OF HAZARD: The various debris are incompatible with the present use of the property. The various underground fuel tanks present a potential threat to the groundwater quality.

BASIS FOR DETERMINATION OF DOD RESPONSIBILITY: Items recommended for action were constructed or installed by DOD and have not been of beneficial use to subsequent owners.

POC/DISTRICT: Robert L. Batt/New England Division

STATUS: The site is currently owned by the Town of Charlestown.

DESCRIPTION OF PROPOSED REMEDIAL ACTION: The proposed project includes the removal of 8 to 10 underground fuel tanks; a one-story brick building; walls, foundations, pads, and adjacent walks at 14 sites throughout the installations; a water tank head; an old sewage distribution system; underground vaults with valves; and approximately 500,000 ft^2 of old bituminous and concrete runway. All restored areas are to be filled, graded, and seeded.

ESTIMATED COSTS: $368,000.00

DEFENSE ENVIRONMENTAL RESTORATION PROGRAM
FOR FORMERLY USED SITES
FINDINGS AND DETERMINATION OF ELIGIBILITY
NAVAL AUXILIARY LANDING FIELD, CHARLESTOWN, RHODE ISLAND
PROJECT NO. D01RI000800

FINDINGS OF FACT

1. A Remedial Investigation/Feasibility Study is proposed for five areas which were part of the former Naval Auxiliary Landing Field, Charlestown, Rhode Island. The proposed study encompasses three landfill areas, one burn pit area, and one fuel farm area which were constructed and used by the Department of Defense (DOD). None of the five areas have been beneficially used by subsequent owners. A confirmation study was conducted by the Huntsville Division, Corps of Engineers on the landfill areas and burn pit. The results of this study indicate that soils, groundwater and adjacent surface waters are contaminated with elevated concentrations of various substances, the most prevalent of which are petroleum hydrocarbons, acetone, and heavy metals. Other residual organic compounds detected include pesticide residues of 4,4'-DDT and 4,4'-DDE. Hydrocarbon contamination was detected at the fuel farm area from boring samples collected during closure activities by the New England Division, Corps of Engineers authorized under DERP Project No. D01RI000801. The presence of contamination at all five areas is most likely the direct result of DOD use of the property. The current owners have requested remedial action by DOD.

2. The United States acquired 631.3 acres in fee between 1940 and 1942 for the Charlestown Naval Auxiliary Landing Field.

3. The Navy used the site as a training field for Navy pilots and aviation crews. After World War II, the Navy continued to use the field for training and as an alternate landing site in support of the Quonset Point Naval Air Station.

4. The field was closed in 1970 and reported as excess to General Services Administration (GSA) for disposal in 1974. By deed dated 22 May 1981, 172.4 acres were conveyed to the Town of Charlestown. The deed restricted use to public park and public recreation purposes and contained a recapture clause. There was no restoration provision. By deed date 18 June 1982, 55 acres were conveyed to the Town of Charlestown. There were no restrictions, recapture clause or restoration provision.

GSA transferred the remaining 403.9 acres to the Department of the Interior, U.S. Fish and Wildlife Service (DOI), in three separate transactions by letters dated 21 March 1971 (27.5 acres), 29 November 1979 (316.4 acres), and 2 April 1982 (60 Acres). Each transfer stated that the area was to be used for national wildlife purposes. This area is managed by DOI as the Ninigret National Wildlife Refuge.

5. a. During removal of underground storage tanks authorized under Project No. D01RI000801, New England Division analysis of soil samples revealed significant petroleum hydrocarbon and lead contamination at all tank locations. Concentrations of hydrocarbons ranged from 172 to 5,460 mg/kg and lead concentration ranged from 3.2 to 55.9 mg/kg. Upon receipt of these results, New England Division backfilled the excavations to await a feasibility study. This is standard procedure in the event extensive contamination is discovered during underground tank closure operations.

b. A confirmation study, targeted at three landfills and a burn pit, was conducted at the site by the Huntsville Division, Corps of Engineers to confirm or deny the existence of hazardous or toxic waste contamination in soil or groundwater. The confirmation study consisted of installation of eight groundwater wells and collection of 16 near-surface soil samples and four surface water samples. Area 1 is a former landfill area on the property currently used by the City of Charlestown as a local park and recreation area. Areas 2 and 4 (landfills) and Area 3 (the former airfield burn pit) are on property used by DOI as a wildlife refuge.

1) Three of nine groundwater samples exceeded limits for Federal drinking water standards; three of nine exceeded the chromium standard, four of nine exceeded the lead standard, and two of nine exceeded the mercury standard. Nine of 16 soil samples on Areas 1, 3, and 4 exhibited cadmium levels above the 0.1 to 0.5 mg/kg normal range for cadmium in soils (Schaklette and Boerniger 1984). A soil sample at Area 4 revealed a lead concentration of 128 mg/kg, compared to a normal range of 9 to 31 mg/kg for lead in soils.

2) Acetone was detected in seven of nine groundwater samples, with the maximum concentration measure at 2.7 mg/l at Area 1. However, acetone is regarded as having a low chronic toxicity to man. Application of a 100-fold dilution factor to the 2.7 mg/l concentration to reflect dilution/attenuation from the sampling site to sites of drinking water wells (upgradient) indicates that concentration at drinking wells would not exceed 0.027 mg/l, significantly below a concentration regarded as toxic to man.

3) Petroleum hydrocarbons were reported in five of 11 groundwater samples at concentration of 1 to 36 mg/L. Concentrations in soil ranged from 68 to 7,900 mg/kg in seven of 16 soil samples. Although no standards or criteria were found for these chemicals, application of the 100-fold dilution factor indicate a maximum concentration of 0.36 mg/L at drinking water wells. These concentrations may produce taste and odor that renders the drinking water unpalatable.

4) Pesticides DDT and DDE were reported in eight of 16 soil samples. The concentrations represent low residual concentrations comparable to those found throughout the U.S. where DDT has been applied.

PROJECT No. D01RI000800

DETERMINATION

Based on the foregoing findings of fact, the site has been determined to have been a formerly used DOD property. Moreover, it is determined that an environmental restoration project, to the extent set out herein, is an appropriate undertaking within the purview of the Defense Environmental Restoration Program, established under 10 U.S.C. 2701 et seq., for the reasons stated above. It is recommended that a Remedial Investigation/Feasibility Study of the five areas of the site be initiated by the Missouri River Division to determine the rate and extent of groundwater, surface water, and soil contamination, followed by design and construction of appropriate remedial measures.

1 Oct 88

DATE

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

PROJECT SUMMARY
FOR
DERP-FUDS OEW PROJECT NO. D01RI000804
PROPERTY OF THE TOWN OF CHARLESTOWN
(NAVAL AUXILIARY LANDING FIELD)
CHARLESTOWN, RHODE ISLAND
DERP-FUDS SITE NO. D01RI0008
25 April 1996

DESCRIPTION OF HAZARD: The Navy used the site as a training field for Navy pilots and aviation crews during World War II. After World War II, it continued to be used for training and as an alternate landing site in support of the Quonset Point Naval Air Station. CENED assumes Navy personnel carried small arms weapons.

PROJECT ELIGIBILITY: During DOD control of the site, the site contained barracks to house Navy personnel.

POLICY CONSIDERATION: CENED has no knowledge that subsequent owners have brought ammunition to the site.

PROPOSED PROJECT: This INPR should be referred to CEHNC-OE-PM for a determination of further action.

RAC: Attached.

DIVISION POC: Andrea Cooney, CENED-RE-AM, (617) 647-8269.

ORDNANCE AND EXPLOSIVE
ARCHIVES SEARCH REPORT
FOR
NAVAL AUXILIARY LANDING FIELD
CHARLESTOWN, RHODE ISLAND
PROJECT NUMBER D01RI000804

APPENDIX F

LETTERS / MEMORANDUMS / MISCELLANEOUS ITEMS

APPENDIX F

LETTERS / MEMORANDUMS / MISCELLANEOUS ITEMS

Table of Contents

F-1. Letter approving construction of Auxiliary Fields, dated 9 October 1942 (B-53).

F-2. Letter listing recommended Anti-aircraft Defenses for Outlying Fields, dated 1 May 1943 (B-54).

F-3. Message requesting cost estimates for Lighter than Air Facilities, dated 15 September 1943 (B-55).

F-4. Letter referencing approval of funds for expansion of facilities, dated 12 April 1944 (B-56).

F-5. Letter placing the NAAS on caretaker status, dated 16 February 1950 (B-57).

F-6. Letter listing NAAF an outlying field from inactive Status, dated 11 May 1950 (B-58).

F-7. Public Works List showing status as AAF, dated April 1954 (B-59).

F-8. SECNAV Notice 5450 showing disestablishment, dated 8 September 1961 (B-60).

F-9. Memorandum listing parcels of land proposed for disposal, dated 28 June 1973 (B-61).

F-10. Letter from GSA describing structures and acreage, dated 8 February 1974 (B-62).

F-11. Congressional Inquiry concerning hazardous material, dated 10 October 1980 (B-63).

F-12. Article from United States Navy and Marine Corps Bases, Domestic, dated 1985 (B-64).

F-13. Article from United States Naval Air Stations of World War II, Volume I, dated 1995 (B-65).

F-14. Application to Conduct Archeological Field Investigations, undated (B-66).

F-15. Naval Shore Activity Summary, showing Peacetime Mission of Auxiliary Landing Field, undated (B-85).

IN REPLY ADDRESS
THE BUREAU OF YARDS AND DOCKS
AND REFER TO No.

NOy-4175

NAVY DEPARTMENT

BUREAU OF YARDS AND DOCKS

WASHINGTON, D. C.

OCT 9 1942

From: Chief of the Bureau of Yards and Docks.
To: Officer-in-Charge of Construction, Contract NOy-4175, U. S. Naval Air Station, Quonset Point.

Subject: Contract NOy-4175, Auxiliary Fields to the Naval Air Station, Quonset Point, R. I. at Charlestown, R. I., Westerly, R. I., and Martha's Vineyard, Mass.

Reference: (a) BuY&D 1st End NA43/N1-9 of 30 Sept. 1942 to SecNav via VCNO on BuAer basic ltr NA43, 129585 of 16 Sept. 1942 to BuY&D.
(b) OinC NOy-4175 ltr of 2 Sept. 1942 to BuY&D.

Enclosure: (A) Copy of Encl. (A) to Supplemental Agreement.
(B) Copy of Encl. (B) to Supplemental Agreement.
(C) Copy of Encl. (C) to Supplemental Agreement.
(D) Preliminary Print of Martha's Vineyard.

1. The Officer-in-Charge is advised that the work listed on Enclosures (A), (B), and (C) at Charlestown, Westerly, and Martha's Vineyard respectively, outlying Auxiliary Fields to Quonset Point, is approved for construction. The work approved for construction at Charlestown comprises Projects 501 to 515 at an estimated construction cost of $1,100,500. The work approved for construction at Westerly includes Projects 601 to 611 at an estimated construction cost of $775,000. The work approved for construction at Martha's Vineyard includes Projects 701 to 714 at an estimated construction cost of $1,467,500. The grand total of the work at the three fields is $3,343,000. It is to be noted that for clarity and simplification of accounting, the projects formally authorized at Charlestown, Westerly, and Martha's Vineyard have been changed in numerical designation only to conform to the series designation of projects assigned at each field. Old Project 168 at Charlestown is changed to Projects 501 and 502. Old Project 169(d) at Westerly has been changed to Project 601, and old Project 169(e) at Martha's Vineyard is changed to Project 701 These changes do not affect the previous estimated cost nor allotment numbers, and will be included in the Supplemental Agreement being prepared for the remaining work listed on Enclosures (A), (B), and (C)

FOR VICTORY BUY UNITED STATES WAR BONDS AND STAMPS

101042 00745

NAVY DEPARTMENT

2. CHARLESTOWN BUREAU OF YARDS AND DOCKS

(a) B1-B type plans are to be used for the barracks under Project 504. An additional wing is to be provided onto the Quonset Point Accession Drawings 5899 - 99 - 5900 so as to provide for 900 men on 2 sittings.

(b) Quonset Point Accession Drawings 5888, 5889, and 5890 are to be used for each of the 2 bachelor officers quarters under Project 506. Subsistence facilities included within this project for 108 officers is to be provided in the subsistence building, Project 505, as a separate wing thereof.

(c) Public Works Shop under Project 512 is to be provided by alteration of the present contractors' construction office shown on Quonset Point Accession Drawing 5541.

(d) Storehouse under Project 513 consists of alteration to the present contractors' material and tool shed, and comprises an addition thereto 24'x40' in size. Plans are available at Quonset Point.

(e) Gasoline Storage at all fields is to be of prestressed underground concrete tanks in 25,000 gallon sizes according to the Bureau's standard plans, which have been made available to the field.

(f) Machine Gun Butt at each field is to be similar to standard design, for which plans are already available at Quonset Point.

(g) Complete working plans will be forwarded by the Bureau for the wooden hangar under Project 508. Attention is called to the fact that the estimated cost of the hangar at each field includes providing of a low cost paved apron 160' square at each end of the hangar. The Bureau will forward complete working drawings as prepared by the Architect NOy-4998 for construction contract NOy-4962 at South Weymouth, Mass.

(h) The Bureau will forward complete working plans of a garage similar in size (28'x81') to the Bureau's standard G1 type.

(i) Plans for the Administration Building at Charlestown are being prepared by the Bureau. This building will be

101042 007 5

2. CHARLESTOWN

(i) only one story in size with Aerology Platform on roof thereof.

(j) Under Project 515, plans will be prepared by Quonset Point for Roads, Walks, and Services. All roads, walks, and services are to be of the plainest design, temporary construction, and only of such capacity and size to furnish essential minimum services to the station.

WESTERLY

All facilities to be provided at Westerly will be of the same size and design of similar facilities at Charlestown with the exception of the Administration Building under Project 610, which will include a sick bay. No dispensary is being provided at Westerly for reason of local medical facilities being available in nearby communities. The Bureau will forward complete working plans of the Administration Building including sick bay at Westerly for Project 610.

MARTHA'S VINEYARD

All facilities to be provided at Martha's Vineyard will be similar in size and design to those provided at Westerly and Charlestown, including the Administration Building under Project 713, plans of which are being prepared by the Bureau. This building will be a duplicate of the Administration Building provided at Charlestown.

3. The Bureau of Ordnance has informally advised this Bureau that the magazine requirements at the 3 stations will be greatly in excess of those originally proposed for construction. Rather than delay the construction of the heavier-than-air facilities it has been decided by the Bureau of Yards and Docks and the Bureau of Aeronautics to proceed with the runway construction and heavier-than-air facilities at each field. Upon receipt of official advice from the Bureau of Ordnance as to the number of magazines required at each field, this Bureau will advise the Bureau of Aeronautics of the additional land at each field which will be needed to provide ammunition storage in accordance with the Bureau of Ordnance's safety standards. Inasmuch as the Commanding Officer, Airship Patrol Squadron 11 has indicated in Reference (b) that Charlestown is preferable to Westerly for lighter-than-air facilities, it is the opinion of this Bureau that upon the settlement of magazine locations it will be possible to locate the lighter-than-air facilities at Charlestown.

101042 00745

F-1

[illegible] Aerology Platform on

Final determination of the location of these facilities will be made by the Bureau of Aeronautics upon receipt of advice from this Bureau regarding magazine construction at Charlestown and Westerly.

4. Layout plans of the facilities are being prepared for Charlestown, Westerly, and Martha's Vineyard, and will be forwarded the latter part of this week to the Officer-in-Charge. A preliminary plan of Martha's Vineyard is attached hereto as Enclosure (D). The Officer-in-Charge will note the proposed taxiways at each field for future construction.

5. Allotment No. 17X1204(7)-2-4 is being issued to the Advance Base Depot, Davisville, R. I.. The Officer-in-Charge is authorized to direct the contractors to proceed, prior to receipt of formal Supplemental Agreement to Contract NOy-4175, with all of the work listed on Enclosures (A), (B), and (C).

James S. Kenny
By direction of Chief of Bureau

[illegible]

All facilities to be provided at Martha's Vineyard will be similar in size and design to those provided at Westerly and Charlestown, including the [illegible] Building under Project 713, [illegible]

[illegible]

CC: BuAer
BuOrd
CO, NAS, Quonset Point
Contractors, NOy-4175, New York

101042 00745

F-1

(COPY)
U. S. NAVAL AIR STATION
QUONSET POINT, R. I.

N1(9)A4-2/NA43
Serial C-687
CONFIDENTIAL
CONFIDENTIAL

May 1, 1943.

From: The Commanding Officer.
To: The Commandant, First Naval District.
Via: The Commandant, Naval Operating Base, Newport, R.I.

Subject: Anti-aircraft Defense of outlying fields at Martha's Vineyard, Charlestown, and Westerly.

1. The subject named outlying fields are approaching completion and should have appropriate defense facilities placed to protect them.

2. In the case of Martha's Vineyard there is an additional facility, an aircraft machine gun range contemplated for a location near the southeasterly extremity of Martha's Vineyard. Defense facilities placed on Martha's Vineyard should be located, giving full consideration to this machine gun range.

3. It is recommended that action be originated to obtain defense facilities at subject named fields within the near future. Each outlying field has barracks and utility facilities required for the housing of both officers and enlisted men, as well as other buildings, such as small hangars, power plants, etc.

4. In the case of Charlestown and Westerly it is considered that anti-aircraft defense should suffice. It is recommended for each of these locations that approximately six 3" or 90 m/m AA guns and six 20 m/m AA guns or their equivalents be installed.

5. In the case of Martha's Vineyard which is considered to be more exposed, it is suggested that eight 3" or 90 m/m AA guns and sixteen 20 m/m AA guns be installed for antiaircraft defense. In addition in the case of Martha's Vineyard, it is considered desirable to have a coast defense unit of approximately four 155 m/m guns.

6. Installation of defense facilities should be of such nature and should be placed at such time as to meet the possibility of any action and as consistent with other necessary commitments.

G. MORGAN

DECLASSIFIED
Declassification Review Project 74508
EO_____, Sec._____
DOD Directive_____, Date_____
By_____NARA, INN, Date_____

CONFIDENTIAL

CONFIDENTIAL
OOC(C-445)

Fifth Endorsement

U. S. Naval Advance Base Depot
Davisville, R. I.
May 31, 1945

From: Officer-in-Charge
To: Commanding Officer, Naval Air Station, Quonset Point, R.I.

1. All correspondence returned herewith.

2. Plans in triplicate of the Outlying Fields at Charlestown, Westerly, and Martha's Vineyard are submitted as Enclosures One, Two and Three, respectively.

3. Facilities provided at the Outlying Field at Charlestown are as follows:-

a. Three runways 200' x 3600' (these runways are presently being extended to 5800', 5250' and 4850' in total length.)

b. Three barracks each having a capacity of 232 men.

c. One 16-bed Dispensary.

d. One B.O.Q. having a capacity of 104 men.

e. One 100' x 120' hangar with two 2-story lean-tos and parking apron.

f. One galley and mess hall having a capacity of 900 men (two sittings)

g. One Public Works building.

h. One general Storehouse.

i. One fire station and garage.

j. Three boiler plants

k. One Administration building and Control Tower

l. Electric power is provided by the Narragansett Electric Co. from their line along Route 1.

m. Domestic water is obtained by wells on the field and stored in a 10,000 gallon elevated tank. Water for fire protection is obtained from a 50,000 gallon elevated storage tank, which in turn is supplied from a natural reservoir containing approximately 750,000 gallons.

DECLASSIFIED
Declassification Review Project 745085
EO _____, Sec. _____
DOD Directive _____, Date _____
By _____ NARA, INN, Date _____

(COPY)

6th Endorsement
on CO NavAirSta Conf. ltr. File N1
(9) A4-2/NA43 Serial C-687 dated
May 1, 1943.

N1(9)A4-2/NA43
Serial C-732

U.S. Naval Air Station,
Quonset Point, Rhode Island,
June 1, 1943.

CONFIDENTIAL

CONFIDENTIAL

From: The Commanding Officer.
To: The Commandant, First Naval District.
Via: The Commandant, Naval Operating Base, Newport, R.I.

Subject: Antiaircraft Defense of Outlying Fields at Martha's Vineyard, Charlestown, and Westerly.

1. Forwarded for information.

2. The Naval Aviation Facilities at Martha's Vineyard, Charlestown, and Westerly are being established to provide messing, berthing, and operational facilities for such Fleet Air Detachments as may be assigned there for training or operational purposes.

/s/ G. MORGAN

-- --

7th Endorsement
On CO NavAirSta Conf. ltr. File N1
(9)A4-2/NA43 Serial C-687 dated
May 1, 1943.

CONFIDENTIAL

NB31/MMM
Serial No. 17409

Naval Operating Base
Newport, Rhode Island
June 3, 1943

C O N F I D E N T I A L

From: The Commandant.
To: The Commandant, FIRST Naval District.

1. Forwarded.

/s/ CONANT TAYLOR,
Chief of Staff

DECLASSIFIED
Declassification Review Project 745085
EO_____, Sec_____
DOD Directive_____, Date_____
By_____NARA, INN, Date_____

CONFIDENTIAL

4. Facilities provided at the Outlying Field at Westerly are as follows:

a. Two 150' x 4000' runways

b. One barracks having a capacity of 232 men.

c. One B.O.Q. having a capacity of 52 officers.

d. One galley and mess hall having a capacity of 456 men.

e. One 100' x 120' hangar with two 2-story lean-tos and parking apron.

f. One dministration building and Control Tower.

g. One general storehouse

h. One Public Works Building

i. One fire station and garage

j. One central boiler plant

k. Electric power is provided by the Narragansett Electric Company by their lines along Route 1.

l. Water for domestic and fire protection purposes is obtained from the city of Westerly through a 16" main running along Route 1. An auxiliary 50,000 gallon elevated storage tank has also been provided.

5. Facilities provided at the Outlying Field at Martha's Vineyard are as follows:

a. Two barracks each having a capacity of 232 men.

b. One B.O.Q. having a capacity of 52 men

c. One galley and mess hall having a capacity of 450 men.

d. One Administration building and Control Tower.

e. One 100' x 120' hangar with two 2-story lean-tos and parking area

f. One Public Works building

g. One general storehouse

DECLASSIFIED
Declassification Review Project 745085
EO_____, Sec_____
DOD Directive_____, Date_____
By_____NARA, INN, Date_____

CONFIDENTIAL

h. One fire station and garage

i. One central boiler plant

j. Three runways: one 150' x 3200'
one 150' x 3533'
one 150' x 3765'

k. Electric power is provided by the Cape and Vineyard Electric Company

l. Water supply for domestic and fire protection purposes is obtained from wells on the field.

/s/ A. F. Perry, Jr.
Acting

Encls.
1. Navy Department Drawing Accession No. 5560, "Outlying Fields, Charlestown, R. I., Layout of Runways"
2. Navy Department Drawing Accession No. 5897, "Outlying Fields, Westerly, R. I., Runway Layout"
3. Navy Department Drawing Accession No. 6183, "Outlying Fields, Martha's Vineyard, Mass., Runway Layout"

DECLASSIFIED
Declassification Review Project 745085
EO _____, Sec. _____
DOD Directive _____, Date _____
By _____ NARA, INN, Date _____

~~CONFIDENTIAL~~
141115 (D)

15 SEPT 43

FROM: BUAER

TO: NAS QUONSET POINT

INFO: COMBLIMPRON 11
COMFAIR QUONSET PT.
COMONE

SUBJECT: ESTIMATED OF COST,,REQUEST FOR

1. REQUEST ESTIMATES OF COST FOR CONSTRUCTION OF AUXILIARY LIGHTER THAN AIR FACILITIES FOR 2 ZNP AT NAAF CHARLESTOWN RHODE ISLAND.

2. FACILITIES TO CONSIST OF 2 300 FOOT STANDARD LTA MOORING OUT CIRCLES WITH TAXIWAYS CONNECTING TO RUNWAYS.

3. REQUEST ALSO APPROVAL OF PROPOSED LOCATION OF LTA FACILITIES FROM COMFAIR QUONSET.

4. BUDOCKS ADVISED.

AGE/

DISTRIBUTION

COMDT
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DPWO (A)
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Aer-MA-022-LDF
C 09434
CONFIDENTIAL

NAVY DEPARTMENT
BUREAU OF AERONAUTICS
WASHINGTON

12 April 1944

From: Chief, BuAer
To: ComOne
CO, NAS, Quonset Point
CO, NAAF, Charlestown, R.I.

Subj: NAAF Charlestown, R.I.- Additional Facilities for.

Refs: (a) Planning Directive 11-NN-44 dated 7 April 1944.
(b) Joint BuAer-BuSandA ltr . 11 March 1943 with revision of 15 January 1944.
(c) MDOD No. 446, dated 12 April 1944.

Encl: (HW)
(A) Copy of ref. (c).

1. Ref. (a) approved funds for the expansion of facilities for NAAF, Charlestown, R.I. to support one hundred and twenty (120) CV and twenty (20) VSN aircraft. NAAF, Charlestown will operate under the command of NAS, Quonset Point and will be used as a base for forming and training of F6F-3(N) night-fighter squadrons.

2. NAS, Quonset Point is requested to provide the subject station with the appropriate standard aeronautical material in accordance with the provision of ref. (b). NAS, Quonset Point is further requested to make available to the subject facility additional parachutes as required.

3. NAS, Quonset Point is requested to submit to this Bureau a request for project order to cover local purchase of loose mess and galley equipment and other collateral equipment required which is not being furnished by this Bureau in accordance with ref. (c).

4. NAS, Quonset Point will make available appropriate additional transportation equipment as required, from the NAS, Quonset Point transportation pool which has been established to provide necessary transportation for all Naval Auxiliary Air Facilities operating under the command of NAS Quonset Point. ComOne is hereby requested to make available to NAS Quonset Point the appropriate passenger vehicles to fill the additional requirements of NAAF, Charlestown.

5. By ref. (c) this Bureau will make available to NAAF, Charlestown the appropriate additional collateral equipment, office equipment, labor-saving devices, fire and life-saving equipment, field lighting equipment, telephone crash reporting system, garage and public work shop equipment, and appropriate Class "C" shop and ground equipment.

RECEIVED

Aer-MA-022-LDF

C 09434 NA43

CONFIDENTIAL
Subj: NAAF Charlestown, R.I. - Additional Facilities for.

6. Deliveres of BuAer-furnished equipment will be made direct to NAAF, Charlestown as soon as possible.

/s/ A. N. Perkins

A. N. PERKINS
Captain, USN
By direction Chief of Bureau

CC:
ComFair Quonset
ASO, NASD, Phila.
SO, NAS, Quonset
PWO, NAS, Quonset
SO, NAAF, Charlestown
CASU 27
SO, ComFair Quonset
BuMed
BuSandA (SV) (2)

BOSTON MASS
OFFICE BUILDING
NORTH STATION

1944 MAY 25 PM 3:31

DEPT
PUBLIC WORKS
NAVAL DISTRICT
1ST
RECEIVED

File No.

NA(124)/N4-1/A4-2/
(01)am

NAVAL AIR BASES
FIRST NAVAL DISTRICT
QUONSET POINT, RHODE ISLAND
(HEADQUARTERS)

FEB 16 1950

From: Commander, Naval Air Bases, First Naval District
To: Chief of the Bureau of Aeronautics
Via: Commandant, First Naval District

Subj: Married Quarters at NAAS, Charlestown - Request for use of.

Ref: (a) ComNAB-1 ltr Ser: 226 PW dtd 9 Dec 1949
(b) BuAer ltr Ser 5008 dtd 20 Jan 1950

NA43/N4 SE32

1. Reference (a) requested the use of the married quarters at the Naval Auxiliary Air Station, Charlestown, R. I. for the use of married personnel attached to the Naval Air Station, Quonset Point, R.I. Reference (b) disapproved the expenditure of $8,000 necessary to provide utility services for continued operation of these quarters.

2. The Commander, Naval Air Bases, First Naval District has been directed to place the Naval Auxiliary Air Station, Charlestown in a caretaker status on 31 May 1950. In the interests of economy de-activation of this station is being expedited and it now appears that inactivation will be complete on 31 March 1950 and at that time it would be necessary to place the caretake crew in charge of that Naval activity. Past experience has shown that it is advisable to have the caretakers live aboard the station. In view of the housing shortage in this area it is proposed to utilize the married quarters for housing the caretaker crew without expenditure of additional funds.

3. Unless otherwise directed by the Bureau of Aeronautics, these quarters will be occupied by members of the caretaker crew. The occupancy of these quarters will serve the double purpose of relieving the housing shortage and insuring better upkeep and care of the quarters. The utility services for which funds were requested will of necessity be provided by the personnel assigned to live in the quarters.

D. F. SMITH

Copy to:
BuAer(Advance Copy)

00301459

DEPARTMENT OF THE NAVY
OFFICE OF THE CHIEF OF NAVAL OPERATIONS
WASHINGTON 25, D. C.

IN REPLY REFER TO
Op-50B3/ROL
Ser 11431P50

RESTRICTED
RESTRICTED

11 MAY 1950

From: Chief of Naval Operations
To: Chief of the Bureau of Aeronautics
Commander, Naval Air Bases, FIRST Naval District

Subj: NAAS, Charlestown, Rhode Island; designation as Outlying Field to the Naval Air Station, Quonset Point, Rhode Island

Ref: (a) Restr. Air Planning Directive 50-NE-4 of 20 March 1950
(b) NAS Quonset ltr ser 305, of March 6, 1950 to CNO with encls thereto
(c) Restr. Air Planning Directive 19-NE-43 of 12 April 1943

1. Reference (a) directs the placing of the NAAS, Charlestown, R. I. in an inactive status on 31 May 1950. Reference (b) requests that this station, upon its inactivation, be designated an outlying field to the Naval Air Station, Quonset Point, and lists certain buildings and facilities which it is proposed to retain in use.

2. Effective upon its inactivation, the NAAS, Charlestown is hereby designated as an outlying field to the Naval Air Station, Quonset Point, and placed under the cognizance of the latter station. Reference (c), which gives the mission of the NAS, Quonset Point, and reference (a) will be amended to show this change.

3. The purpose of this action is to provide a suitable auxiliary landing field to meet the operational training requirements of the Fleet and Naval Air Reserve units based in the area, and does not imply the permanent retention in operation by the Navy of any facilities of this station other than the runways. The request of reference (b) to retain in operation certain buildings and facilities in addition to the runways will be answered by separate correspondence.

Copy to:
BuDocks (P-411)
CenLIB
CO NAS Quonset Point
Comdant
Comdain Quonset
NAAS Charlestown
Op-502
Op-50B2
Op-05 [illegible]

Originated by Cdr. Laing (Op50B3)
4 May 1950 - Ext 74155 --- ABO'Leary
Initiated 5 May 1950 - Cdr.Laing - ABO'L.

RESTRICTED
RESTRICTED

PUBLIC WORKS REPAIR AND MAINTENANCE LIST

FOR

15 APRIL 1954

Station:	Auxiliary Landing Field, Charlestown, R. I. (Auxiliary to NAS, Quonset Point, R. I.	Station Priority No. 14
Project Title:	Miscellaneous Maintenance Work Various Buildings and Utilities	Station Ident. No. 267
Total Estimated Cost:	$94,675 Funds Requested Now:	$94,675

1. Complete Description of Existing Conditions

The Auxiliary Landing Field, Charlestown, R. I. is presently used only as an ALF. However, in the event of an assumption of mobilization status, this activity is scheduled to be an Auxiliary Air Station. At the present time only the air field and a few of the buildings are in use and only a small amount of money is provided for station maintenance. Since deactivation, the buildings and utilities have deteriorated to such an extent that they will be unusable in the future if a substantial amount of work of a maintenance nature is not undertaken at once. A recent inspection of this activity by the District Public Works Officer resulted in the formulation of a list of repair work considered to be the minimum necessary to maintain the buildings and utilitiesin a condition such that they could be restored to use without substantial delay in the event that reactivation was required.

2. Purpose of the Project

This project has as its purpose the accomplishment of those items of repair work reported to be necessary to maintain the buildings and utilities of this activity in a state of readiness. Consistent with its peacetime and mobilization missions.

3. Justification

The performance of this repair work will halt deterioration and maintain structures and utilities in an appropriate state of readiness. The need for costly large scale repairs in the future will be avoided and hazards to the safety of operating personnel will be eliminated.

4. Estimate of Cost

The estimated cost of the proposed repairing is $94,675, itemized as follows:

Item	Labor	Material
Residing - Bachelor Officer's Quarters, Public Works Department, and Recreation	$12,300	$8,200

L-300A

DEPARTMENT OF THE NAVY
Office of the Secretary
Washington 25, D.C.

SECNAV 5450
Op-09B23C
Ser 1476P09B

8 SEP 1961

SECNAV NOTICE 5450

From: Secretary of the Navy
To: Distribution List

Subj: Various activities in an Inactive Status; disestablishment of

1. Purpose. The purpose of this Notice is to disestablish sixteen (16) activities which are in an "Inactive" operational status.

2. Disestablishment. The following activities are hereby disestablished:

U. S. Naval Administrative Command Bainbridge, Maryland	1095	175
U. S. Naval Air Facility Honolulu, Oahu, Hawaii	1312	408
U. S. Naval Air Facility Narsarssuak, Greenland	1312	650
U. S. Naval Air Facility San Juan, Puerto Rico	1312	903
U. S. Naval Air Station Orote Guam, Mariana Islands	1452	389
U. S. Naval Auxiliary Air Station Charlestown, Rhode Island	1459	150
U. S. Naval Auxiliary Air Station Cabaniss Field Corpus Christi, Texas	1459	210

U. S. Naval Auxiliary Air Station Barin Field Foley, Alabama	1459	344
U. S. Naval Air Station LTA Santa Ana, California	1459	568
U. S. Naval Hospital Norman, Oklahoma	3435	530
Recruit Training Command Bainbridge, Maryland	5487	250
U. S. Naval Station Kwajalein, Marshall Islands	6030	465
U. S. Naval Diesel School 4th and Gordon Avenue Richmond, Virginia	7308	700
U. S. Naval Schools Facility Former Maritime Academy Pass Christian, Mississippi	7356	600
Marine Corps Air Station Edenton, North Carolina	8139	300
Marine Corps Supply Forwarding Annex Portsmouth, Virginia	8373	715

3. Information. The disestablishment of the above activities is the result of a review within the Department of the Navy of inactive activities to determine those for which there is no requirement for retention. The facilities formerly assigned to these activities have been previously disposed of or transferred to other agencies. No changes in funding or personnel will result from the subject disestablishments.

signed KENNETH BeLieu
original filed NAFACILITY, HONOLULU, OAHU, HAWAII

2 8 JUN 1973

MEMORANDUM FOR THE ASSISTANT SECRETARY OF DEFENSE (INSTALLATIONS AND LOGISTICS)

Subj: Naval Air Station, Quonset Point, Rhode Island: proposed disposal of 1,846.5 acres at

Ref: (a) DODINST 4165.12 of 6 Feb 1967, as amended
(b) OASD(I&L) Memo of 27 May 1971
(c) Title 10 U.S.C. 2662

Encl: (1) Four copies of Proposed Disposal Report
(2) Two copies of NAVFAC Dwg. No. 878085, illustrating Naval Air Station
(3) Two copies of Yards & Docks Dwg. No. 877975, illustrating Auxiliary Landing Field, Charlestown
(4) Two copies of Yards & Docks Dwg. No. 960356, illustrating N. Kingstown Housing Site
(5) Two copies of Yards & Docks Dwg. No. 924466, illustrating Hope Island
(6) Two copies of Yards & Docks Dwg. No. 503911, Regional and Vicinity Map

Enclosure (1) is forwarded as required by reference (a).

The disposal covers approximately 1,846.5 acres of land represented by four non-contiguous parcels, the largest of which constitutes 1,125 acres consisting of an airfield with aircraft overhaul, repair, and other facilities as well as sewage and power plants. The other parcels consist of the North Kingstown housing area comprising 262 units of inadequate family housing located on 27.8 acres; the 603.7-acre Auxiliary Landing Field at Charlestown; and Hope Island (90 acres), located in Narragansett Bay. These four parcels are depicted in enclosures (2) through (6).

In accordance with reference (b), this property has been evaluated and found not to contain sites of historical significance.

If you approve the disposal of the property as set forth in enclosure (1), this Command will submit the Disposal Report to the Armed Services Committees of Congress as required by reference (c).

Very respectfully,

L. D. LAWSON
COMMANDER, CEC, USN
Assistant Commander for
Real Property Management

Copy to:
ASN(I&L) w/encl (1)
CNO(OP-04E) w/encl (1)
NORTHNAVFACENGCOM w/encl (1)
00's Dailies
09B
071E Chron
07 RF
071 File

P/b: R. Stinson (071E)
T/b: G. Ketch, 21 June 1973

DEPARTMENT OF THE NAVY
NORTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
PHILADELPHIA, PENNSYLVANIA 19112

TELEPHONE NO.
Area Code 21
755-4846

2041
File

Code 24110
11011/NALF
Charlestown

8 FEB 1974

General Services Administration
Region One
620 Post Office and Courthouse
Boston, Massachusetts 02109

Attention: Mr. Joseph W. O'Connell
Chief, Real Property Division
Property Management and Disposal Service

Re: Auxiliary Landing Field, Charlestown, RI (Portion of Naval Air Station, Quonset Point, RI)

Gentlemen:

In accordance with Federal Real Property Management Regulations (FPMR), enclosed are Standard Forms 118, 118b, NAVDOCKS 2489A and Report on Title, in quintuplicate, for the purpose of reporting the subject property excess to the needs of the Department of Defense.

Also attached, in quintuplicate, is Y&D Drawing 924468 which contains the property perimeter data. The Muniments of Title and Attorney's Report on Title will be forwarded at a later date.

The real property being reported excess consists of the Auxiliary Landing Field, Charlestown, Rhode Island, a total of 603.77 acres of fee-owned land and 1.33 acres of easement for off-site obstruction lights. Also included in this report are two leases for Pylon Marker Sites.

Forty-nine structures were built in 1942 through 1967 along with utilities consisting of water and electrical systems. The purpose of this Naval Facili was for use as an Auxiliary Land Field by Naval Air Station, Quonset Point, Rhode Island.

encl (3)

204

Code 24110
11011/NALF
Charlestown

This Report is submitted subject to the approval of the Armed Services Committees of the Congress. When this matter is reported out of Committee, you will be so advised.

Very truly yours,

E. V. O'HANLAN, Realty
Specialist, Real Estate Div.,
Northern Division, Naval
Facilities Engineering Command

Enclosures

Copy to: w/c encls
NAVFACENGCOMHQ
NAS QUONSET PT, RI
COMONE (w/o encls)

Tom
For your
or [illegible]

DEPARTMENT OF THE NAVY
OFFICE OF THE CHIEF OF NAVAL OPERATIONS
WASHINGTON, D.C. 20350

IN REPLY REFER TO
Ser 451/733851
10 October 1980

From: Chief of Naval Operations
To: Commander, Naval Facilities Engineering Command

Subj: Congressional Inquiry concerning hazardous material buried at the former Naval Air Field, Charlestown, Rhode Island

Ref: (a) OPNAVNOTE 6240 of 11 Sep 80

Encl: (1) Senator Clarborne Pell ltr of 24 Sep 80 w/attach

1. By enclosure (1) Senator Pell has asked the Navy to determine whether the Navy buried hazardous materials within a site for a proposed new school at the former Naval Air Field, Charlestown, Rhode Island. In the attachment to enclosure (1) the Superintendent of the Charlestown School Department indicated that a former "... pilot at the Charlestown Naval Air Field stated unequivocally that, during his tenure at the base, it was Navy policy to bury materials in the ground at the base."

2. It is requested that NAVFACENGCOM make a quick evaluation of the matter and provide a report thereon to CNO (OP-45) by 24 October 1980 for forwarding to Senator Pell. It is not intended that the evaluation be an "initial assessment study" as described in paragraph 3c(1) of reference (a). The evaluation should incl and document a reasonable check of available records as well as interviews with appropriate personnel (viz., the "former pilot" the Superintendent of the Charlestown School Department) to determine whether or not past Navy hazardous materials disposal practices may affect use of the proposed site for a school.

3. The CNO action officer is Mr. Carl Zillig, OP-451, extensio 697-3639/89.

B. F. Montoya
B. F. MONTOYA
Captain, CEC, U.S. Navy
Director, Environmental,
Protection & Occupational
Safety & Health Division

Copy to:
CHNAVMAT (044)
NORTHNAVFACENGCOM
CBC Davisville, RI
NETC Newport, RI
NAVENENVSA
OP-92

F-11

Enclosure (1) to CNO ltr Ser 451/733851
of 10 October 80

CLAIBORNE PELL
RHODE ISLAND

United States Senate

WASHINGTON, D.C. 20510

September 24, 1980

RECEIVED
SEP 29 11 45 AM '80
OFFICE OF THE
SECRETARY OF
THE NAVY

The Honorable Edward Hidalgo
Secretary of the Navy
Pentagon Building
Washington, D. C. 20350

Dear Mr. Secretary:

Enclosed is a letter from Charlestown School Superintendent Barbara M. Weldon regarding allegations that the Navy may have disposed of hazardous wastes at the former Charlestown Naval Air Base in Rhode Island.

The voters of Charlestown, R. I., will decide Sept. 29 whether or not to build a Middle School at the former air base. The parcel is adjacent and southwest of Route 1-A and the former access road to the base. The town also has an option for an additional 25 adjacent acres.

I would appreciate your assistance in evaluating the possibility that hazardous wastes were disposed on or near this property, as quickly as possible, and your assistance in determining the exact situation by a thorough follow-up examination of the site.

Please keep me advised on an interim basis of your progress. Thank you for your help in this pressing matter.

Warm regards.

Ever sincerely,

Claiborne Pell

enclosure

CHARLESTOWN SCHOOL DEPARTMENT
CAROLINA, RHODE ISLAND 02812
DR. BARBARA M. WELDON
SUPERINTENDENT

September 16, 1980

RECEIVED
SEP 22 1980

The Honorable Claiborne Pell
United States Senate
Washington, D. C.

Dear Senator Pell:

As you probably know, the voters of Charlestown will decide this month whether or not to build a Middle School for Charlestown. The site selected by the Charlestown School Committee is a thirty acre parcel of land which is part of the former Charlestown Naval Air Base. This land has been offered to the town for the school by the Department of Education.

At a public hearing held last evening, a town resident, who claims to have served as a pilot at the Charlestown Naval Air Base, stated unequivocally that, during his tenure at the base, it was Navy policy to bury materials in the ground at the base. These comments raised the spector of another "Love Canal" situation a few years from now for the proposed Charlestown Middle School.

Would it be possible for your office to determine whom we should contact and how we can obtain information from the United States Navy relative to the above allegations? We shall appreciate any assistance you may offer us in this regard.

Cordially yours,

Barbara M Weldon

Barbara M. Weldon
Superintendent

cc: Randall Collins, Chairman, Charletown School Committee
Gilbert Mook, Chairman, Charlestown, Town Council

SUN

Charlestown
Richmond
Hopkinton

paper

The Sun, Westerly, R. I., Tuesday, September 16, 19

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operational costs, Dr. Weldon explained.

"I think the chances are the savings will be even greater," she said because the proposed school is more energy-efficient than the existing school; shorter bus routes are possible; and personnel, especially special education staff, could be combined.

Site Costs

Site costs for the proposed school would be non-existent. The School Building Committee recommends it be located on a 20-acre parcel at the former Naval air base. Its flat, clear surface would permit construction of a one-story school and reduce site preparation expenses.

The land itself has been conditionally offered to the town at no cost by the federal Department of Education, pending vote approval of the middle school project.

Architect Charles Gunnels said a second site on Route 112, next to the elementary school, was rejected because of its slope, rockiness and probable ledge. All would have added to site preparation costs and may have required a more expensive, two-story school.

Citizens React

Few questions were asked on the proposed school's design or curriculum. Most citizens focused on the project's cost and location.

"I have a great deal of reservation on the cost factors," said Andrew Polouski. "I find the figures almost unbelievable. It just befuddles me how we can build a $4

PROPOSED SCHOOL — Above is an architect's drawing of the proposed Charlestown middle school, sited at former Naval air base.

school populations decrease, then Charlestown's share of debt service for a new building at Chariho would rise over the period of a 20-year bond.

Debt service, she explained, is apportioned by the percentage of students each town sends to Chariho.

During the hearing, she noted that proposed changes in state aid could result in 100 percent state funding of new construction during the next 10 years and bonuses for building energy-efficent buildings which can accommodate the handicapped.

Peter Karasuk criticized the selection of the base site. He pointed out that the property may have been used as a military dumping ground and questioned the impact on groundwater.

Polouski noted that the site, which is one mile away from the seashore and above the flood plain, could be in hazard in the event of a hurricane.

But, said one confused resident, "I defy anyone to repeat the figures given here tonight...I don't think we've been given the information on the school we should have. I think the vote in 15 days is too soon."

Collins said that newsletters will be sent out on the middle school proposal after last night's comments are reviewed by his committee and the Town Council.

The warrant for the special financial town meeting on the school proposal, set for 29, will also be advertise

It reportedly will ask t
questions. One asks for
proval of construction fo
middle school at the air b
a second seeks permissi
withdraw grades seven
eight from Chariho.

A third asks voters to
prove a monthly rent of $
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a 25-acre parcel of land
to the proposed school si
the air base. The r
period would be used to d
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land for future educa
uses; if so, it would
transferred to Charles
at no cost.

The town could also bu
property; the rental m
would be applied to the
cost.

NS 2-69 IA 0101-003-0400

Commanding Officer Naval Air Station Quonset Point, RI 02819	VIA: Copy to: COMOMNDNAV, FIRST Naval District (as authorized by COMCIM Ltr [illegible] Mar 73)
10 Commanding Officer, Northern Division DISTRICT PUBLIC WORKS OFFICER Naval Facilities Engineering Command Naval Base Philadelphia, PA 19112	ENCLOSURES (1) NAVDOCKS 2489A (REV. 9-59) (5 copies) (23 pages) (2) NAVFAC Drawing [illegible] (3) (4) DELETE OR ADD ENCLOSURES AS APPLICABLE

1. PROPERTY IDENTIFICATION (Activity)

Naval Auxiliary Landing Field, Charlestown, R. I.

2. DATE PROPERTY [illegible] CLASS TO [illegible] 21 Nov 1973

3. PRESENT USE: Not in Use

4. FORMER USE: Auxiliary Landing Field

5.

USE	NUMBER OF BUILDINGS	FLOOR AREA (SQ. FT.)
A. OFFICE	2	25,529
B. STORAGE	9	5,677
C. OTHER	38	91,436
D. TOTAL	49	122,642

6. ACQUISITION COST TO GOVERNMENT

ITEM	COST
A. BUILDINGS, STRUCTURES, UTILITIES AND MISCELLANEOUS FACILITIES	$ 5,123,[illegible]
B. RELATED PERSONAL PROPERTY	$
C. TOTAL	$ 5,123,[illegible]

7. NATURE OF LAND INTEREST HELD BY GOVERNMENT

[X] FEE OWNED [ ] LEASED [X] OTHER Easement

8. ESTIMATED ANNUAL PROTECTION AND MAINTENANCE COST

[X] GOVERNMENT COST [ ] OTHER $ [illegible]

9. PROPERTY DESCRIPTION

All Class 1 property (605.10 acres as depicted by enclosure 2) and all Class 2 property (as listed in enclosure 1) that comprise the entire Naval Auxiliary Landing Field, Charlestown, R.I.

10. SITE CLEARANCE

None required.

11. NAMES AND ADDRESSES OF INTERESTED FEDERAL AGENCIES AND OTHER INTERESTED PARTIES (If there is a chapel included, any requests for the chapel should accompany the report giving the name, addresses and denomination of applicant.)

State of Rhode Island and Providence Plantations
State House
Providence, R. I.

12. REMARKS (Indicate restrictions on use (transfers of government interest, if any)

I CERTIFY THAT THE ABOVE DESCRIBED PROPERTY IS EXCESS TO THE NEEDS OF THIS ACTIVITY AND THAT ANY NECESSARY MANAGEMENT BUREAU CONCURRENCES HAVE BEEN OBTAINED.

REPORT AUTHORIZED BY (Type name and title)	SIGNATURE	DATE
E. J. KLAMA, CAPT	[signature]	21 Nov 1973

[illegible] (1)

TELEPHONE CONVERSATION RECORD

DATE: 24 OCT 9[illegible]
TIME: 10:15

(THIS RECORD IS TO BE USED FOR BOTH INCOMING AND OUTGOING CALLS)

ORIGINATOR (NAME): DAVE SMITH (TITLE): 114 IDRS (LOCATION):

PERSON CALLED (NAME): PETER KARASUK (TITLE): RESIDENT OF CHARLESTOWN - FORMER PILOT (401)364-6926 (LOCATION):

SUBJECT: CONGRESSIONAL INQUIRY

SUMMARY OF CONVERSATION

1. NO ANSWER

ROUTING				COMMENTS
CODE	ACTION	INFO	INITIAL	
1141		✓	[illegible]	
1142		✓	[illegible]	
114		✓	[illegible] 10	

COPIES TO

SIGNATURE: David R Smith

F-11

PLATE NO. 21

TELEPHONE CONVERSATION RECORD

(THIS RECORD IS TO BE USED FOR BOTH INCOMING AND OUTGOING CALLS)

DATE 28 OCT 1980

TIME 9:20

ORIGINATOR (NAME) DAVE SMITH (TITLE) 114/DRS (LOCATION)

PERSON CALLED (NAME) PAT PAULIUKONIS (TITLE) 1121B (LOCATION) 1-325-8538 NAVFACHQ

SUBJECT CONGRESSIONAL INQUIRY CONCERNING PAST DISPOSAL OF HM AT NALF CHARLESTOWN R.I.

SUMMARY OF CONVERSATION

1. THE WRITER INFORMED MS. PAULIUKONIS THAT NUMEROUS ATTEMPTS HAVE BEEN MADE TO CONTACT PETER KARASUK (FORMER PILOT) BY PHONE. DOES NAVFAC WANT NORTHDIV TO CONTINUE TO TRY TO GET IN TOUCH WITH PETER KARASUK.

2. MS. PAULIUKONIS INDICATED SHE WAS GOING TO TALK WITH C. ZILLIG OP-451 TODAY, AND IF HE IS SATISFIED WITH THE INFO. GATHER TO DATE NORTHDIV'S ASSISTANCE/ACTION WITH THE SUBJ. MATTER IS APPRECIATED/TERMINATED.

ROUTING

CODE	ACTION	INFO	INITIAL
1141			[illegible]
114			G 11/4

COMMENTS

COPIES TO

SIGNATURE David R Smith

F-11

PLATE NO. 21244

CHARLESTOWN, R.I., NAVAL AUXILIARY AIR STATION, 1942–1950

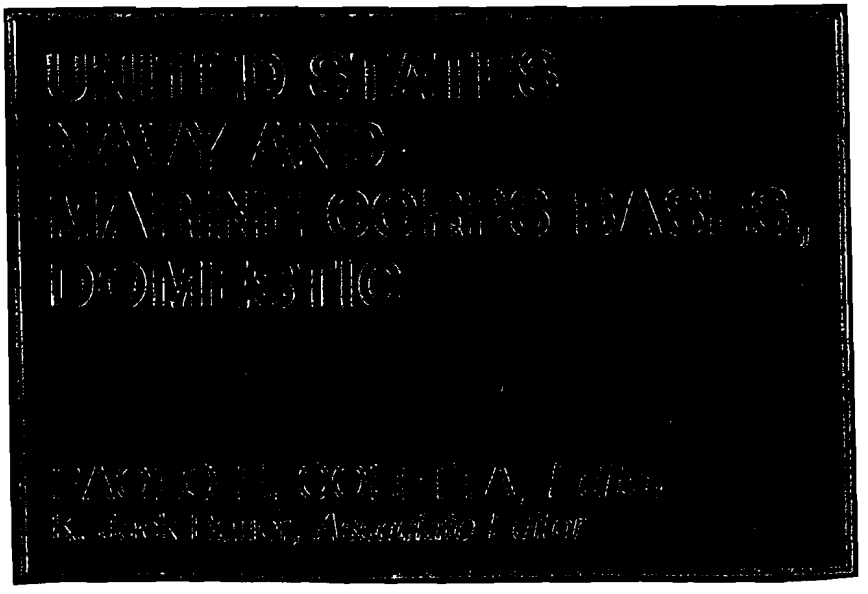
To increase the training facilities at Quonset Point, R.I. (q.v.), it was necessary to expand the area of training to two auxiliary fields, one at Martha's Vineyard, the other at Charlestown, R.I. At the latter site in 1942 the Navy built three 3,500-by-150-foot runways, temporary barracks for 696 men, a 120-by-100-foot wooden hangar, and storage for 100,000 gallons of gasoline. As of 1 September 1945 the station was still going strong, with 32 officers and 214 men on board, Lt. Comdr. Ben Quinn, USNR, commanding, and turning out night fighters and enjoying the use of a Ground Control Approach (GCA) unit.

Although the staff remained at full strength after VJ-Day, demobilization drastically diminished the enlisted complement, which fell from 214 to 155 by 1 September 1945. By the end of the year the complement had been stabilized at 14 officers and 174 men.

A respite came on 23 January 1946, when the Secretary of the Navy established at Charlestown a Navy Air Navigation Electronic Project. This was to design, test, and develop engineering tests for air navigational electronic aids and traffic control systems. Thirty officers, 36 men, 26 civilians, and three aircraft were assigned to the project. Meanwhile, the station supported two air groups that rotated between the station and carriers at sea. On 31 March 1947, however, the GCA unit was transferred to Quonset Point, and air operations were maintained only from 0700 to 1800 hours. Finally, on 31 May 1950, the facility was disestablished. Although redesignated an outlying field for Quonset NAS, only a crash crew and minimum facilities were provided there.

BIBLIOGRAPHY

A. U.S. Navy, Bureau of Yards and Docks, *Building the Navy's Bases in World War II*, 2 vols. (Washington: GPO, 1947), I:238; "Charlestown, R.I., NAAS," *Naval Air Stations*, 3 vols. (Washington, D.C., Navy Yard: Naval Aviation History Office, n.d.); "History of United States Naval Auxiliary Air Station, Charlestown, Rhode Island" (Washington: Naval Historical Center, Operational Archives Branch); "Narrative Summary of NAAS, Charlestown, R.I." (Washington: Naval Historical Center, Operational Archives Branch); "Quarterly Summary of NAAS, Charlestown, R.I." (Washington: Naval Historical Center, Operational Archives Branch).



NAAS Charlestown, Rhode Island

In 1942, the Navy traveled 20 miles southwest of Quonset Pt. and purchased 588 acres of flat coastal farmland. Construction began and the commissioning of the largest of Quonset's auxiliaries took place on January 1, 1943.

Although Charlestown was ready, the first squadron of TBF's did not report until June 1. During the remainder of 1943, Quonset sent various types of squadrons to Charlestown for training, including VC-32, VF-32, VC-43, and VT-14, among others. The first night carrier air group, CVLG(N)-43 that consisted of a fighter and a torpedo squadron, arrived on August 24, 1943. Future president George Bush, a pilot of VT-51, passed through Charlestown during December 1943 and January 1944. In February 1944, the mission of the base changed as a Night Fighter Training Unit arrived from Quonset Point. Night torpedo training moved elsewhere as Charlestown concentrated on night fighter training. Initially, the Navy formed night fighter squadrons and conducted training of the entire squadron. In September 1944, VFN-75, 107, 108, 109, and 110 were all on the station with F6Fs.

The first Kamikaze attacks on the U.S. Fleet occurred in October. Shortly thereafter, night became the Kamikazes preferred time of attack. Night fighter training quickly became the highest priority. In November 1944, the Navy formed NACTULANT (Night Attack and Combat Training Unit-Atlantic). Rather than training as a squadron unit, individual pilots received training with the aircraft assigned to NACTULANT, which remained at Charlestown to the end of the war with peak strength reaching 172 aircraft -- mostly F6Fs.

Charlestown had three asphalt runways of 5800 ft., 5470 ft., and 4800 ft. plus a catapult and arresting gear system. Station complement in early 1944 numbered 269 officers and 1751 men with barracks capacities of 291 officers and 1325 men. Station aircraft usually consisted of a J4F Widgeon and a GH Howard. In July 1943, CASU 22 sent a detachment to Charlestown. When night training began in late 1943, CASU 22 was enlarged and recommissioned as CASU 27. NACTULANT later absorbed the personnel of CASU 27. Radar, essential for night air combat; arrived in April 1944, as a Transportable Night Fighter Training Unit came aboard.

After the war, Charlestown, the only auxiliary of Quonset to remain open, became the permanent home to a CAG. On October 6, 1949, the first attempted takeoff of an AD Skyraider with the wings folded happened at Charlestown. The aircraft reached an altitude of approximately 200 ft., when the right wing began to unfold -- either on its own or by pilot action. The aircraft then rolled left and crashed. The midshipman pilot survived, only suffering a fractured collar bone. Shortly thereafter, the pilot turned in his wings.

In March 1950, Charlestown closed and became an OLF of Quonset Pt. Charlestown remained in that status until 1974 when Quonset Pt. closed. Today, the former field is used partially as a recreational park by the town of Charlestown and the rest as the Ninigret National Wildlife Refuge. A few Navy buildings have survived. A memorial has been erected at the park in memory of the more than 59 airmen who lost their lives during NAAS Charlestown's existence.

LDW File No. 20, 1702, 170:
1704

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

RHODE ISLAND HISTORICAL PRESERVATION COMMISSION

Application for Permission to Conduct Archeological Field Investigatio
(pursuant to the Antiquities Act of Rhode Island, G.L. 42-45)

1. Applicant's Name and Address R.I. Aviation Heritage Association, P.O. Box 1739, Charlestown, R.I. 02813
   A. Principal Investigator(s): Lawrence D. Webster

   B. Field Supervisor(s): Robin Foote

2. Previous Experience (Please attach vita): 25 years experience with Aviation Archeology and Aero Historian activities. Curator NEAM
3. Beginning date of Project: 1969 - First knowledge of A/C at site.

4. Duration of Project: Until recovery completed.

5. Location of Project: NALF Charlestown, in and at edge of small pond at end of RW-30; on hummock nearby (AD-2Q)
6. Ownership: US Govt.

7. Scope of Project (refer to applicable scope in Survey Standards): Recover A/C for identification and historical study; use of parts for restoration of similar A/C for RIAHA.
8. Research Design (present research problems, formulate hypotheses, discuss how hypotheses will be tested with data, discuss how data will be manipulated and hypotheses evaluated).
   Attach extra sheets: Recover A/C, preserve the single hulk that wa immersed in brackish water; strip useable parts. Long term storage for future study.

9. Attach Budget:

10. Specify repository: LDW storage area.

11. Projected completion of final report and date when a draft review copy will be submitted to HPC: Upon completion and receipt of historical documents from archival sources.

I _____ hereby certify that the information contained in this application is correct, that I will comply with all federal and State Legislation and applicable Standards and any special conditions appended to this application, and that the site will be maintained and returned to its original condition before the completion date given above in number:11.

_____	_____
Permit Effective Date	Applicant
_____	_____
Approved Rhode Island Historical Preservation Commission	Owner State of Rhode Island and Providence Plantations.

Form revised 10/85

ACCIDENT LIST NO. 20 DATE _____ TIME _____

WEATHER CONDITIONS _____

AIRCRAFT TYPE AD-2Q Skyraider

CREW: _____ NAME _____ ADDRESS _____ INJURIES _____

1.) _____

2.) _____

3.) _____

4.) _____

ACCIDENT LOCATION _____

ACCIDENT PARTICULARS _____

BASE _____ SQUADRON _____

WITNESS _____

OTHER INFORMATION SOURCES _____

REMAINS PRESENT AT SITE Entire aircraft found at Charlestown NALF in 6/69; ha been used as fire hulk before being thrown in SE dump off Runway

REMAINS REMOVED FROM SITE Rear fuse. and vertical fin, misc. parts of fuse. and wings; total 800 lbs.

REMAINS LEFT AT SITE Main fuselage and inner wings

REMARKS _____

ACCIDENT LIST NO. 1702 RI DATE _____ TIME _____

WEATHER CONDITIONS _____

AIRCRAFT TYPE Chance Vought F4U-5 Corsair BUNO _____

CREW: 1 NAME _____ ADDRESS _____ INJURIES _____

1.) _____

2.) _____

3.) _____

4.) _____

ACCIDENT LOCATION Charlestown, RI; At NALF in small pond at end of RW-30

ACCIDENT PARTICULARS Practice fire hulk dumped in pond in late 1950's; buried under bldg. debris fall 1969.

BASE _____ SQUADRON _____

WITNESS _____

OTHER INFORMATION SOURCES _____

REMAINS PRESENT AT SITE Fuselage and wing center section

REMAINS REMOVED FROM SITE Upper cockpit cowl and instrument panel with fitting.

REMAINS LEFT AT SITE Fuse.& C.S.;

REMARKS _____

ACCIDENT LIST NO. 1703 RI DATE _____ TIME _____

WEATHER CONDITIONS _____

AIRCRAFT TYPE Chance Vought F4U-5 Corsair BUNO

CREW: 1 NAME _____ ADDRESS _____ INJURIES _____

1.) _____

2.) _____

3.) _____

4.) _____

ACCIDENT LOCATION Charlestown, RI; At NALF in small pond at end of RW-30

ACCIDENT PARTICULARS Practice fire hulk dumped in pond at edge in late 1950's; buried under bldg debris fall 1969.

BASE _____ SQUADRON _____

WITNESS _____

OTHER INFORMATION SOURCES _____

REMAINS PRESENT AT SITE Forward fuselage, fuel bay, wing C.S.;

REMAINS REMOVED FROM SITE Part off lower fuel bay fuse. and LH wing stub rec'v 1969;

REMAINS LEFT AT SITE _____

REMARKS _____

ACCIDENT LIST NO. 1704 RI DATE _____ TIME _____

WEATHER CONDITIONS _____

AIRCRAFT TYPE Chance Vought F4U-5 Corsair BUNO _____

CREW: 1 NAME _____ ADDRESS _____ INJURIES _____

1.) _____

2.) _____

3.) _____

4.) _____

ACCIDENT LOCATION Charlestown, RI; At NALF at edge of small pond at end of RW-30.

ACCIDENT PARTICULARS Practice fire hulk dumped in pond late 1950's; buried under bldg debris fall 1969.

BASE _____ SQUADRON _____

WITNESS _____

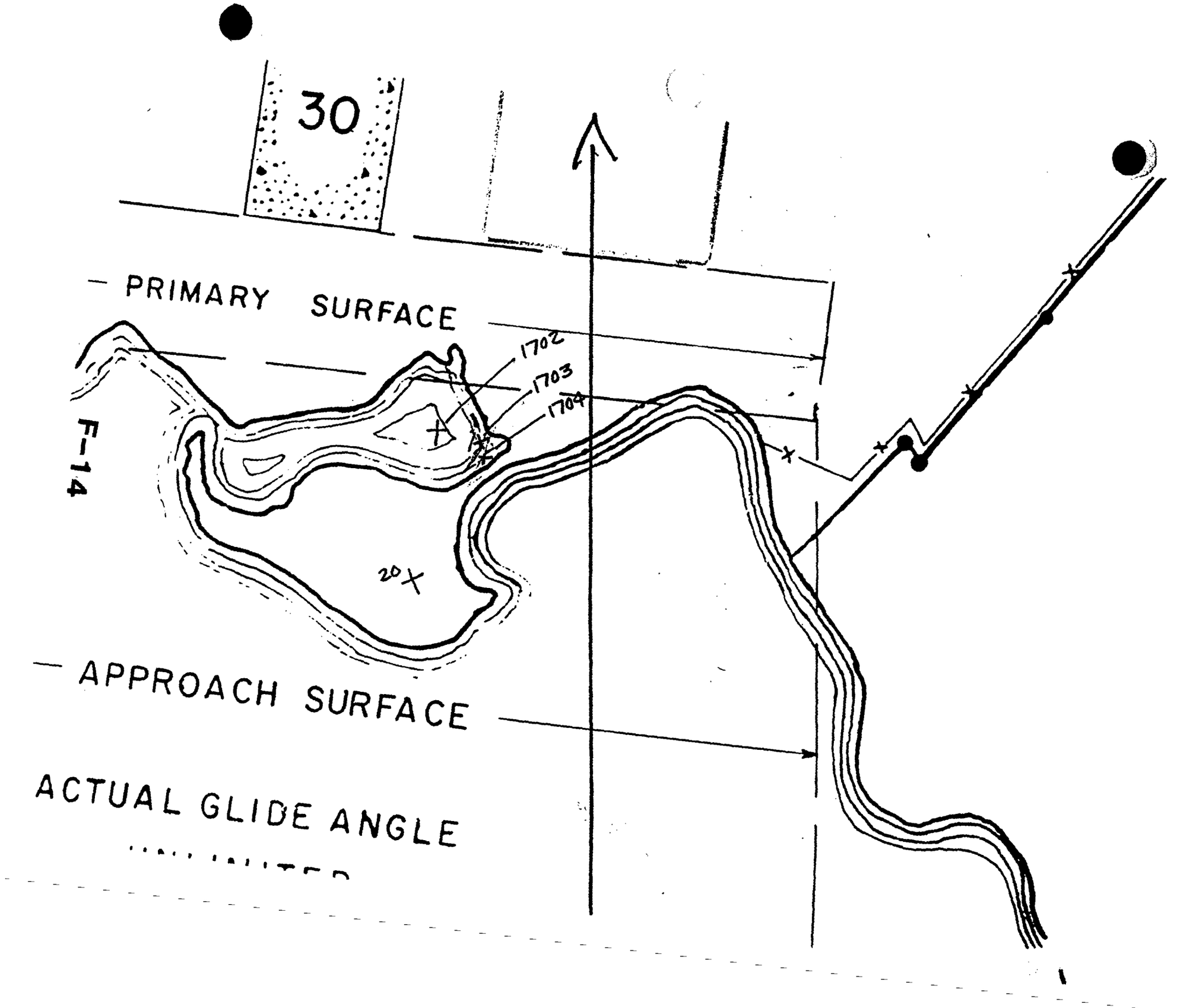
OTHER INFORMATION SOURCES _____

REMAINS PRESENT AT SITE Scorched C.S. and fuel bay, cockpit floor;

REMAINS REMOVED FROM SITE None;

REMAINS LEFT AT SITE _____

REMARKS _____


30
PRIMARY SURFACE
1702
1703
1704
20
APPROACH SURFACE
ACTUAL GLIDE ANGLE

[redacted] X-78414

1459-150

3-50102
1-55

NAVAL SHORE ACTIVITY SUMMARY

WASHINGTON

NAME	LOCATION	CODE	NAVAL DISTRICT	ARMY AREA	AIR FORCE AREA
Annex-Auxiliary Landing Field	Charlestown, R.I.	-	1	1	1

MANAGEMENT BUREAU	FINANCIAL RESPONSIBILITY	TECHNICAL BUREAU	OPERATIONAL STATUS	MAJOR ACTIVITY	MINOR ACTIVITY
BuAer		BuAer	Active	-	-

OTHER ARMED SERVICE INSTALLATION

ARMY	AIR FORCE
	Otis Air Force Base Falmouth, Mass. 61NE Active Westover Air Force Base Chicopee Falls, Mass. 72 NW Active L.G. Hanscom Field-AF Bedford, Mass 79N Active

MISSION

PEACETIME

ALF to Air Station, Quonset Point, R.I. for fleet carrier operations. Established in accordance with OPNAV INSTR. 5451.28 of 26 Jun 1951.

WARTIME

BUAER
R. LEORD 1/59
THIS FIELD [illegible]
BEING USED AS ALF.
3/6/56.

MILITARY COMMAND - PARENT ACTIVITY
Air Station 1452-772
Quonset Point, R. I.

CONTIGUOUS ACTIVITY (Same Real Estate)

ANNEX FACILITY (Real Estate Not Contiguous)

TYPE OF OCCUPANCY (Land Area - Acres)

NAVY OWNED	GOV'T. OWNED	PERMITTEE	LESSEE	RECAPTURE CAUSE	TOTAL
631.27		~~.46~~	~~1.67~~ 1.23 2/		~~633.40~~ 1/

PLANT ACCOUNT COST 3/ 1/1/56

LAND	BUILDINGS	EQUIPMENT	TOTAL
166,232	~~6,489,925~~ 6,644,414	96,353	~~$6,752,510~~ 6,906,779

PERSONNEL

	OFFICER	ENLISTED	CIVILIAN	TOTAL
ON BOARD				
MOBILIZATION CAPACITY	124	1,287		
PRESENT IN TRAINING AND TRANSIENTS				
PRESENT ATTACHED UNITS				
WWII PEAK			199	

TROOP HOUSING

BACHELOR OFFICERS QUARTERS	
SLEEPING ROOMS 6	CAPACITY
16,128	62

ENLISTED BARRACKS	
BUNKING AREA 6	CAPACITY
69,120	1040

PUBLIC QUARTERS		FAMILY HOUSING
MOQ	NEQ	APARTMENT UNITS

MEDICAL

HOSPITAL BEDS	
NORMAL	EMERGENCY

DISPENSARY		
NO.	BEDS	
	NORMAL	EMERGENCY
1	39	84

STORAGE

TYPE	GROSS SQUARE FEET	PETROLEUM	BARRELS
COVERED	52,230	FUEL OIL	357
OPEN	213,570	DIESEL FUEL	
COLD	600	AV GAS & Jet	3,000
AMMO.	3,070	MO. GAS	238
		JET FUEL	
		LUBR. OIL	119
TOTAL	269,470	TOTAL	3,714

DRYDOCKS - PIERS - RUNWAYS

NUMBER	LENGTH	WIDTH	VESSEL DRAFT (Maximum)	WATER DEPTH MLW	WHEEL LOAD (Single tire) AT 70 p.s.i.
4-22	5800	200			75M
12-30	4800	200			60M
17-35	5250	200			

OTHER FACILITIES

TYPE	NO. BLDGS.	GROSS SQUARE FEET
ADMINISTRATION	1	8,324
HANGAR-LP	3	86,321
LABORATORY		
SCHOOL		
SHOP	4	28,770
TRAINING	3	6,720
SEAPLANE		
HANGAR		
RAMP-NO.		
O&R CLASS		
SHIP BERTHING		

UTILITIES

	SOURCE	CAPACITY
ELECTRICITY	Narragansett El Co.	KVA 420
WATER	Navy Wells	Gals. Daily Ave.
SEWER	Filtration Plant	Persons 2,000
GAS		Therms Monthly Ave.

REMARKS:
1/ INCLUDES 30 ACRES SWAMP
2/ 2 PARCELS 0.46 A FOR OBSTRUCTION LIGHT + .87 A RIGHT OF WAY
3/ PAC NOT INCL. IN NAS QUONSET PT., R.I.

NAAS WAS INACTIVATED 5-31-50

Map 1-12, 1-13A & 1-13B

1-3-3

E-31100

ORDNANCE AND EXPLOSIVE
ARCHIVES SEARCH REPORT
FOR
NAVAL AUXILIARY LANDING FIELD
CHARLESTOWN, RHODE ISLAND
PROJECT NUMBER D01RI000804

APPENDIX G

REAL ESTATE DOCUMENTS

APPENDIX G

REAL ESTATE DOCUMENTS

Table of Contents

G-1. Declaration of Taking (Misc. No. 150) with Exhibit A, Navy Department, dated 28 December 1942 (B-28).

G-2. Plan of Additional Land Taking (Map with land description), US Naval Air Station, dated 17 March 1943, with alteration, dated 17 April 1943 (B-29).

G-3. Letter Amending Condemnation Proceedings, Navy Department, dated 25 June 1943 (B-30).

G-4. Declaration of Taking (Misc. No. 197) with Schedule A, Navy Department, dated 25 June 1943 (B-31).

G-5. Letter, Navy Department, accepting 43.2 acres, dated 24 July 1943 (B-32).

G-6. Letter, Navy Department, accepting 588.12 acres, dated 24 July 1943 (B-33).

G-7. Letter, GSA, Transfer of Property (27.5 acres), dated 16 July 1970 (B-34).

G-8. Letter, Ninigret National Wildlife Refuge, accepting 316.4 acres, dated 21 December 1979 (B-35).

G-9. Quitclaim Deed, Heritage Conservation and Recreation Service (172.4 acres to Charlestown, RI), dated 27 March 1981 (B-36).

G-10. Corrective Quitclaim Deed, Heritage Conservation and Service (172.4 acres to Charlestown, RI), dated 22 May 1981 (B-37).

G-11. Letter, Ninigret National Wildlife Refuge, accepting 60 acres, dated 8 September 1981 (B-38).

G-12. Deed with Schedule A, GSA (55 acres to Charlestown, RI), dated 18 June 1982 (B-39).

G-13. Current Assessor's Map, Charlestown, Washington County, Rhode Island, dated 1982 (B-40).

G-14. Deed, Town of Charlestown, RI (2.48 acres to the United States Government), dated 23 May 1988 (B-41).

IN THE DISTRICT COURT OF THE UNITED STATES

FOR THE DISTRICT OF RHODE ISLAND

United States of America, Petitioner, v. 589 acres of land, more or less, in Washington County, Rhode Island, Laura W. Prosser, et al., Defendants	MISC. NO. 150

DECLARATION OF TAKING

WHEREAS pursuant to the authority of the Second War Powers Act approved March 27, 1942 (Public Law 507, 77th Congress), and the Acts of Congress approved February 6, 1942 (Public Law 438, 77th Congress) and February 7, 1942 (Public Law 441, 77th Congress), the above styled condemnation proceeding has been filed in this court seeking to condemn on behalf of the United States of America certain lands;

NOW, THEREFORE, pursuant to the provisions of the Act of Congress approved February 26, 1931 (46 Stat. 1421) I, Acting Secretary of the Navy, do hereby make and cause to be filed this declaration of taking, and by virtue thereof

do hereby state that the lands selected for acquisition aggregate five hundred eighty-eight and 29/100 (588.29) acres of land, more or less, in Washington County, Rhode Island, which lands are shown on map dated November 27, 1942, entitled "Sketch of Lands to be acquired in Washington County, Rhode Island by the United States of America for the establishment of an outlying field (NAS, Quonset Point)", attached hereto as Exhibit "B" and made a part hereof. The lands are more particularly described in Exhibit "A", 6S08646, attached hereto and made a part hereof.

And I do declare the lands to be taken under authority of the aforesaid acts of Congress; that the use to which the lands are to be put is for an outlying field in connection with the Naval Air Station, Quonset Point, Rhode Island, as authorized by said acts; and that the estate hereby taken in said lands for the public use aforesaid is in fee simple, subject to the rights of the public to use for highway purposes those portions of roads forming part of the boundaries of the lands taken.

And I do hereby state that the sum of money estimated by me to be just compensation for all of said lands, improvements thereon and appurtenances thereunto belonging is Seventy Thousand Dollars ($70,000.00), and is hereby deposited in the registry of the court for the use and benefit of the persons entitled thereto, and the amounts of just compensation for said lands which are hereby taken are as follows:

Name	Parcel No.	Estimated Just Compensation
Thomas L. Arnold Estate, Lyndon Arnold, et al., Trustees, 14 Wall Street, New York, N. Y.	1	$ 15,000.00
Harold T. and Laura W. Prosser, 34 Theodore Street, Chicopee Falls, Mass.	2 & 2A	15,000.00
George H. and Rufus K. Prosser, Prosser Farm, Charlestown, R. I.	3,3A & 3B	40,000.00
TOTAL		$ 70,000.00

I am of the opinion that the ultimate award for the taking of said lands will be within the limits prescribed by Congress.

IN WITNESS WHEREOF, the petitioner, by and through James Forrestal, Acting Secretary of the Navy, acting for and in behalf of the Secretary of the Navy, has caused this declaration of taking to be signed and the seal of the Navy Department to be affixed hereto in the City of Washington, District of Columbia, this 28th day of December, 1942.

UNITED STATES OF AMERICA

By_____

James Forrestal
Acting Secretary of the Navy

(SEAL)

DESCRIPTION OF [illegible] ACRES, [illegible]
WASHINGTON COUNTY, RHODE ISLAND, (OUTLYING FIELD, CHARLESTOWN, FOR NAVAL AIR STATION, QUONSET POINT).

All of that land lying and being situate in the Town of Charlestown, County of Washington, State of Rhode Island, more particularly described as follows:

[redacted]

Beginning at the point of intersection of the southerly right-of-way line of United States Highway No. 1, and the line dividing the lands of the Thomas L. Arnold Estate and the Isaac T. Prosser Estate; thence with the southerly right-of-way line of said United States Highway No.1, the following courses and distances, south 64° 49' 51" west 848.46 feet to a point; thence south 69° 11' 58" west 520.95 feet; thence south 70° 18' 38" west 650.00 feet; thence south 71° 16' 18" west 326.18 feet to a point; thence leaving said Highway south 15° 03' 14" east, a distance of 1279.81 feet more or less to the mean high-water line of Foster's Cove; thence in a general southerly direction with the meanders of the mean high-water line of said Foster's Cove to the intersection of said mean high-water line and the mean high-water line of Charlestown Pond; thence in a general easterly direction with the meanders of said mean high-water line of Charlestown Pond to the point of intersection of said mean high-water line and the southerly extension of the line between the Thomas L. Arnold Estate and the Isaac T. Prosser Estate thence N 24° 43' 25" W. with said line for a distance of 1150.55 feet, passing through a stone bound at approximately 40 feet; thence leaving said line north 59° 59' 46" east, a distance of 1365.38 feet to a point; thence north 25° 55' 28" west, a distance of 413.21 feet to a point; thence north 53° 37' 20" east, a distance of 482.27 feet to a point; thence north 24° 42' 56" west, a distance of 1251.55 feet to a point; thence north 41° 43' 23" west, a distance of 139.29 feet to a point; thence north 24° 45' 34" west, a distance of 1915.72 feet to a point; thence north 53° 41' 40" west a distance of 53.00 feet to a point; thence north 60° 41' 03" west a distance of 44.54 feet to a point on the southerly right-of-way line of said United States Highway No. 1; thence with said southerly right-of-way line, the following courses and distances, south 56° 47' 10" west 437.47 feet to a point; thence south 60° 33' 53" west 321.50 feet to a point; thence south 62° 38' 33" west 977.42 feet to the point of beginning, excepting therefrom that certain Tract known as the Cemetery, being a strip of land lying adjacent to the aforementioned right-of-way line and measuring approximately 300 feet on the northwesterly and southeasterly lines, 95.5 feet on the southwesterly line and 106.5 feet on the northeasterly line and containing after said exception approximately 560.62 acres.

[redacted]

All of that certain parcel of land known as Hunter's Harbor Lot more particularly described as follows: commencing at a stone bound set in the southerly extension of the line between the lands of said Thomas L. Arnold Estate and the Isaac T. Prosser Estate, said stone being approximately 40 feet, northwesterly along said line from the mean high-water line of Charlestown Pond; thence north 24° 43' 25" west 200 feet to the true point of beginning; thence at right angles a distance of 150 feet; thence at right angles, a distance of 50 feet; thence at right angles, a distance

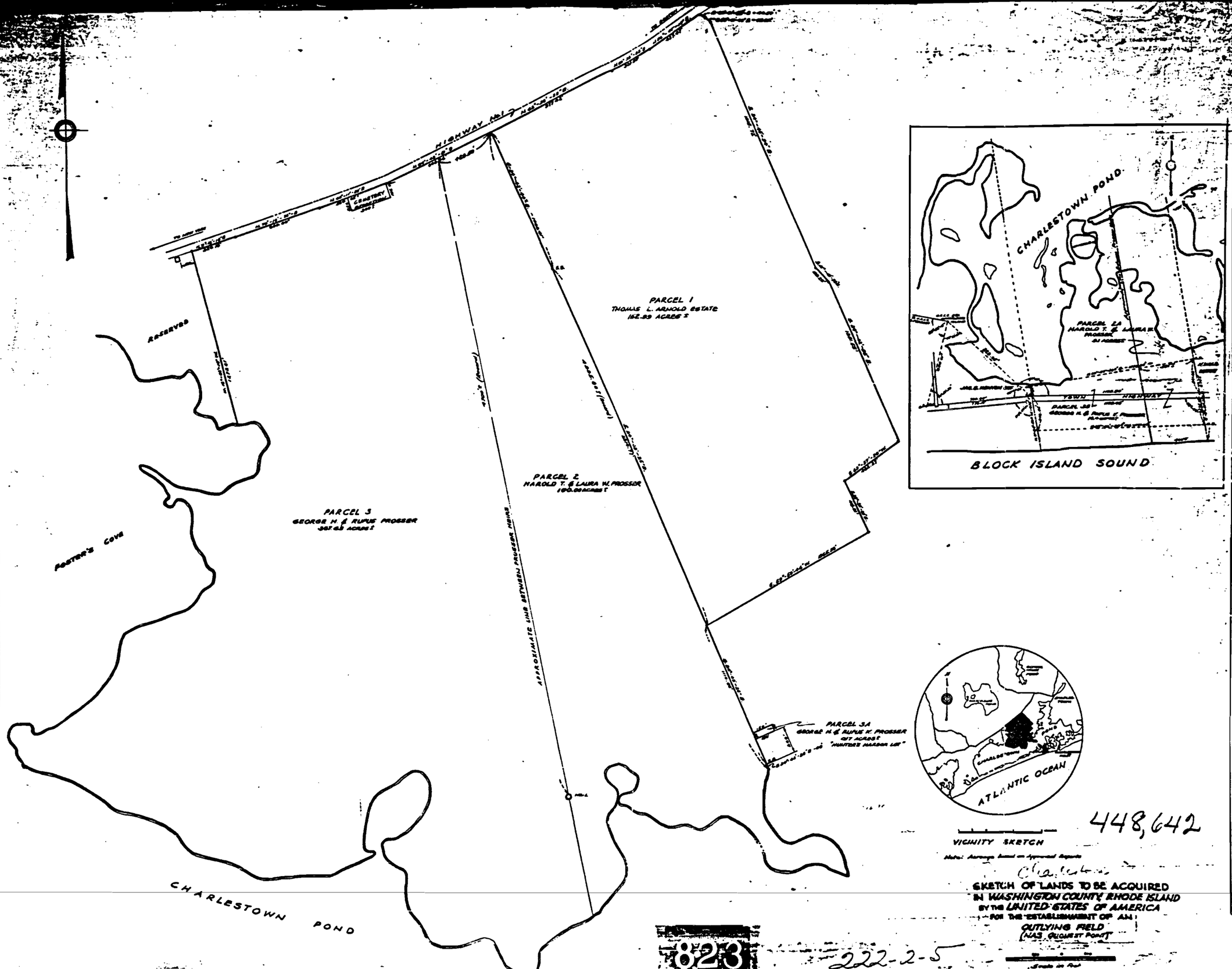
of 150 feet to said southerly extension of the line between the lands of said Arnold and Prosser Estates; thence south 24° 43' 25" east, a distance of 50 feet to the point of beginning, containing 0.17 acres, more or less.

[redacted]

That certain parcel of land bounded southerly by the Atlantic Ocean, known also as Block Island Sound, westerly by lands formerly of James S.Kenyon, northerly by Charlestown Pond and easterly by the land formerly owned by the Hoxies and McDonald, now the Thomas L. Arnold Estate, more particularly described as follows:

Beginning at a point in the line common to the lands of the James S. Kenyon Estate and the Isaac T. Prosser Estate and the mean high-water line of Charlestown Pond; thence in generally northerly, easterly and southerly with the meanders of said mean high-water line to the western boundary of the Thomas L.Arnold Estate; thence south 9° 37' 35.6" east crossing the Town of Charlestown Highway, a distance of 675 feet, more or less, to the mean high-water line of the Atlantic Ocean; thence in a southwesterly direction with the meanders of said mean high-water line to the easterly line of James S. Kenyon Estate; thence north 9° 44' 50.6" west with said line and crossing the Town of Charlestown Highway 475 feet, more or less, to the point of beginning , excepting therefrom the highway right-of-way included within these boundaries and containing in addition portions of two small peninsulas and several small islands lying between the prolongation northerly of the easterly and westerly lines of the aforementioned tract and containing after said exception 27.5 acres, more or less.

All as delineated on that certain plat entitled "Sketch of Lands to be acquired in Washington County, Rhode Island, by the United States of America for the establishment of an Outlying Field (NAS Quonset Point)" dated November 27, 1942.



448,642

Charlestown

823

222-2-5

G-1

1922 Plat

Lot No.	Owner	Acres
1&2	Justus R. Thorndike et ux	0.44*
3	David E. Mills	0.19*
4	George F. White	0.19*
5	Walter L. Gardner & Winston A. Taylor	0.20*
6,7,7a	Milton Duckworth M.D.	0.47*
8&9	Welcome S. Carmichael	0.67*

Block A

2-10	Thomas L. Arnold Est.	*

Block B

1-19	Thomas L. Arnold Est.	*

Block C

Lot No.	Owner	Acres
3	Edwin K. & Jeanie Parker	0.11*
1,2,4-15	Thomas L. Arnold Est.	*

Block D

1	Frank E. & Mary A. Babcock	0.19*
2-9	Thomas L. Arnold Est.	*

Block E

1	Ferquhar Smith	0.32*
2&3	John R. & Grace H. Oppy	0.67*
4&5	Joseph M. & Edith L. Molloy	0.53*
6	Ethel G. Burdick	0.15*
7&8	Ethel G. Burdick	0.40*
9	Thomas L. Arnold Est.	*
10-12	W. Louis & Ruth J. Frost	0.61*

Block E (cont.)

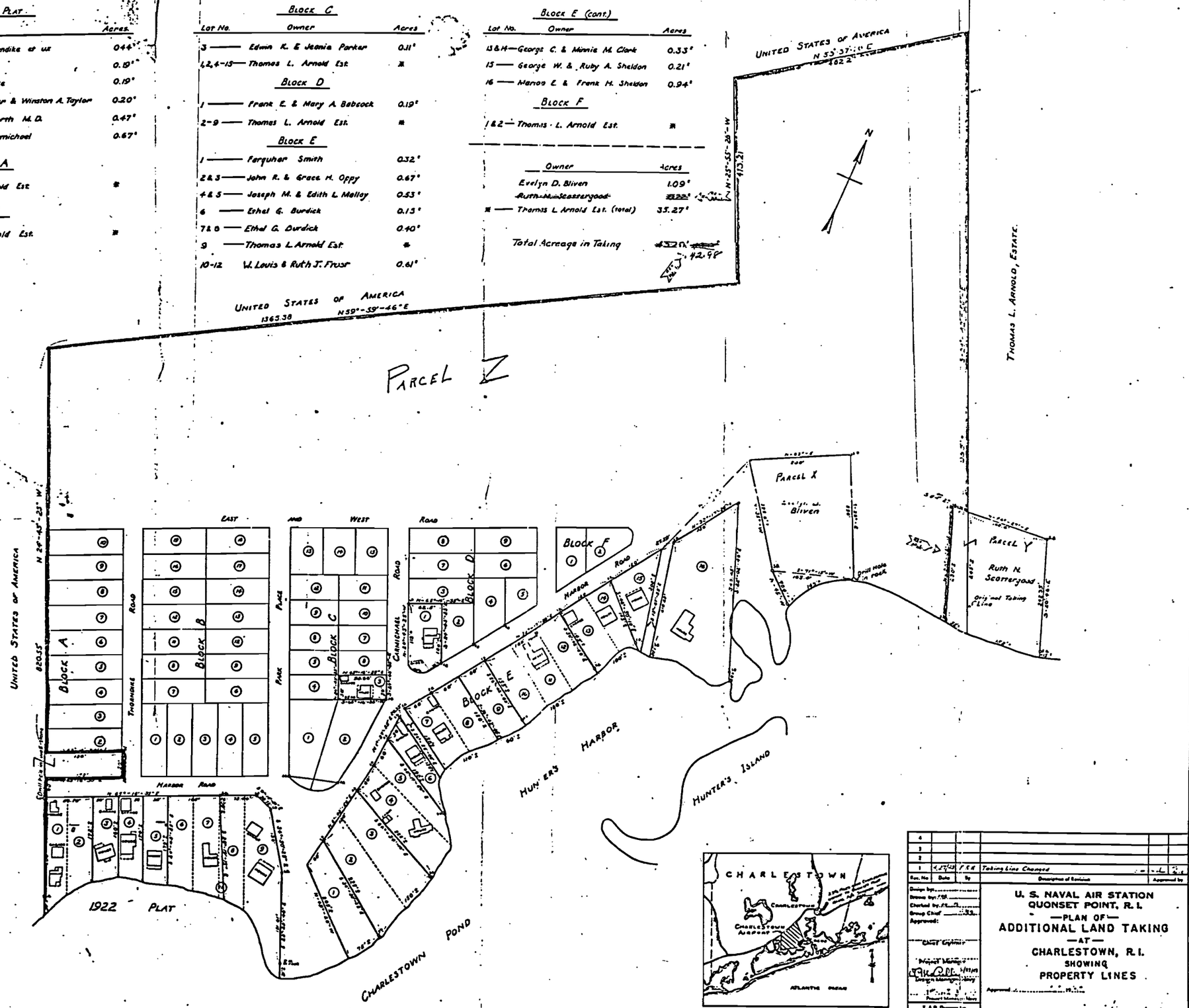
Lot No.	Owner	Acres
13&14	George C. & Minnie M. Clark	0.33*
15	George W. & Ruby A. Sheldon	0.21*
16	Marion E. & Frank H. Sheldon	0.94*

Block F

1&2	Thomas L. Arnold Est.	*

Owner	Acres
Evelyn D. Bliven	1.09*
~~Ruth H. Scatterygood~~	~~[illegible]~~
* Thomas L. Arnold Est. (total)	35.27*

Total Acreage in Taking ~~[illegible]~~ 42.98



Key Plan
Showing part of State of Rhode Island
No Scale

Scale 1"=100'

Rev. No.	Date	By	Description of Revision	Approved by
4				
3				
2				
1	4.27.48	F.E.B.	Taking Line Changed	

Design by: ____
Drawn by: F.E.B.
Checked by: F.E.B.
Group Chief: J.S.
Approved:
Chief Engineer
Project Manager
Design Manager
Project Manager, Navy
F.A.B. Drawing No.
Contract No.
Project No.

U. S. NAVAL AIR STATION
QUONSET POINT, R. I.
—PLAN OF—
ADDITIONAL LAND TAKING
—AT—
CHARLESTOWN, R. I.
SHOWING
PROPERTY LINES

Approved: ____ 19__

Officer in Charge

Quonset Point Navy Dept. Aeronautic No. 7479

G-2

DESCRIPTION OF PROPERTIES IN ADDITIONAL LAND TAKING AT CHARLESTOWN, RHODE ISLAND.

To Accompany Navy Dept. Drawing - Accession 7479

Description of Land of Justus P. Thorndike et ux, located at Hunter's Harbor, Charlestown, R. I.

Designated on plan as Lots No. 1 and No. 2, 1922 Plat.

Beginning at a point on the North shore of Charlestown Pond where the Easterly line of land of the United States of America meets the shore of said Pond; thence N24°-43'-25"W, 39'±, along land of the United States of America, to a drill hole in a stone bound on the shore of said Pond; thence continuing along land of the United States of America N24°-43'-25"W 200', partly along a stone wall, to a drill hole in the base rock of a stone wall; thence N65°-16'-35"E, 96.76', to land of David E. Mills; thence S24°-43'-25"E, 172'±, along land of said David E. Mills, to the shore of said Charlestown Pond; thence Southwesterly along the shore of said Pond to the point of beginning.

Containing 0.44 acres more or less.

(B)

DESCRIPTION OF PROPERTIES IN ADDITIONAL LAND TAKING AT CHARLESTOWN, RHODE ISLAND.

TO Accompany Navy Dept. Drawing - Accession 7479

Description of land of David E. Mills, located at Hunter's Harbor, Charlestown, R. I. Designated on plan as Lot No. 3, 1922 Plat.

Beginning at the Northwesterly corner of said land which point is N65°-16'-35"E, 96.76' from a drill hole in the base rock of a stone wall on line between lands of the United States of America and Justus P. Thorndike et ux.; thence N65°-16'-35"E, 50', to land of George F. White; thence S24°-43'-25"E, 160'± along land of said George F. White to the shore of Charlestown Pond; thence Southwesterly following the shore of said Pond to the Southeast corner of land of Justus P. Thorndike et ux; thence N24°-43'-25"W, 172'± to the point of beginning.

Containing 0.19 acres more or less.

REPRODUCED AT THE NATIONAL ARCHIVES

DETERMINED TO BE AN
ADMINISTRATIVE MARKING
E.O. 12065, Section 6-102
By ____ NARS, Date 7/16/97

DESCRIPTION OF PROPERTIES IN ADDITIONAL LAND TAKING AT CHARLESTOWN, RHODE ISLAND.

To Accompany Navy Dept. Drawing - Accession 7479

Description of land of George F. White, located at Hunter's Harbor, Charlestown, R. I. Designated on plan as Lot No. 4, 1922 Plat.

Beginning at the Northwesterly corner of said land which point is N65°-16'-35"E, 146.76' from a drill hole in the base rock of a stone wall on line between lands of the United States of America and Justus P. Thorndike et ux; thence N65°-16'-35"E, 50' to land of Walter L. Gardner and Winston A. Taylor; thence S24°-43'-25"E, 174'± along land of said Walter L. Gardner and Winston A. Taylor to the shore of Charlestown Pond; thence Westerly along the shore of said Pond to the Southeast corner of land of David E. Mills; thence N24°-43'-25"W, 160'± along land of said David E. Mills to the point of beginning.

Containing 0.19 acres more or less.

DESCRIPTION OF PROPERTIES IN ADDITIONAL LAND TAKING AT CHARLESTOWN, RHODE ISLAND.

To Accompany Navy Dept. Drawing - Accession 7479

Description of land of Walter L. Gardner and Winston A. Taylor, located at Hunter's Harbor, Charlestown, R. I. Designated on plan as Lot No. 5, 1922 Plat.

Beginning at the Northwesterly corner of said land, which point is N65°-16'-35"E, 196.76' from a drill hole in the base rock of a stone wall on line between lands of the United States of America and Justus P. Thorndike et ux; thence N65°-16'-35"E, 50', to land of Milton Duckworth, M.D.; thence S24°-43'-25"E, 179'± along land of said Milton Duckworth, M.D., to the shore of Charlestown Pond; thence Westerly along the shore of said Pond to the Southeast corner of land of George F. White; thence N24°-43'-25"W, 174'± along land of said George F. White to the point of beginning.

Containing 0.20 acres more or less.

(E)

DESCRIPTION OF PROPERTIES IN ADDITIONAL LAND TAKING AT CHARLESTOWN, RHODE ISLAND.

To Accompany Navy Dept. Drawing - Accession 7479

Description of land of Milton Duckworth, M.D., located at Hunter's Harbor, Charlestown, R. I. Designated on plan as Lots No. 6, No. 7, and No. 7A, 1922 Plat.

Beginning at the Northwesterly corner of said land, which point is N65°-16'-35"E, 246.76' from a drill hole in the base rock of a stone wall on line between lands of the United States of America and Justus P. Thorndike, et ux; thence N65°-16'-35"E, 100' to a drill hole in a stone bound at land of Welcome S. Carmichael; thence S28°-19'-15"E, 209'± along land of said Welcome S. Carmichael to the shore of Charlestown Pond; thence Westerly along the shore of said Pond to the Southeast corner of land of Walter L. Gardner and Winston A. Taylor; thence N24°-43'-25"W, 179'± along land of said Walter L. Gardner and Winston A. Taylor to the point of beginning.

Containing 0.47 acres more or less.

DESCRIPTION OF PROPERTIES IN ADDITIONAL LAND TAKING AT CHARLESTOWN, RHODE ISLAND.

To Accompany Navy Dept. Drawing - Accession 7479

Description of land of Welcome S. Carmichael, located at Hunter's Harbor, Charlestown, R. I. Designated on plan as Lots No. 8 and No. 9, 1922 Plat.

Beginning at the Northwesterly corner of said land, which point is a drill hole in a stone bound located N65°-16'-35"E, 346.76' from a drill hole in the base rock of a stone wall on line between lands of the United States of America and Justus P. Thorndike, et ux; thence N65°-16'-35"E, 73.44' to a drill hole in a stone bound; thence S71°-14'-40"E, 38.72' to a drill hole in a stone bound; thence S34°-50'-25"E, 130' to a drill hole in a stone bound; thence S23°-29'-40"E, 181.01' to a drill hole in a rock near the shore of Charlestown Pond; thence S23°-29'-40"E, 31'± to the shore of said Charlestown Pond; thence Northwesterly along the shore of said Pond to the Southeast corner of land of Milton Duckworth, M.D.; thence N28°-19'-15"W, 209'± to the point of beginning.

Containing 0.67 acres more or less.

DESCRIPTION OF PROPERTIES IN ADDITIONAL LAND TAKING AT CHARLESTOWN, RHODE ISLAND

To Accompany Navy Dept. Drawing - Accession 7479.

Description of land of Edwin K. and Jeanie Parker, located at Hunter's Harbor, Charlestown, R.I. Designated on plan as Lot No. 3, Block C.

Beginning at the center of a drill hole in a stone bound at the intersection of the Westerly side of Carmichael Road with the Northerly side of Harbor Road; thence S65°-16'-35"W, 95.66'; thence N24°-43'-25"W, 50.00'; thence N65°-16'-35"E, 95.66' to the Westerly side of Carmichael Road; the last three courses being along land of Thomas L. Arnold, Estate; thence S24°-43'-25"E, 50.00' along the Westerly side of Carmichael Road to the place of beginning.

Containing 0.11 acres more or less.

(H)

DESCRIPTION OF PROPERTIES IN ADDITIONAL LAND TAKING AT CHARLESTOWN, RHODE ISLAND

To Accompany Navy Dept. Drawing - Accession 7479.

Description of land of Frank E. and Mary A. Babcock, located at Hunter's Harbor, Charlestown, R. I. Designated on plan as Lot No. 1, Block D.

Beginning at the Northwesterly corner of said land at a drill hole in a stone bound on the Easterly side of Carmichael Road; thence N65°-16'-35"E, 62.5' along land of Thomas L. Arnold, Estate; thence S24°-43'-25"E, 120' more or less along land of Thomas L. Arnold, Estate to a drill hole in a stone bound in the Northerly side of Harbor Road; thence Southwesterly along the Northerly side of Harbor Road 30' more orless; thence following a curve to the right of radius 25' a distance of 50' more or less to the Easterly side of Carmichael Road; thence N24°-43'-25"W, 115' more or less along the Easterly side of Carmichael Road to the place of beginning.

Containing 0.19 acres more or less.

DESCRIPTION OF PROPERTIES IN ADDITIONAL LAND TAKING AT CHARLESTOWN, RHODE ISLAND.

To Accompany Navy Dept. Drawing - Accession 7479

Description of land of Ferquhar Smith, located at Hunter's Harbor, Charlestown, R. I. Designated on plan as Lot No. 1, Block E.

Beginning at the Northeasterly corner of said land at a drill hole in a stone bound in the Southerly side of Harbor Road, so called, which point is also the Northwesterly corner of land of John R. and Grace H. Oppy; thence S54°-30'-25"E, along land of said John R. and Grace H. Oppy a distance of 228' more or less through the center of a drill hole in a stone bound, on the shore of Charlestown Pond, to the salt water; thence Southwesterly 75' more or less along the shore of Charlestown Pond; thence N49°-20'W, 205' more or less; thence N8°-02'-50"E, 60' more or less to the place of beginning.

Containing 0.32 acres more or less.

DESCRIPTION OF PROPERTIES IN ADDITIONAL LAND TAKING AT CHARLESTOWN, RHODE ISLAND.

To Accompany Navy Dept. Drawing - Accession 7479

Description of land of John R. and Grace H. Oppy, located at Hunter's Harbor, Charlestown, R. I. Designated on plan as Lots No. 2 and No. 3, Block E.

Beginning at the Northwesterly corner of said land at a drill hole in a stone bound on the Southerly side of Harbor Road, so-called, which point is the Northeasterly corner of land of Farquhar Smith; thence N8°-02'-50"E, along the Southerly side of said Harbor Road, 120.00' to a drill hole in a stone bound at the Northwesterly corner of land of Joseph M. and Edith L. Malloy; thence S64°-34'-10"E along land of said Joseph M. and Edith L. Malloy, a distance of 228' more or less through the center of a drill hole, in a stone bound, on the shore of Charlestown Pond, to the salt water; thence Southwesterly along the shore of Charlestown Pond, 150' more or less to the Southeasterly corner of land of Farquhar Smith; thence N54°-30'-25"W through the center of a drill hole in a stone bound on the shore of Charlestown Pond, a distance of 228' more or less along land of said Farquhar Smith to the place of beginning.

Containing 0.67 acres more or less.

DESCRIPTION OF PROPERTIES IN ADDITIONAL LAND TAKING AT CHARLESTOWN, RHODE ISLAND.

To accompany Navy Dept. Drawing - Accession 7479

Description of land of Joseph M. and Edith L. Malloy, located at Hunter's Harbor, Charlestown, R. I. Designated on plan as Lots No. 4 and No. 5, Block E.

Beginning at the Northwesterly corner of said land at a drill hole in a stone bound on the Southerly side of Harbor Road, so called, which point is the Northeasterly corner of land of John R. and Grace H. Oppy; thence N8°-02'-50"E, 60.00' along the Southerly side of Harbor Road to a drill hole in a stone bound; thence N1°-27'-55"E, 60.00' along the Southerly side of said Harbor Road to a drill hole in a stone bound at the Northwesterly corner of land of Ethel G. Burdick; thence S60°-17'-50"E along land of said Ethel G. Burdick a distance of 190' more or less through the center of a drill hole, in a stone bound in the shore of Charlestown Road, to the salt water; thence Southerly along the shore of Charlestown Pond, to the Southeasterly corner of land of John R. and Grace H. Oppy; thence N64°-34'-10"W, through the center of a drill hole in a stone bound on the shore of Charlestown Pond, a distance of 228' more or less along land of said John R. and Grace H. Oppy to the place of beginning.

Containing 0.53 acres more or less.

DESCRIPTION OF PROPERTIES IN ADDITIONAL LAND TAKING AT CHARLESTOWN, RHODE ISLAND.

To accompany Navy Dept. Drawing - Accession 7479.

Description of land of Ethel G. Burdick, located at Hunter's Harbor, Charlestown, R. I. Designated on plan as Lots No. 6, No. 7, and No. 8, Block E.

Lot No. 6, bounded and described as follows:-

Beginning at the Northwesterly corner of said land at a drill hole in a stone bound on the Southerly side of Harbor Road, so called, which point is the Northeasterly corner of land of Joseph M. and Edith L. Malloy; thence N1°-27'-55"E, 50.00' along the Southerly side of said Harbor Road to a drill hole in a stone bound on the Westerly side of a right-of-way from Harbor Road to the shore of Charlestown Pond; thence S56°-58'-40"E, 150' more or less along the Westerly side of said right-of-way to the shore of Charlestown Pond; thence Southerly along the shore of said Pond to the Southeasterly corner of land of Joseph M. and Edith L. Malloy; thence N60°-17'-50"W, through the center of a drill hole in a stone bound on the shore of Charlestown Pond, a distance of 190' more or less along land of said Joseph M. and Edith L. Malloy, to the place of beginning.

Containing 0.15 acres more or less.

Lots No. 7 & No. 8 bounded and described as follows:-

Beginning at the Northwesterly corner of said land at a drill hole in a stone bound on the Southerly side of Harbor Road, so called, and on the Easterly side of a right-of-way from Harbor Road to Charlestown Pond; thence N33°-17'-20"E, 60.00' along the Southerly side of Harbor Road to a drill hole in a stone bound; thence continuing N33°-17'-20"E, 60.00', along the Southerly side of Harbor Road to the Northwesterly corner of land of Thomas L. Arnold, Estate; thence S56°-42'-40"E, 150' more or less along land of said Thomas L. Arnold, Estate, to the shore of Charlestown Pond; thence Southerly 110' more or less along the shore of said Pond to the Easterly side of a right-of-way from Harbor Road to Charlestown Pond; thence N56°-58'-40"W, 150' more or less along the Easterly side of said right-of-way to the place of beginning.

Containing 0.40 acres more or less.

(M)

DESCRIPTION OF PROPERTIES IN ADDITIONAL LAND TAKING AT CHARLESTOWN, RHODE ISLAND.

To Accompany Navy Dept. Drawing - Accession 7479

Description of land of W. Louis and Ruth J. Frost, located at Hunter's Harbor, Charlestown, R. I. Designated on plan as Lots No. 10, No. 11, and No. 12, Block E.

Beginning at the Northwesterly corner of said land, at a drill hole in a stone bound on the Southerly side of Harbor Road so called; thence N33°-17'-20"E, 180.00' along the Southerly side of Harbor Road to a drill hole in a stone bound at the Northwesterly corner of land of George C. and Minnie M. Clark; thence S56°-42'-40"E along land of said George C. and Minnie M. Clark a distance of 143' more or less through the center of a drill hole, in a stone bound on the shore of Charlestown Pond, to the salt water; thence Southerly along the shore of said Pond 180' more or less; thence N56°-42'-40"W, through the center of a drill hole in a stone bound on the shore of Charlestown Pond, a distance of 155' more or less along land of Thomas L. Arnold, Estate, to the place of beginning.

Containing 0.61 acres more or less.

(N)

DESCRIPTION OF PROPERTIES IN ADDITIONAL LAND TAKING AT CHARLESTOWN, RHODE ISLAND.

To Accompany Navy Dept. Drawing - Accession 7479

Description of land of George C. and Minnie M. Clark, located at Hunter's Harbor, Charlestown, R.I. Designated on plan as Lots No. 13 and No. 14, Block E.

Beginning at the Northwesterly corner of said land, at a drill hole in a stone bound on the Southerly side of HArbor Road, so called, which point is the Northeasterly corner of land of W. Louis and Ruth J. Frost; thence N33°-17'-20"E, 120.00' along the Southerly side of said Harbor Road to a drill hole in a stone bound at the Northwesterly corner of land of George W. and Ruby A. Sheldon; thence S46°-50'-10"E, along land of said George W. and Ruby A. Sheldon a distance of 145' more or less through the center of a drill hole, in a stone bound on the shore of Charlestown Pond, to the salt water; thence Southwesterly along the shore of said Pond, 100' more or less to the Southeasterly corner of land of W. Louis and Ruth J. Frost; thence N56°-42'-40"W, through the center of a drill hole in a stone bound on the shore of Charlestown Pond, a distance of 143' more or less, along land of W. Louis and Ruth J. Frost, to the place of beginning.

Containing 0.33 acres more or less.

DESCRIPTION OF PROPERTIES IN ADDITIONAL LAND TAKING AT CHARLESTOWN, RHODE ISLAND.

To Accompany Navy Dept. Drawing - Accession 7479 .

Description of land of George W. and Ruby A. Sheldon, located at Hunter's Harbor, Charlestown, R. I., Designated on plan as Lot 15, Block E.

Beginning at the Northwesterly corner of said land at a drill hole in a stone bound on the Southerly side of Harbor Road, so called, which point is the Northeasterly corner of land of George C. and Minnie M. Clark; thence N33°-17'-20"E, 120.00' along the Southerly side of said Harbor Road to the Westerly side of a right-of-way from Harbor Road to the salt water; thence S13°-47'-55"E, 208' more or less along the Westerly side of said right-of-way to the shore of Charlestown Pond; thence Southwesterly along the shore of said Pond to the Southeasterly corner of land of George C. and Minnie M. Clark; thence N46°-50'-10"W, through the center of a drill hole in a stone bound on the shore of Charlestown Pond, a distance of 145' more or less, along land of George C. and Minnie M. Clark, to the plan of beginning.

Containing 0.21 acres more or less.

(P)

DESCRIPTION OF PROPERTIES IN ADDITIONAL LAND TAKING AT CHARLESTOWN, RHODE ISLAND.

To Accompany Navy Dept. Drawing - Accession 7479

Description of land of Marion E. and Frank H. Sheldon, located at Hunter's Harbor, Charlestown, R. I. Designated on plan as Lot No. 16, Block E.

Beginning at a drill hole in a stone bound in the Southeasterly side of Harbor Road, 27.39' Northeasterly of the Northeasterly corner of land of George W. and Ruby A. Sheldon and on the Easterly side of a right-of-way from Harbor Road to the salt water; thence N33°-17'-20"E, 150.00' to a drill hole in a stone bound; thence S22°-02'-40"E, 340.45' to a drill hole in a stone bound; thence continuing in the same straight line 20' more or less until it intersects the shore line at Charlestown Pond; thence Westerly along the shore of said Pond to the Easterly side of a right-of-way from Harbor Road to the salt water; thence N13°-47'-55"W, 20' more or less to a drill hole in a stone bound in the Easterly line of said right-of-way; thence N13°-47'-55"W, 210.29' along the Easterly side of said right-of-way to the place of beginning.

Containing 0.94 acres more or less.

DESCRIPTION OF PROPERTIES IN ADDITIONAL LAND TAKING AT CHARLESTOWN, RHODE ISLAND.

To Accompany Navy Dept. Drawing - Accession 7479

Description of land of Evelyn D. Bliven, located at Hunter's Harbor, Charlestown, R. I.

PARCEL - X

Beginning at the Northwesterly corner of said land, which point is N19°E, 250' from the Northeasterly corner of land of George W. and Ruby A. Sheldon, designated on plan as Lot No.15, Block E; thence N63°E, 200' to the center of a drill hole in a stone bound; thence S26°E, 250' to a drill hole in a rock on the shore of Charlestown Pond; thence Southwesterly along the shore of said Pond, 145' more or less; thence N49°W, through the center of a drill hole in a stone bound on the shore of Charlestown Pond a distance of 70.4' more or less to the center of a drill hole in a stone bound; thence N35°W, 228.6' more or less to the place of beginning.

Containing 1.09 acres more or less.

(R)

DESCRIPTION OF PROPERTIES IN ADDITIONAL LAND TAKING AT CHARLESTOWN, RHODE ISLAND

To Accompany Navy Dept. Drawing - Accession 7479.

Description of part of land of Ruth N. Scattergood, located at Hunter's Harbor, Charlestown, R. I.

Beginning at the center of a drill hole in a stone bound at the Northwesterly corner of said property; thence N84°-27'E, 32.3'; thence S24°-42'-56"E, 245' more or less, along the land of Ruth N. Scattergood, to the shore of Charlestown Pond; thence Westerly along the shore of said Pond, 52' more or less; thence N20°-44'W through the center of a drill hole in a stone bound on the shore of Charlestown Pond a distance of 230' more or less to the place of beginning.

Containing 0.22 acres more or less.

DESCRIPTION OF PROPERTIES IN ADDITIONAL LAND TAKING AT CHARLESTOWN, RHODE ISLAND.

To Accompany Navy Dept. Drawing - Accession 7479.

Description of land of Thomas L. Arnold, Estate, located at Hunter's Harbor, Charlestown, R. I.

Beginning at the Southwesterly corner of said land at a drill hole in the base rock of a stone wall on the Easterly line of land of the United States of America; thence N24°-43'-25"W, 40' along a stone wall; thence N65°-16'-35"E, 150.00'; thence N24°-43'-25"W, 50.00'; thence S65°-16'-35"W, 150.00' to a stone wall; thence N24°-43'-25"W, 820.55', partly along a stone wall; thence N59°-59'-46"E, 1365.38'; thence N25°-55'-28"W, 413.21'; thence N53°-37'-20"E, 482.27'; the last eight courses being along land of the United States of America; thence S24°-42'-56"E, 955' more or less along other land of Thomas L. Arnold, Estate, to land of Ruth N. Scattergood; thence S84°-27'W, 32.3' to a drill hole in a stone bound; thence S20°-44'E, 230' more or less, through a drill hole in a stone bound, on the shore of Charlestown Pond, to the salt water; the last two courses being along land of Ruth N. Scattergood; thence Westerly along the shore of Charlestown Pond to a drill hole in a rock at the Southeasterly corner of land of Evelyn D. Bliven; thence N26°W, 250.00' to a drill hole in a stone bound; thence S63°W, 200'; thence S35°E, 228.6' more or less to a drill hole in a stone bound; thence S49°E, 70.4' more or less through a drill hole in a stone bound, on the shore of Charlestown Pond, to the salt water; the last four courses being along land of Evelyn D. Bliven; thence Southwesterly along the shore of Charlestown Pond to the Southeasterly corner of land of Marion E. and Frank H. Sheldon; thence N22°-02'-40"W, 20' more or less to a drill hole in a stone bound near the shore of Charlestown Pond; thence N22°-02'-40"W, 340.45' to a drill hole in a stone bound; thence S33°-17'-20"W, 150.00' to a drill hole in a stone bound; thence S13°-47'-55"E, 210.29' to a drill hole in a stone bound near the shore of Charlestown Pond; thence S13°-47'-55"E, 20' more or less to the shore of Charlestown Pond; the last five courses being along land of Marion E. and Frank H. Sheldon; thence Westerly along the shore of Charlestown Pond to the Southeasterly corner of land of George W. and Ruby A. Sheldon; thence N13°-47'-55"W, 208' more or less along land of George W. and Ruby A. Sheldon; thence S33°-17'-20"W, 420.00' along land of George W. and Ruby A. Sheldon, George C. and Minnie M. Clark, W. Louis and Ruth J. Frost, to a drill hole in a stone bound; thence S56°-42'-40"E, along land of W. Louis and Ruth J. Frost, 155' more or less through a drill hole in a stone bound, on the shore of Charlestown Pond, to the salt water; thence Southerly

(T)

60' more or less along the shore of Charlestown Pond to the Southeasterly corner of land of Ethel G. Burdick; thence N56°-42'-40"W, 150' more or less to the Northeasterly corner of land of Ethel G. Burdick; thence S33°-17'-20"W, 120' to a drill hole in a stone bound; thence S56°-58'-40"E, 150' more or less to the shore of Charlestown Pond; the last three courses being along land of Ethel G. Burdick; thence Southerly along the shore of Charlestown Pond to the Northeasterly corner of the lands of Ethel G. Burdick; thence N56°-58'-40"W, 150' more or less, along land of Ethel G. Burdick to a drill hole in a stone bound; thence S1°-27'-55"W, 110.00', along land of Ethel G. Burdick and land of Joseph M. and Ethel L. Malloy to a drill hole in a stone bound; thence S8°-02'-50"W, 240' more or less along land of Joseph M. and Ethel M. Malloy, John R. and Grace H. Oppy, and Farquhar Smith; thence S49°-20'E, 205' more or less along land of Farquhar Smith to the shore of Charlestown Pond; thence Southerly along the shore of Charlestown Pond, to the Southeasterly corner of land of Welcome S. Carmichael; thence N23°-29'-40"W, 31' more or less to a drill hole in a stone bound near the shore of Charlestown Pond; thence N23°-29'-40"W, 181.01' to a drill hole in a stone bound; thence N34°-50'-25"W, 130.00' to a drill hole in a stone bound; thence N71°-14'-40"W, 38.72' to a drill hole in a stone bound; the last four courses being along land of Welcome S. Carmichael; thence S65°-16'-35"W, 420.20' along lands of Welcome S. Carmichael, Milton Duckworth, M.D., Walter L. Gardner and Winston A. Taylor, George F. White, David E. Mills, and Justus P. Thorndike, et ux, to the place of beginning.

Excepting from the above described land two parcels of land. Lot No. 3, Block C, owned by Edwin K. and Jeanie Parker, containing 0.11 acres more or less; and Lot No. 1, Block D, owned by Frank E. and Mary A. Babcock, containing 0.19 acres more or less.

The above described land of Thomas L. Arnold, Estate, contains 35.27 acres more or less.

ADDRESS REPLY TO
EXECUTIVE OFFICE OF THE SECRETA
AND REFER TO INITIALS
AND No.

NAVY DEPARTMENT
WASHINGTON

NDL/N1-1)
G41-2-GP-4
F-3-3/GC:MP

June 25, 1943

The Honorable,
The Attorney General,
Department of Justice,
Washington, D. C.

Sir:

Reference is made to the condemnation proceedings entitled United States of America v. 43.2 acres of land, more or less, in the Town of Charlestown, Rhode Island, David K. Mills, et al., Misc. No. 197, your file number 33-41-41-15, instituted at the request of the Secretary of the Navy in accordance with letter dated February 12, 1943, to acquire land for the expansion of the outlying airfield at Charlestown, Rhode Island, in connection with the Naval Air Station at Quonset Point, Rhode Island.

It has been determined that it is necessary to redefine the estate to be taken, and to redescribe the lands to be acquired, primarily for the purpose of eliminating the tract owned by Ruth N. Scattergood.

It is, therefore, requested that the petition be amended to conform to the enclosed declaration of taking, and that thereupon the declaration of taking be filed and the enclosed check in the amount of estimated just compensation be deposited with the clerk of the court.

Very truly yours,

James Forrestal
Acting

Encls. (3)
1. Declaration of taking
2. Check
3. Form of receipt

CC: Coml
BuAer
CO, NAS, Quonset Point, R.I.
ROBY

G-3

EXHIBIT "A"

A certain tract or parcel of land situated in the Town of Charlestown, R. I., bounded and described as follows:

Beginning at a point on the North Shore of Charlestown Pond, so called, which point is also the Southeasterly corner of land of the United States of America; thence N. 24° 43' 25" W., 39 feet, more or less, to a drill hole in a stone bound on the bank of said pond; thence N. 24° 43' 25" W., 240.00 feet, partly along a stone wall; thence N. 65° 16' 35" E., 150.00 feet; thence N. 24° 43' 25" W., 50.00 feet; thence S. 65° 16' 35" W., 150.00 feet; thence N. 24° 43' 25" W., 820.55 feet, partly along a stone wall; thence N. 59° 59' 46" E., 1365.38 feet; thence N. 25° 56' 29" W., 413.21 feet; thence N. 53° 57' 20" E., 482.27 feet; the last nine courses being along land of the United States of America; thence S. 24° 42' 56" E., 955 feet, more or less, along land of Thomas L. Arnold Est. to land of Ruth N. Scattergood; thence S. 84° 27' W., 32.5 feet, more or less, to a stone bound; thence S. 20° 44' E., a distance of 230 feet, more or less, through the center of a drill hole in a stone bound on the bank of Charlestown Pond to the shore of said Pond; the last two courses being along land of Ruth N. Scattergood; thence Westerly along the North shore of said Charlestown Pond to the place of beginning.

IN THE DISTRICT COURT OF THE UNITED STATES

FOR THE DISTRICT OF RHODE ISLAND

United States of America, Petitioner, v. 43.2 acres of land, more or less, in the Town of Charlestown, Rhode Island, David M. Mills, et al. Defendants	MISC. NO. 197

DECLARATION OF TAKING

WHEREAS pursuant to the authority of the Second War Powers Act approved March 27, 1942 (Public Law 507, 77th Congress), and the Act of Congress approved August 6, 1942 (Public Law 700, 77th Congress), the above styled condemnation proceeding has been filed in this court seeking to condemn on behalf of the United States of America certain lands;

NOW, THEREFORE, pursuant to the provisions of the Act of Congress approved February 26, 1931 (46 Stat. 1421) I, Acting Secretary of the Navy, do hereby make and cause to be filed this declaration of taking, and by virtue thereof do hereby state that I have selected for acquisition forty two and 98/100 (42.98) acres of land, more or less, in Charlestown, Washington County, Rhode Island , which lands are shown on

map dated March 27, 1942, altered April 27, 1943, entitled "U. S. Naval Air Station, Quonset Point, R. I., Plan of Additional Land Taking at Charlestown, R. I.", attached hereto as Exhibit "B" and made a part hereof. The lands are more particularly described on Exhibit "B", attached hereto and made a part hereof.

And I do declare the lands to be taken under authority of the aforesaid acts of Congress; that the use to which the lands are to be put is for the expansion of the outlying air field at Charlestown, Rhode Island, in connection with the Naval Air Station at Quonset Point, Rhode Island, as authorized by said acts; and that the estate hereby taken in said lands is in fee simple, subject to easements for public utilities.

And I do hereby state that the sum of money estimated by me to be just compensation for all of said lands, improvements thereon and appurtenances thereunto belonging is Eighty-nine Thousand Five Hundred Fifty Eight Dollars ($89,558.00), which is hereby deposited in the registry of the court for the use and benefit of the persons entitled thereto, and the amounts of just compensation for said lands which are hereby taken are shown on Schedule "A", attached hereto and made a part hereof.

I am of the opinion that the ultimate award for the taking of said lands will be within the limits prescribed by Congress.

IN WITNESS WHEREOF, the petitioner, by and through James Forrestal, Acting Secretary of the Navy, acting for and in behalf of the Secretary of the Navy, has caused this declaration of taking to be signed and the seal of the Navy Department to be affixed hereto in the City of Washington,

District of Columbia, this 25th Day of June, 1943.

UNITED STATES OF AMERICA

By_____

James Forrestal
Acting Secretary of the Navy

(SEAL)

SCHEDULE "A"

The names of persons having title to or other interest in the lands described in the within declaration of taking, and the amounts estimated to be fair compensation for each respective ownership, including all improvements thereon, are as follows:

Owner	Parcel No.	Acreage	Estimated Just Compensation
Justice P. & Mabel G. Thorndike	Lots 1&2 1922 Plat	0.44	$ 5,750.00
David E. Mills	Lot 3, 1922 Plat	0.19	5,475.00
Dr. George F. White	Lot 4, 1922 Plat	0.19	5,250.00
Walter L. Gardner and Winston A. Taylor	Lot 5, 1922 Plat	0.20	2,500.00
Milton Duckworth,M.D.	Lots 6,7&7A 1922 Plat	0.47	4,600.00
Welcome S. Carmichael	Lots 8&9 1922 Plat	0.67	7,000.00
Edwin K. & Jeannie Parker	Lot 3, Block C	0.11	2,700.00
Frank E. & Mary A. Babcock	Lot 1, Block D	0.19	1,700.00
Farquhar Smith	Lot 1, Block E	0.22	800.00
John E. and Grace E. Cypy	Lots 2&3, Block E	0.67	1,600.00
Joseph M. & Edith L. Malley	Lots 4&5, Block E	0.53	3,550.00
Ethel G. Burdick	Lots 6,7&8 Block E	0.55	7,700.00
W. Louis & Ruth J. Frost	Lots 10,11, 12,Block E	0.61	6,200.00
George C. & Minnie M. Clark	Lots 13&14, Block E	0.33	5,800.00

Owner	Parcel No.	Acreage	Estimated Fu Compensation
George W. & Ruby A. Sheldon	Lot 15, Block E	0.21	$ 5,150.00
Marion E. and Frank H. Sheldon	Lot 16, Block E	0.94	11,100.00
Evelyn D. Bliven	X	2.09	1,800.00
Thomas L. Arnold Estate	Z	39.27	10,683.00
TOTAL		42.98	$ 89,358.00

42.98

DESCRIPTION OF 45 ACRES OF LAND, MORE OR LESS, LOCATED IN CHARLESTOWN, WASHINGTON COUNTY, RHODE ISLAND (CHARLESTOWN OUTLYING FIELD).

A certain tract or parcel of land situated in the Town of Charlestown, R. I., bounded and described as follows:

Beginning at a point on the North Shore of Charlestown Pond, so called, which point is also the Southeasterly corner of land of the United States of America; thence N. 24° 43' 25" W., 39 feet, more or less, to a drill hole in a stone bound on the the bank of said pond; thence N. 24° 43' 25" W., 240.00 feet, partly along a stone wall; thence N. 65° 16' 35" E., 150.00 feet; thence N. 24° 43' 25" W., 50.00 feet; thence S. 65° 16' 35" W., 150.00 feet; thence N. 24° 43' 25" W., 820.55 feet, partly along a stone wall; thence N. 59° 59' 48" E., 1365.38 feet; thence N. 25° 55' 25" W., 415.21 feet; thence N. 53° 37' 20" E., 482.27 feet; the last nine courses being along land of the United States of America; thence S. 24° 42' 56" E., 955 feet, more or less, along land of Thomas L. Arnold Est. to land of Ruth N. Scattergood; thence S. 84° 27' W., 32.3 feet, more or less, to a stone bound; thence S. 20° 44' E., a distance of 230 feet, more or less, through the center of a drill hole in a stone bound on the bank of Charlestown Pond to the shore of said Pond; the last two courses being along land of Ruth N. Scattergood; thence Westerly along the North shore of said Charlestown Pond to the place of beginning.

Containing 45.0 acres, more or less.

Lots No. 1 and No. 2, 1922 Plat

Beginning at a point on the North shore of Charlestown Pond where the Easterly line of land of the United States of America meets the shore of said Pond; thence N. 24° 43' 25" W., 39 feet, along land of the United States of America, to a drill hole in a stone bound on the shore of said Pond; thence continuing along land of the United States of America N. 24° 43' 25" W., 200 feet, partly along a stone wall, to a drill hole in the base rock of a stone wall; thence N. 65° 16' 35" E., 96.76 feet to land of David N. Mills; thence S. 24° 43' 25" E., 172 feet, along land of said David N. Mills, to the shore of said Charlestown Pond; thence Southwesterly along the shore of said Pond to the point of beginning.

Containing 0.44 acres more or less.

Lot No. 3, 1922 Plat

Beginning at the Northwesterly corner of said land which point is N. 65° 16' 35" E., 96.76 feet from a drill hole in the base rock of a stone wall on line between lands of the United States of America and Justus P. Thorndike et ux.; thence N. 65° 16' 35" E., 50 feet, to land of George F. White; thence S. 24° 43' 25" E., 180 feet along land of said George F. White to the shore of Charlestown Pond; thence Southwesterly following the shore of said Pond to the Southeast corner of land of Justus P. Thorndike et ux.; thence N. 24° 43' 25" W., 172 feet to the point of beginning.

Containing 0.19 acres more or less.

Exhibit "A"

Lot No. 4, 1922 Plat

Beginning at the Northwesterly corner of said land which point is N. 65° 16' 35" E., 146.76 feet from a drill hole in the base rock of a stone wall on line between lands of the United States of America and Justus F. Thorndike et ux.; thence N. 65° 16' 35" E., 50 feet to land of Walter L. Gardner and Winston A. Taylor; thence S. 24° 43' 25" E., 174 feet along land of said Walter L. Gardner and Winston A. Taylor to the shore of Charlestown Pond; thence Westerly along the shore of said Pond to the Southeast corner of land of David E. Mills; thence N. 24° 43' 25" W., 160 feet along land of said David E. Mills to the point of beginning.

Containing 0.19 acres, more or less.

Lot No. 5, 1922 Plat

Beginning at the Northwesterly corner of said land, which point is N. 65° 16' 35" E., 196.76 feet from a drill hole in the base rock of a stone wall on line between lands of the United States of America and Justus F. Thorndike et ux.; thence N. 65° 16' 35" E., 50 feet, to land of Milton Duckworth, M.D.; thence S. 24° 43' 25" E., 179 feet along land of said Milton Duckworth, M.D., to the shore of Charlestown Pond; thence Westerly along the shore of said Pond to the Southeast corner of land of George F. White; thence N. 24° 43' 25" W., 174 feet along land of said George F. White to the point of beginning.

Containing 0.20 acres, more or less.

Lots No. 6, No. 7, and No. 7A, 1922 Plat

Beginning at the Northwesterly corner of said land, which point is N. 65° 16' 35" E., 246.76 feet from a drill hole in the base rock of a stone wall on line between lands of the United States of America and Justus F. Thorndike, et ux.; thence N. 65° 16' 35" E., 100 feet to a drill hole in a stone bound at land of Welcome S. Carmichael; thence S. 25° 19' 15" E., 209 feet along land of said Welcome S. Carmichael to the shore of Charlestown Pond; thence Westerly along the shore of said Pond to the Southeast corner of land of Walter L. Gardner and Winston A. Taylor; thence N. 24° 43' 25" W., 179 feet along land of said Walter L. Gardner and Winston A. Taylor to the point of beginning.

Containing 0.47 acres, more or less.

Lots No. 8 and No. 9, 1922 Plat

Beginning at the Northwesterly corner of said land, which point is a drill hole in a stone bound located N. 65° 16' 35" E., 346.76 feet from a drill hole in the base rock of a stone wall on line between lands of the United States of America and Justus F. Thorndike, et ux.; thence N. 65° 16' 35" E., 75.44 feet to a drill hole in a stone bound; thence S. 71° 14' 40" E., 38.72 feet to a drill hole in a stone bound;

thence S. 34° 50' 25" E., 150 feet to a drill hole in a stone bound; thence S. 25° 29' 40" E., 181.01 feet to a drill hole in a rock near the shore of Charlestown Pond; thence S. 25° 29' 40" E., 21 feet to the shore of said Charlestown Pond; thence Northwesterly along the shore of said Pond to the Southeast corner of land of Milton Duckworth, M.D.; thence N. 28° 19' 15" W., 209 feet to the point of beginning.

Containing 0.67 acres, more or less.

Lot No. 5, Block G.

Beginning at the center of a drill hole in a stone bound at the intersection of the Westerly side of Carmichael Road with the Northerly side of Harbor Road; thence S. 65° 16' 35" W., 95.66 feet; thence N. 24° 43' 25" W., 50.00 feet; thence N. 65° 16' 35" E., 98.66 feet to the Westerly side of Carmichael Road; the last three courses being along land of Thomas L. Arnold, Estate; thence S. 24° 43' 25" E., 50.00 feet along the Westerly side of Carmichael Road to the place of beginning.

Containing 0.11 acres, more or less.

Lot No. 1, Block D

Beginning at the Northwesterly corner of said land at a drill hole in a stone bound on the Easterly side of Carmichael Road; thence N. 65° 16' 35" E., 62.5 feet along land of Thomas L. Arnold, Estate; thence S. 24° 43' 25" E., 120 feet, more or less, along land of Thomas L. Arnold, Estate to a drill hole in a stone bound in the Northerly side of Harbor Road; thence Southwesterly along the Northerly side of Harbor Road 30 feet, more or less; thence following a curve to the right of radius 25 feet a distance of 30 feet, more or less, to the Easterly side of Carmichael Road; thence N. 24° 43' 25" W., 115 feet, more or less, along the Easterly side of Carmichael Road to the place of beginning.

Containing 0.13 acres, more or less.

Lot No. 1, Block H

Beginning at the Northeasterly corner of said land at a drill hole in a stone bound in the Southerly side of Harbor Road, so called, which point is also the Northwesterly corner of land of John R. and Grace H. Oppy; thence S. 34° 30' 25" E., along land of said John R. and Grace H. Oppy a distance of 222 feet, more or less, through the center of a drill hole in a stone bound, on the shore of Charlestown Pond, to the salt water; thence Southwesterly 75 feet, more or less, along the shore of Charlestown Pond; thence N. 49° 30' W., 205 feet, more or less; thence N. 8° 02' 50" E., 60 feet, more or less, to the place of beginning.

Containing 0.52 acres, more or less.

Lots No. 2 and No. 3, Block E

Beginning at the Northwesterly corner of said land at a drill hole in a stone bound on the Southerly side of Harbor Road, so-called, which point is the Northeasterly corner of land of Farquhar Smith; thence N. 8° 02' 50" E., along the Southerly side of said Harbor Road, 120.00 feet to a drill hole in a stone bound at the Northwesterly corner of land of Joseph M. and Edith L. Malloy; thence S. 64° 34' 10" E., along land of said Joseph M. and Edith L. Malloy, a distance of 228 feet, more or less, through the center of a drill hole, in a stone bound, on the shore of Charlestown Pond, to the salt water; thence Southwesterly along the shore of Charlestown Pond, 150 feet, more or less, to the Southeasterly corner of land of Farquhar Smith; thence N. 54° 30' 25" W., through the center of a drill hole in a stone bound on the shore of Charlestown Pond, a distance of 228 feet, more or less, along land of said Farquhar Smith to the place of beginning.

Containing 0.67 acres, more or less.

Lots No. 4 and No. 5, Block E

Beginning at the Northwesterly corner of said land at a drill hole in a stone bound on the Southerly side of Harbor Road, so called, which point is the Northeasterly corner of land of John R. and Grace H. Oppy; thence N. 8° 02' 50" E., 60.00 feet along the Southerly side of Harbor Road to a drill hole in a stone bound; thence N. 1° 27' 55" E., 60.00 feet along the Southerly side of said Harbor Road to a drill hole in a stone bound at the Northwesterly corner of land of Ethel G. Burdick; thence S. 60° 17' 50" E., along land of said Ethel G. Burdick a distance of 190 feet, more or less, through the center of a drill hole in a stone bound in the shore of Charlestown Road, to the salt water; thence Southerly along the shore of Charlestown Pond, to the Southeasterly corner of land of John R. and Grace H. Oppy; thence N. 64° 34' 10" W., through the center of a drill hole in a stone bound on the shore of Charlestown Pond, a distance of 228 feet, more or less, along land of said John R. and Grace H. Oppy to the place of beginning.

Containing 0.53 acres, more or less.

Lots No. 6, No. 7, and No. 8, Block E

Lot No. 6 - Beginning at the Northwesterly corner of said land at a drill hole in a stone bound on the Southerly side of Harbor Road, so called, which point is the Northeasterly corner of land of Joseph M. and Edith L. Malloy; thence N. 1° 27' 55" E., 50.00 feet along the Southerly side of said Harbor Road to a drill hole in a stone bound on the Westerly side of a right-of-way from Harbor Road to the Shore of Charlestown Pond; thence S. 55° 58' 40" E., 150 feet, more or less, along the Westerly side of said right-of-way to the shore of Charlestown Pond; thence Southerly along the shore of said Pond to the Southeasterly corner of land of Joseph M. and Edith L. Malloy; thence N. 60° 17' 50" W.,

through the center of a drill hole in a stone bound on the shore of Charlestown Pond, a distance of 190 feet, more or less, along land of said Joseph M. and Edith L. Malley, to the place of beginning.

Containing 0.15 acres, more or less.

Lots No. 7 & No. 8 - Beginning at the Northwesterly corner of said land at a drill hole in a stone bound on the Southerly side of Harbor Road, so called, and on the Easterly side of a right-of-way from Harbor Road to Charlestown Pond; thence N. 83° 17' 20" E., 60.00 feet along the Southerly side of Harbor Road to a drill hole in a stone bound; thence continuing N. 83° 17' 20" E., 60.00 feet along the Southerly side of Harbor Road to the Northwesterly corner of land of Thomas L. Arnold, Estate; thence S. 56° 42' 40" E., 150 feet, more or less, along land of said Thomas L. Arnold, Estate, to the shore of Charlestown Pond; thence Southerly 110 feet, more or less, along the shore of said Pond to the Easterly side of a right-of-way from Harbor Road to Charlestown Pond; thence N. 56° 56' 40" W., 150 feet, more or less, along the Easterly side of said right-of-way to the place of beginning.

Containing 0.40 acres, more or less.

Lots No. 10, No. 11, and No. 12, Block E

Beginning at the Northwesterly corner of said land, at a drill hole in a stone bound on the Southerly side of Harbor Road so called; thence N. 83° 17' 20" E., 180.00 feet along the Southerly side of Harbor Road to a drill hole in a stone bound at the Northwesterly corner of land of George C. and Minnie M. Clark; thence S. 56° 42' 40" E., along land of said George C. and Minnie M. Clark a distance of 145 feet, more or less, through the center of a drill hole, in a stone bound on the shore of Charlestown Pond, to the salt water; thence Southerly along the shore of said Pond 180 feet, more or less; thence N. 56° 42' 40" W., through the center of a drill hole in a stone bound on the shore of Charlestown Pond, a distance of 158 feet, more or less, along land of Thomas L. Arnold, Estate, to the place of beginning.

Containing 0.61 acres, more or less.

Lots No. 13 and No. 14, Block E

Beginning at the Northwesterly corner of said land, at a drill hole in a stone bound on the Southerly side of Harbor Road, so called, which point is the Northwesterly corner of land of W. Louis and Ruth J. Frost; thence N. 83° 17' 20" E., 180.00 feet along the Southerly side of said Harbor Road to a drill hole in a stone bound at the Northwesterly corner of land of George W. and Ruby A. Sheldon; thence S. 46° 56' 10" E., along land of said George W. and Ruby A. Sheldon a distance of 145 feet, more or less, through the center of a drill hole, in a stone bound on the shore of Charlestown Pond, to the salt water; thence Southwesterly along the shore of said Pond, 100 feet, more or less, to the Southeasterly corner

of land of W. Louis and Ruth J. Frost; thence N. 86° 42' 40" W., through the center of a drill hole in a stone bound on the shore of Charlestown Pond, a distance of 145 feet, more or less, along land of W. Louis and Ruth J. Frost, to the place of beginning.

Containing 0.35 acres, more or less.

Lot 15, Block E

Beginning at the Northwesterly corner of said land at a drill hole in a stone bound on the Southerly side of Harbor Road, so called, which point is the Northeasterly corner of land of George C. and Minnie N. Clark; thence N. 85° 17' 20" E., 150.00 feet along the Southerly side of said Harbor Road to the Westerly side of a right-of-way from Harbor Road to the salt water; thence S. 15° 47' 55" E., 308 feet, more or less, along the Westerly side of said right-of-way to the shore of Charlestown Pond; thence Southwesterly along the shore of said Pond to the Southeasterly corner of land of George C. and Minnie N. Clark; thence N. 46° 50' 10" W., through the center of a drill hole in a stone bound on the shore of Charlestown Pond, a distance of 145 feet, more or less, along land of George C. and Minnie N. Clark, to the place of beginning.

Containing 0.81 acres, more or less.

Lot No. 16, Block E

Beginning at a drill hole in a stone bound in the Southeasterly side of Harbor Road, 97.39 feet Northeasterly of the Northeasterly corner of land of George W. and Ruby A. Sheldon and on the Easterly side of a right-of-way from Harbor Road to the salt water; thence N. 85° 17' 20" E., 150.00 feet to a drill hole in a stone bound; thence S. 28° 02' 40" E., 240.45 feet to a drill hole in a stone bound; thence continuing in the same straight line 20 feet, more or less, until it intersects the shore line at Charlestown Pond; thence Westerly along the shore of said Pond to the Easterly side of a right-of-way from Harbor Road to the salt water; thence N. 15° 47' 55" W., 20 feet, more or less, to a drill hole in a stone bound in the Easterly line of said right-of-way; thence N. 15° 47' 55" W., 210.29 feet along the Easterly side of said right-of-way to the place of beginning.

Containing 0.94 acres, more or less.

Parcel X

Beginning at the Northwesterly corner of said land, which point is N. 19° E., 250 feet from the Northeasterly corner of land of George W. and Ruby A. Sheldon, designated on plan as Lot No. 15, Block E; thence N. 63° E., 200 feet to the center of a drill hole in a stone bound; thence S. 39° E., 250 feet to a drill hole in a rock on the shore of Charlestown Pond; thence South-

westerly along the shore of said Pond, 145 feet, more or less; thence N. 49° W., through the center of a drill hole in a stone bound on the shore of Charlestown Pond a distance of 70.4 feet more or less to the center of a drill hole in a stone bound; thence N. 35° W., 228.6 feet more or less to the place of beginning.

Containing 1.09 acres more or less.

PARCEL X

Beginning at the southwesterly corner of said land at a drill hole in the base rock of a stone wall on the easterly line of land of the United States of America; thence N. 24° 43' 25" W., 40 feet along a stone wall; thence N. 65° 15' 35" E., 150 feet; thence N. 24° 43' 25" W., 50.00 feet; thence S. 65° 16' 35" W., 150.00 feet to a stone wall; thence N. 24° 43' 25" W., 880.55 feet, partly along a stone wall; thence N. 59° 39' 46" E., 1365.38 feet; thence N. 25° 55' 22" W., 415.21 feet; thence N. 53° 57' 20" E., 422.27 feet; the last eight courses being along land of the United States of America; thence S. 24° 42' 56" E., 955 feet more or less along other land of Thomas L. Arnold Estate to land of Ruth N. Scattergood; thence S. 24° 27' W., 32.3 feet to a drill hole in a stone bound; thence S. 20° 44' E., 230 feet more or less through a drill hole in a stone bound on the shore of Charlestown Pond to the salt water; the last two courses being along land of Ruth N. Scattergood; thence westerly along the shore of Charlestown Pond to a drill hole in a rock at the southeasterly corner of land of Evelyn D. Hiven; thence N. 26° W., 250.00 feet to a drill hole in a stone bound; thence S. 65° W., 200 feet; thence S. 35° E., 228.6 feet more or less to a drill hole in a stone bound; thence S. 49° E., 70.4 feet more or less through a drill hole in a stone bound on the shore of Charlestown Pond to the salt water; the last four courses being along land of Evelyn D. Hiven; thence southwesterly along the shore of Charlestown Pond to the southeasterly corner of land of Marion E. and Frank H. Sheldon; thence N. 22° 02' 40" W., 20 feet more or less to a drill hole in a stone bound near the shore of Charlestown Pond; thence N. 22° 02' 40" W., 340.45 feet to a drill hole in a stone bound; thence S. 33° 17' 20" W., 150.00 feet to a drill hole in a stone bound; thence S. 13° 47' 55" E., 210.29 feet to a drill hole in a stone bound near the shore of Charlestown Pond; thence S. 13° 47' 55" E., 20 feet more or less to the shore of Charlestown Pond; the last five courses being along land of Marion E. and Frank H. Sheldon; thence westerly along the shore of Charlestown Pond to the southeasterly corner of land of George W. and Ruby A. Sheldon; thence N. 13° 47' 55" W., 208 feet more or less along land of George W. and Ruby A. Sheldon; thence S. 33° 17' 20" W., 420.00 feet along land of George W. and Ruby A. Sheldon, George C. and Minnie M. Clark, W. Louis and Ruth J. Frost to a drill hole in a stone bound; thence S. 56° 42' 40" E., along land of W. Louis and Ruth J. Frost 155 feet more or less through a drill hole in a stone bound on the shore of Charlestown Pond to the salt water; thence

southerly 60 feet more or less along the shore of Charlestown Pond to the southeasterly corner of land of Ethel G. Burdick; thence S. 56° 42' 40" W., 150 feet more or less to the northeasterly corner of land of Ethel G. Burdick; thence S. 33° 17' 20" W., 120 feet to a drill hole in a stone bound; thence S. 56° 58' 40" E., 150 feet more or less to the shore of Charlestown Pond; the last three courses being along land of Ethel G. Burdick; thence southerly along the shore of Charlestown Pond to the southeasterly corner of the lands of Ethel G. Burdick; thence N. 56° 58' 40" W., 150 feet more or less along land of Ethel G. Burdick to a drill hole in a stone bound; thence S. 1° 27' 55" W., 110.00 feet along land of Ethel G. Burdick and land of Joseph M. and Ethel L. Malley to a drill hole in a stone bound; thence S. 8° 02' 50" W., 240 feet more or less along land of Joseph M. and Ethel M. Malley, John R. and Grace H. Oppy and Farquhar Smith; thence S. 49° 20' E., 205 feet more or less along land of Farquhar Smith to the shore of Charlestown Pond; thence southerly along the shore of Charlestown Pond, to the southeasterly corner of land of Welcome S. Carmichael; thence N. 22° 29' 40" W., 21 feet more or less to a drill hole in a stone bound near the shore of Charlestown Pond; thence N. 22° 29' 40" W., 181.01 feet to a drill hole in a stone bound; thence N. 54° 50' 25" W., 130.00 feet to a drill hole in a stone bound; thence N. 71° 14' 40" W., 58.72 feet to a drill hole in a stone bound; the last four courses being along land of Welcome S. Carmichael; thence S. 65° 16' 35" W., 490.20 feet along lands of Welcome S. Carmichael, Milton Bushworth, M. D., Walter L. Gardner and Winston A. Taylor, George F. White, David N. Mills, and Justin F. Thorndike, et ux, to the place of beginning.

EXCEPTING THEREFROM the above described land two parcels of land. Lot No. 3 Block C. owned by Edwin K. and Jennie Parker, containing 0.11 acres more or less; and Lot No. 1, Block D, owned by Frank E. and Mary A. Babcock, containing 0.19 acres more or less.

The above described land of Thomas L. Arnold Estate, contains 55.27 acres more or less.

ND1/N1-13
F-5-7/RFM/fh
C41-2-QP-4

JUL 24 1943

Honorable J. Howard McGrath,
Governor of Rhode Island,
Providence, Rhode Island.

Sir:

The United States of America became vested with a valid title to approximately 43 acres of land in the Town of Charlestown, Washington County, Rhode Island, on July 9, 1943, pursuant to a declaration of taking filed on that date in the United States District Court for the District of Rhode Island, in the case of United States of America v. 43.2 acres of land in the Town of Charlestown, Rhode Island, David E. Mills, et al., Misc. No. 197. This land, which is more fully and particularly described in the attached Exhibit "A", was acquired for the purpose of expanding the Naval Auxiliary Air Station at Charlestown, Rhode Island.

In accordance with the provisions of the Act of Congress approved October 9, 1940 (54 Stat., 1083), jurisdiction over the aforesaid land is hereby accepted by the Navy Department on behalf of the United States of America in the manner and form granted and ceded by an Act of the General Assembly of Rhode Island of 1896, as amended (Secs. 1, 2 and 9, Chap. 2, Gen. Laws of R. I., 1938).

There are enclosed two carbon copies of this letter of acceptance. Their return in the enclosed franked envelope with your endorsement thereon of the time of the receipt of this acceptance will be appreciated. One copy will be forwarded to the Attorney General of the United States and the other retained in the files of the Navy Department.

Very truly yours,

James Forrestal

[illegible]

Encl.
1. HW 2 carbon copies of ltr

CC: AttyGen
Com 1
BuAero
C.O. US NAAF, Charlestown, R.I.
C.O. US NAS, Quonset Point, R.I.

Original of this letter received:

Date: _____

_____
Governor

ND1/N1-13
F-5-7/RFM/fh
C41-2-QP-3

Honorable J. Howard McGrath,
Governor of Rhode Island,
Providence, Rhode Island.

JUL 24 1943

Sir:

The United States of America became vested with a valid title to approximately 589 acres of land in Washington County, Rhode Island, on January 6, 1943, pursuant to a declaration of taking filed on that date in the United States District Court for the District of Rhode Island, in the case of United States of America v. 589 acres of land in Washington County, Rhode Island, Laura W. Prosser, et al., Misc. No. 150. This land, which is more fully and particularly described in the attached Exhibit "A", was acquired for the establishment of a Naval Auxiliary Air Station at Charlestown, Rhode Island, for use in connection with the U. S. Naval Air Station at Quonset Point, Rhode Island.

In accordance with the provisions of the Act of Congress approved October 9, 1940, (54 Stat., 1083) jurisdiction over the aforesaid land is hereby accepted by the Navy Department on behalf of the United States of America in the manner and form granted and ceded by an Act of the General Assembly of Rhode Island of 1896, as amended, (Secs. 1, 2 and 9, Chap. 2, Gen. Laws of R. I., 1938).

There are enclosed two carbon copies of this letter of acceptance. Their return in the enclosed franked envelope with your endorsement thereon of the time of the receipt of this acceptance will be appreciated. One copy will be forwarded to the Attorney General of the United States and the other retained in the files of the Navy Department.

Very truly yours,

James Forrestal Acting

Encl.
1. HW 2 carbon copies of ltr

Original of this letter received:

Date: _____

CC: AttyGen
Com 1
BuAero
C.O., USNAAF, Charlestown, R.I.
C.O., US NAS, Quonset Point, R.I.

_____
Governor

EXHIBIT "A"

All that certain land situate in the Town of Charlestown, Washington County, Rhode Island, described as follows:

Beginning at the point of intersection of the southerly right-of-way line of United States Highway No. 1, and the line dividing the lands of the Thomas L. Arnold Estate and the Isaac T. Prosser Estate; thence with the southerly right-of-way line of said United States Highway No. 1, the following courses and distances, south 64° 49' 51" west 848.46 feet to a point; thence south 69° 11' 58" west 520.95 feet; thence south 70° 18' 38" west 650.00 feet; thence south 71° 16' 18" west 326.18 feet to a point; thence leaving said Highway south 15° 03' 14" east, a distance of 1279.81 feet more or less to the mean high-water line of Foster's Cove; thence in a general southerly direction with the meanders of the mean high-water line of said Foster's Cove to the intersection of said mean high-water line and the mean high-water line of Charlestown Pond; thence in a general easterly direction with the meanders of said mean high-water line of Charlestown Pond to the point of intersection of said mean high-water line and the southerly extension of the line between the Thomas L. Arnold Estate and the Isaac T. Prosser Estate thence N 24° 43' 25" W. with said line for a distance of 1150.55 feet, passing through a stone bound at approximately 40 feet; thence leaving said line north 59° 59' 46" east, a distance of 1365.38 feet to a point; thence north 25° 55' 28" west, a distance of 413.21 feet to a point; thence north 53° 37' 20" east, a distance of 482.27 feet to a point; thence north 24° 42' 56" west, a distance of 1251.55 feet to a point; thence north 41° 43' 23" west, a distance of 139.29 feet to a point; thence North 24° 45' 34" west, a distance of 1915.72 feet to a point; thence north 53° 41' 40" west a distance of 53.00 feet to a point; thence north 60° 41' 03" west a distance of 44.54 feet to a point on the southerly right-of-way line of said United States Highway No. 1; thence with said southerly right-of-way line, the following courses and distances, south 56° 47' 10" west 437.47 feet to a point; thence south 60° 33' 53" west 321.50 feet to a point; thence south 62° 38' 53" west 977.42 feet to the point of beginning, excepting therefrom that certain Tract known as the Cemetery, being a strip of land lying adjacent to the aforementioned right-of-way line and measuring approximately 500 feet on the northwesterly and southeasterly lines, 95.5 feet on the southwesterly line and 106.5 feet on the northeasterly line and containing after said exception approximately 560.62 acres.

All of that certain parcel of land known as Hunter's Harbor Lot more particularly described as follows: commencing at a stone bound set in the southerly extension of the line between the lands of said Thomas L. Arnold Estate and the Isaac T. Prosser Estate, said stone being approximately 40 feet, northwesterly along said line from the mean high-water line of Charlestown Pond; thence north 24° 43' 25" west 240 feet to the true point of beginning; thence at right angles a distance of 150 feet; thence at right angles, a distance of 50 feet; thence at right angles, a distance of 150 feet to said southerly extension of the line between the lands of said Arnold and Prosser Estates; thence south 24° 43' 25" east, a distance of 50 feet to the point of beginning, containing 0.17 acres, more or less.

That certain parcel of land bounded southerly by the Atlantic Ocean, known also as Block Island Sound, westerly by lands formerly of James S. Kenyon, northerly by Charlestown Pond and easterly by the land formerly owned by the Hoxies and McDonald, now the Thomas L. Arnold Estate, more particularly described as follows:

Beginning at a point in the line common to the lands of the James S. Kenyon Estate and the Isaac T. Prosser Estate and the mean high-water line of Charlestown Pond; thence generally northerly, easterly and southerly with the meanders of said mean high water line to the western boundary of the Thomas L. Arnold Estate; thence south 9° 37' 35.6" east crossing the Town of Charlestown Highway, a distance of 575.feet, more or less, to the mean high-water line of the Atlantic Ocean, thence in a southwesterly direction with the meanders of said mean high-water line to the easterly line of James S. Kenyon Estate; thence north 9° 44' 50.6" west with said line and crossing the Town of Charlestown Highway 475 feet, more or less, to the point of beginning, excepting therefrom the highway right-of-way included within these boundaries and containing in addition portions of two small peninsulas and several small islands lying between the prolongation northerly of the easterly and westerly lines of the aforementioned tract and containing after said exception 27.5 acres, more or less.

GENERAL SERVICES ADMINISTRATION

Region 1
Post Office and Courthouse
Boston, Massachusetts 02109

July 16, 1970

RE

Mr. Leslie L. Glasgow, Assistant Secretary
United States Department of the Interior
Office of the Secretary
Washington, D. C. 20240

Dear Mr. Glasgow:

This refers to your request of March 30, 1970, for the transfer to the Department of the Interior of a 27.5 acre parcel of unimproved land, comprising a portion of the Naval Auxiliary Landing Field, Charlestown, Rhode Island (N-RI-460), for wildlife conservation purposes, pursuant to the provisions of P.L. 537, 80th Congress (62 Stat. 240; 16 U.S.C. 667b). The property was reported to this Administration as excess to the needs of the Department of the Navy on November 12, 1969.

Accordingly, pursuant to the Federal Property and Administrative Services Act of 1949, 63 Stat. 377, as amended, and acting under authority delegated to me, I hereby transfer the property without reimbursement to the Department of the Interior.

The Commanding Officer, Northern Division, Naval Facilities Engineering Command, Naval Base, Philadelphia, Pennsylvania, will act for Navy in arranging for the transfer of custody and accountability of the property to your Department and in other matters related to the transfer. A copy of our letter of even date to Navy is enclosed for your information.

It is requested that you acknowledge receipt of this communication and that such steps as necessary be taken by your Department to consummate the transaction.

Sincerely,

Albert A. Gammal

ALBERT A. GAMMAL, JR.
Regional Administrator

Encl.

Accepted: U. S. Department of the Interior

By: Leslie L. Glasgow

Title: Assistant SECRETARY

Date: AUG 12 1970

DEPARTMENT OF THE INTERIOR
RECEIVED
JUL 20 1970
ASSISTANT SECRETARY
FOR FISH AND WILDLIFE AND PARKS

Keep Freedom in Your Future With U.S. Savings Bonds

RECEIVED
JAN 5 1980
NINIGRET N. W. R.

___ REFUGE MANAGER
✓ ASSISTANT MGR.
✓ CLERK
___ BIOL. TECHNICIAN
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ACTION
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LA-Rhode Island
Ninigret NWR

21 DEC 1979

Mr. A.G. Abrahams
Head, Disposal Section
Real Estate Division
Naval Facilities Engineering Command
Philadelphia, PA 19112

Dear Sir:

Enclosed are three signed copies of DD Form 1354, by which this office accepts custody and accountability of 316.4 acres of land and improvements at a portion of the former Naval Auxiliary Landing Field, Charlestown, Rhode Island. (GSA Control No. N-RI-469B).

An inspection was made to check the improvements listed on the DD 1354, and it was found that items 7 through ~~11~~ 9 could not be verified.

Sincerely yours,
(Sgd) William C. Ashe
ACTING
Regional Director

Enclosures

RE: MMastrangelo/lc/12/20/79 x270
cc: New England Area Office (NEAO)

RECEIVED
NEW ENG. AREA SERV.
DEC 27 1979
NEW ENG. AREA OFFICE

QUITCLAIM DEED

The UNITED STATES OF AMERICA, hereinafter referred to as Grantor, acting by and through the Regional Director, Northeast Region, Heritage Conservation and Recreation Service, with offices at the Federal Building, Room 9310, 600 Arch Street, Philadelphia, Pennsylvania, pursuant to authority delegated by the Secretary of the Interior, and as authorized by the Federal Property and Administrative Services Act of 1949 (63 Stat. 377), as amended, and particularly as amended by Public Law 91-485 (84 Stat. 1084), and regulations and orders promulgated thereunder, for and in consideration of the use and maintenance of the property herein conveyed exclusively for public park or public recreation purposes in perpetuity by the Town of Charlestown, Rhode Island, hereinafter referred to as Grantee, does hereby remise, release and quitclaim to Grantee, its successors and assigns, subject to the reservations, exceptions, restrictions, conditions and covenants hereinafter set forth, all right, title and interest of the Grantor in and to the following described property situated in the County of Washington, State of Rhode Island, and more particularly described as follows:

BEGINNING at a Rhode Island Highway Bound located in the southeasterly line of Rhode Island 1-A, said bound being further located a distance of 1,116 feet, more or less, southwesterly from the entrance road to the T.L. Arnold Estate 'Arnolda', and said bound is shown as Corner 1 on the above mentioned plan;

THENCE RUNNING NORTH 50°-06'-19" EAST, along the southeasterly line of said Rhode Island Route 1-A, a distance of 110.20 feet to a Rhode Island Highway Bound marking the beginning of a circular curve having a radius of 4638.10 feet;

THENCE running northeasterly, along the southeasterly line of said Rhode Island Route 1-A, on the arc of said curve and deflecting to the left, a distance of 191.54 feet to the most

northerly corner of the parcel of land herein conveyed;

THENCE turning and running SOUTH 38°-28'-22" EAST, a distance of 1,293.99 feet to a point;

THENCE running SOUTH 15°-00'-12" EAST, a distance of 1,000.93 feet to a point;

THENCE running SOUTH 32°-17'-02" EAST, a distance of 300.11 feet to a point;

THENCE running SOUTH 75°-35'-35" EAST, a distance of 374.80 feet to a point;

THENCE running NORTH 17°-15'-15" EAST, a distance of 330.46 feet to a point;

THENCE running NORTH 24°-43'-11" EAST, a distance of 870.04 feet to a point in the southwesterly boundary line of land now or formerly of the T.L. Arnold Estate, with the last six mentioned courses being bounded by other land, now or formerly of the General Service Administration;

THENCE running SOUTH 38°-30'-56" EAST, bounded northeasterly by said Arnold Estate, a distance of 2,021.65 feet to a standard USF&WS aluminum monument marked "21 COR. 9, 1979";

THENCE running SOUTH 70°-16'-16" WEST, bounded southerly by land now or formerly of Louise Gaddes, a distance of 32.41 feet to a standard USF&WS aluminum monument marked "6 COR. 7, 1979";

THENCE running SOUTH 55°-16'-58" WEST, a distance of 977.38 feet to a standard USF&WS aluminum monument marked "5 COR. 6, 1979";

THENCE running NORTH 73°-33'-27" WEST, along the northerly edge of the EAST-WEST RUNWAY, a distance of 4450.72 feet to a standard USF&WS aluminum monument marked "4 COR. 5, 1979" at the northwest corner of said runway;

THENCE running NORTH 17°-08'-08" EAST, A DISTANCE OF 703.29 feet to a corner in a stone wall shown as Corner 13 on the above mentioned plan;

THENCE running NORTH 54°-34'-49" EAST, a distance of 296.89 feet to a corner in a stone wall shown as Corner 14 on the above mentioned plan;

THENCE running NORTH 32°-33'-12" WEST, along said stone

wall, in part, a distance of 106.50 feet to a standard USF&WS aluminum monument marked "14 COR. 15, 1979" set in the southeasterly line of Rhode Island Route 1-A;

THENCE running NORTH 50°-59'-39" EAST, along the easterly line of said Rhode Island 1-A, a distance of 848.46 feet to a standard USF&WS aluminum monument marked "15 COR. 16, 1979";

THENCE running NORTH 49°-03'-01" EAST, along the southeasterly line of said Rhode Island Route 1-A, a distance of 680.77 feet to the point and place of BEGINNING.

The property herein conveyed contains 172.4 acres of land, more or less, and was formerly a portion of the Naval Auxilary Landing Field under the administrative jurisdiction of the Naval Facilities Engineering Command, an agency of the United States Government.

TOGETHER WITH the appurtenances and improvements thereon, and all the estate and rights of the Grantor in and to said premises.

SUBJECT TO any and all outstanding reservations, easements and rights-of-way, recorded and unrecorded, for public roads, railroads, pipe-lines, drainage ditches, sewer mains and lines, and public utilities affecting the property herein conveyed.

TO HAVE AND TO HOLD the above premises, subject to the easements, reservations, exceptions, restrictions, conditions, and covenants herein enumerated and set forth, unto the Grantee, its successors and assigns, forever.

There are excepted from this conveyance and reserved to the Grantor all oil, gas, and other minerals in, under, and upon the lands herein conveyed, together with the right to enter upon the land for the purpose of mining and removing the same.

There is further excepted from this conveyance and reserved to the Grantor an easement and right-of-way for the United States Fish and Wildlife Service and its assigns to enter and cross the herein granted premises. The entrance shall be through the to-be-constructed entrance from State Route 1-A and the right-of-way shall be along and over any constructed or existing roads through the granted premises. This right-of-way is reserved in connection with management of the Charlestown unit of the Ninigret National Wildlife Refuge and for the purpose of providing access to said refuge unit.

Pursuant to authority contained in the Federal Property and Administrative Services Act of 1949, as amended, and applicable

rules, regulations and orders promulgated thereunder, the General Services Administration determined the property to be surplus to the needs of the United States of America and assigned the property to the Department of the Interior for conveyance to Grantee.

It is understood and agreed by and between the Grantor and Grantee, and Grantee by acceptance of this deed does acknowledge that it fully understands the terms and conditions set forth herein and does further covenant and agree for itself, and its successors and assigns, forever, as follows:

1. The property shall be used and maintained exclusively for the public purposes for which it was conveyed in perpetuity as set forth in the program of utilization and plan contained in Grantee's application submitted by Grantee on October 20, 1979 as amended by letter with attachments dated February 7, 1980, which program and plan may be amended from time to time at the request of either the Grantor or Grantee, with the written concurrence of the other party, and such amendments shall be added to and become a part of the original application.

2. Prior to undertaking any construction activities within the area conveyed, the Grantee agrees to conduct a reconnaissance archeological survey to determine the presence and disposition of archeological resources within the areas to be disturbed, and to devise a program to eliminate or minimize the impact of construction upon such resources should they be found. All workscopes for survey and mitigation activities, and all reports produced as a result of such activities shall be reviewed and approved by the Rhode Island State Historic Preservation Officer. Survey and mitigation activities undertaken in compliance with this condition shall be conducted in accordance with the standards published in 36 CFR Part 66: Recovery of Scientific, Prehistoric, Historic and Archeological Data: Methods, Standards and Reporting Requirements.

3. The Grantee shall, within six months of the date of this deed, erect and maintain a permanent sign or marker near the

point of principal access to the conveyed area indicating that the property is a park or recreational area and has been acquired from the Federal Government for use by the general public.

4. The property shall not be sold, leased, assigned, or otherwise disposed of except to another eligible governmental agency that the Secretary of the Interior agrees in writing can assure the continued use and maintenance of the property for public park or public recreational purposes subject to the same terms and conditions in the original instrument of conveyance. However, nothing in this provision shall preclude the Grantee from providing related recreational facilities and services compatible with the approved application, through concession agreements entered into with third parties, provided prior concurrence to such agreements is obtained in writing from the Secretary of the Interior.

5. From the date of this conveyance, the Grantee, its successors and assigns, shall submit biennial reports to the Secretary of the Interior setting forth the use made of the property during the preceding two-year period, and other pertinent data establishing its continuous use for the purposes set forth above, for ten consecutive reports and as further determined by the Secretary of the Interior.

6. If, at any time, the United States of America shall determine that the premises herein conveyed, or any part thereof, are needed for the national defense, all right, title and interest in and to said premises or part thereof determined to be necessary to such national defense, shall revert to and become the property of the United States of America.

7. The Grantee further covenants and agrees for itself, its successors and assigns, to comply with the requirements of Public Law 90-480 (82 Stat. 718), the Architectural Barriers Act of 1968, as amended by Public Law 91-205 of 1970 (84 Stat. 49) and regulations and orders promulgated thereunder, to assure that development of facilities on the property makes such facilities accessible to the physically handicapped; and, further assure in

accordance with Public Law 93-112, the Rehabilitation Act of 1973 (87 Stat. 394) that no otherwise qualified handicapped individual shall, solely by reason of his or her handicap, be excluded from the participation in, be denied benefits of, or be subject to discrimination under any program or activity receiving Federal financial assistance.

8. The Grantee further covenants and agrees to comply with the 1977 Amendments to the Federal Water Pollution Control Act (Clean Water Act of 1977), Executive Order 11988 (May 24, 1977) for Floodplain Management and Executive Order 11990 (May 24, 1977) for Protection of Wetlands where said Amendments and Orders are applicable to the property herein conveyed. In particular, Grantee agrees that the property herein conveyed shall be subject to any use restrictions issued under said Amendments and Orders.

9. As part of the consideration for this deed, the Grantee covenants and agrees for itself, its successors and assigns, that: (1) the program for or in connection with which this deed is made will be conducted in compliance with, and the Grantee, its successors and assigns, will comply with all requirements imposed by or pursuant to the regulations of the Department of the Interior as in effect on the date of this deed (43 C.F.R. Part 17) issued under the provisions of Title VI of the Civil Rights Act of 1964; (2) this covenant shall be subject in all respects to the provisions of said regulations; (3) the Grantee, its successors and assigns, will promptly take and continue to take such action as may be necessary to effectuate this covenant; (4) the United States shall have the right to seek judicial enforcement of this covenant; and (5) the Grantee, its successors and assigns, will: (a) obtain from each other person (any legal entity) who, through contractual or other arrangements with the Grantee, its successors or assigns, is authorized to provide services or benefits under said program, a written agreement pursuant to which such other persons shall, with respect to the services or benefits which he is authorized to provide, undertake for himself the same obligations as those imposed upon the

Grantee, its successors and assigns, by this covenant, and (b) furnish a copy of such agreement to the Secretary of the Interior or his successor; and that this covenant shall run with the land hereby conveyed, and shall, in any event, without regard to technical classification or designation, legal or otherwise, be binding to the fullest extent permitted by law and equity for the benefit of and in favor of the Grantor and enforceable by the Grantor against the Grantee, its successors and assigns.

10. In the event there is a breach of any of the conditions and covenants herein contained by the Grantee, its successors and assigns, whether caused by the legal or other inability of the Grantee, its successors and assigns, to perform said conditions and covenants, or otherwise, all right, title and interest in and to the said premises shall revert to and become the property of the Grantor at its option which, in addition to all other remedies for such breach, shall have the right of entry upon said premises, and the Grantee, its successors and assigns, shall forfeit all right, title and interest in said premises and in any and all of the tenements, hereditaments and appurtenances thereunto belonging; provided, however, that the failure of the Secretary of the Interior to require in any one or more instances complete performance of any of the conditions or covenants shall not be construed as a waiver or relinquishment of such future performance, but the obligation of the Grantee, its successors and assigns, with respect to such future performance shall continue in full force and effect:

IN WITNESS WHEREOF, the Grantor has caused these presents to executed in its name and on its behalf this 27th day of March, 1981.

UNITED STATES OF AMERICA

By _____
Regional Director
Northeast Region
Heritage Conservation and Recreation Service
Room 9310, Federal Building
600 Arch Street
Philadelphia, Pennsylvania 19106

State of Pennsylvania)
) ss
County of Philadelphia)

On this 27th day of March, 1981, before me, the subscriber, personally appeared Robert W. McIntosh, to me known and known to me to be the Regional Director, Northeast Region, Heritage Conservation and Recreation Service, of the United States Department of the Interior, a governmental agency of the United States of America, with offices at the Federal Building, Room 9310, 600 Arch Street, Philadelphia, Pennsylvania, and known to me to be the same person described in and who executed the foregoing instrument as such Regional Director aforesaid, as the act and deed of the United States of America, for and on behalf of the Secretary of the Interior, duly designated, empowered and authorized so to do by said Secretary, and he acknowledged that he executed the foregoing instrument for and on behalf of the United States of America, for the purposes and uses therein described.

Carol Ann Kropp
NOTARY PUBLIC

My Commission expires:
CAROL ANN KROPP
Notary Public, Phila., Phila. Co.
My Commission Expires Oct. 13, 1983

The foregoing conveyance is hereby accepted and the undersigned agrees, by this acceptance, to assume and be bound by all the obligations, conditions, covenants and agreements therein contained.

TOWN OF CHARLESTOWN, RHODE ISLAND

By John R. Hartley

Title President, Town Council

STATE OF RHODE ISLAND)
) ss
County of Washington)

On this the 1st day of April, 1981, before me, Lora F. Burrows, the undersigned officer, personally appeared John R. Hartley, of the State of Rhode Island, known to me to be the person described in the foregoing instrument, and acknowledged that he executed the same in the capacity therein stated and for thepur poses therein contained.

In witness whereof, I have hereunto set my hand and official seal.

Lora F. Burrows
Town Clerk
Title

My Commission Expires
6/30/81

Received for record April 8, 1981,
in Charlestown, Rhode Island
at 10:24 o'clock AM.
and recorded in Land Evidence
Book 65 Page 540
Attest: Marcia D. Carstens
Dep. Town Clerk

Ninigret Park Deeds

CORRECTIVE QUITCLAIM DEED

The UNITED STATES OF AMERICA, hereinafter referred to as Grantor, acting by and through the Regional Director, Northeast Region, Heritage Conservation and Recreation Service, with offices at the Federal Building, Room 9310, 600 Arch Street, Philadelphia, Pennsylvania, pursuant to authority delegated by the Secretary of the Interior, and as authorized by the Federal Property and Administrative Services Act of 1949 (63 Stat. 377), as amended, and particularly as amended by Public Law 91-485 (84 Stat. 1084), and regulations and orders promulgated thereunder, for and in consideration of the use and maintenance of the property herein conveyed exclusively for public park or public recreation purposes in perpetuity by the Town of Charlestown, Rhode Island, hereinafter referred to as Grantee, does hereby remise, release and quitclaim to Grantee, its successors and assigns, subject to the reservations, exceptions, restrictions, conditions and covenants hereinafter set forth, all right, title and interest of the Grantor in and to the following described property situated in the County of Washington, State of Rhode Island, and more particularly described as follows:

BEGINNING at a Rhode Island Highway Bound located in the southeasterly line of Rhode Island 1-A, said bound being further located a distance of 1,116 feet, more or less, southwesterly from the entrance road to the T.L. Arnold Estate 'Arnolda';

THENCE RUNNING NORTH 50°-06' -19" EAST, along the southeasterly line of said Rhode Island Route 1-A, a distance of 110.20 feet to a Rhode Island Highway Bound marking the beginning of a circular curve having a radius of 4638.10 feet;

THENCE running northeasterly, along the southeasterly line of said Rhode Island Route 1-A, on the arc of said curve and deflecting to the left, a distance of 191.54 feet to the most

northerly corner of the parcel of land herein conveyed;

THENCE turning and running SOUTH 38°-28'-22" EAST, a distance of 1,293.99 feet to a point;

THENCE running SOUTH 15°-00'-12" EAST, a distance of 1,000.93 feet to a point;

THENCE running SOUTH 32°-17'-02" EAST, a distance of 300.11 feet to a point;

THENCE running SOUTH 75°-35'-35" EAST, a distance of 374.80 feet to a point;

THENCE running NORTH 17°-15'-15" EAST, a distance of 330.46 feet to a point;

THENCE running NORTH 24°-43'-11" EAST, a distance of 870.04 feet to a point in the southwesterly boundary line of land now or formerly of the T.L. Arnold Estate, with the last six mentioned courses being bounded by other land, now or formerly of the General Service Administration;

THENCE running SOUTH 38°-30'-56" EAST, bounded northeasterly by said Arnold Estate, a distance of 2,021.65 feet to a standard USF&WS aluminum monument marked "21 COR. 9, 1979";

THENCE running SOUTH 70°-16'-16" WEST, bounded southerly by land now or formerly of Louise Gaddes, a distance of 32.41 feet to a standard USF&WS aluminum monument marked "6 COR. 7, 1979";

THENCE running SOUTH 55°-16'-58" WEST, a distance of 977.38 feet to a standard USF&WS aluminum monument marked "5 COR. 6, 1979";

THENCE running NORTH 73°-33'-27" WEST, along the northerly edge of the EAST-WEST RUNWAY, a distance of 4450.72 feet to a standard USF&WS aluminum monument marked "4 COR. 5, 1979" at the northwest corner of said runway;

THENCE running NORTH 17°-08'-08" EAST, A DISTANCE OF 703.29 feet to a corner in a stone wall;

THENCE running NORTH 54°-34'-49" EAST, a distance of 296.89 feet to a corner in a stone wall;

THENCE running NORTH 32°-33'-12" WEST, along said stone

wall, in part, a distance of 106.50 feet to a standard USF&WS aluminum monument marked "14 COR. 15, 1979" set in the southeasterly line of Rhode Island Route 1-A;

THENCE running NORTH 50°-59'-39" EAST, along the easterly line of said Rhode Island 1-A, a distance of 848.46 feet to a standard USF&WS aluminum monument marked "15 COR. 16, 1979";

THENCE running NORTH 49°-03'-01" EAST, along the southeasterly line of said Rhode Island Route 1-A, a distance of 680.77 feet to the point and place of BEGINNING.

The property herein conveyed contains 172.4 acres of land, more or less, and was formerly a portion of the Naval Auxilary Landing Field under the administrative jurisdiction of the Naval Facilities Engineering Command, an agency of the United States Government.

TOGETHER WITH the appurtenances and improvements thereon, and all the estate and rights of the Grantor in and to said premises.

SUBJECT TO any and all outstanding reservations, easements and rights-of-way, recorded and unrecorded, for public roads, railroads, pipe-lines, drainage ditches, sewer mains and lines, and public utilities affecting the property herein conveyed.

TO HAVE AND TO HOLD the above premises, subject to the easements, reservations, exceptions, restrictions, conditions, and covenants herein enumerated and set forth, unto the Grantee, its successors and assigns, forever.

There are excepted from this conveyance and reserved to the Grantor all oil, gas, and other minerals in, under, and upon the lands herein conveyed, together with the right to enter upon the land for the purpose of mining and removing the same.

There is further excepted from this conveyance and reserved to the Grantor an easement and right-of-way for the United States Fish and Wildlife Service and its assigns to enter and cross the herein granted premises. The entrance shall be through the to-be-constructed entrance from State Route 1-A and the right-of-way shall be along and over any constructed or existing roads through the granted premises. This right-of-way is reserved in connection with management of the Charlestown unit of the Ninigret National Wildlife Refuge and for the purpose of providing access to said refuge unit.

Pursuant to authority contained in the Federal Property and Administrative Services Act of 1949, as amended, and applicable

rules, regulations and orders promulgated thereunder, the General Services Administration determined the property to be surplus to the needs of the United States of America and assigned the property to the Department of the Interior for conveyance to Grantee.

It is understood and agreed by and between the Grantor and Grantee, and Grantee by acceptance of this deed does acknowledge that it fully understands the terms and conditions set forth herein and does further covenant and agree for itself, and its successors and assigns, forever, as follows:

1. The property shall be used and maintained exclusively for the public purposes for which it was conveyed in perpetuity as set forth in the program of utilization and plan contained in Grantee's application submitted by Grantee on October 20, 1979 as amended by letter with attachments dated February 7, 1980, which program and plan may be amended from time to time at the request of either the Grantor or Grantee, with the written concurrence of the other party, and such amendments shall be added to and become a part of the original application.

2. Prior to undertaking any construction activities within the area conveyed, the Grantee agrees to conduct a reconnaissance archeological survey to determine the presence and disposition of archeological resources within the areas to be disturbed, and to devise a program to eliminate or minimize the impact of construction upon such resources should they be found. All workscopes for survey and mitigation activities, and all reports produced as a result of such activities shall be reviewed and approved by the Rhode Island State Historic Preservation Officer. Survey and mitigation activities undertaken in compliance with this condition shall be conducted in accordance with the standards published in 36 CFR Part 66: Recovery of Scientific, Prehistoric, Historic and Archeological Data: Methods, Standards and Reporting Requirements.

3. The Grantee shall, within six months of the date of this deed, erect and maintain a permanent sign or marker near the

point of principal access to the conveyed area indicating that the property is a park or recreational area and has been acquired from the Federal Government for use by the general public.

4. The property shall not be sold, leased, assigned, or otherwise disposed of except to another eligible governmental agency that the Secretary of the Interior agrees in writing can assure the continued use and maintenance of the property for public park or public recreational purposes subject to the same terms and conditions in the original instrument of conveyance. However, nothing in this provision shall preclude the Grantee from providing related recreational facilities and services compatible with the approved application, through concession agreements entered into with third parties, provided prior concurrence to such agreements is obtained in writing from the Secretary of the Interior.

5. From the date of this conveyance, the Grantee, its successors and assigns, shall submit biennial reports to the Secretary of the Interior setting forth the use made of the property during the preceding two-year period, and other pertinent data establishing its continuous use for the purposes set forth above, for ten consecutive reports and as further determined by the Secretary of the Interior.

6. If, at any time, the United States of America shall determine that the premises herein conveyed, or any part thereof, are needed for the national defense, all right, title and interest in and to said premises or part thereof determined to be necessary to such national defense, shall revert to and become the property of the United States of America.

7. The Grantee further covenants and agrees for itself, its successors and assigns, to comply with the requirements of Public Law 90-480 (82 Stat. 718), the Architectural Barriers Act of 1968, as amended by Public Law 91-205 of 1970 (84 Stat. 49) and regulations and orders promulgated thereunder, to assure that development of facilities on the property makes such facilities accessible to the physically handicapped; and, further assure in

accordance with Public Law 93-112, the Rehabilitation Act of 1973 (87 Stat. 394) that no otherwise qualified handicapped individual shall, solely by reason of his or her handicap, be excluded from the participation in, be denied benefits of, or be subject to discrimination under any program or activity receiving Federal financial assistance.

8. The Grantee further covenants and agrees to comply with the 1977 Amendments to the Federal Water Pollution Control Act (Clean Water Act of 1977), Executive Order 11988 (May 24, 1977) for Floodplain Management and Executive Order 11990 (May 24, 1977) for Protection of Wetlands where said Amendments and Orders are applicable to the property herein conveyed. In particular, Grantee agrees that the property herein conveyed shall be subject to any use restrictions issued under said Amendments and Orders.

9. As part of the consideration for this deed, the Grantee covenants and agrees for itself, its successors and assigns, that: (1) the program for or in connection with which this deed is made will be conducted in compliance with, and the Grantee, its successors and assigns, will comply with all requirements imposed by or pursuant to the regulations of the Department of the Interior as in effect on the date of this deed (43 C.F.R. Part 17) issued under the provisions of Title VI of the Civil Rights Act of 1964; (2) this covenant shall be subject in all respects to the provisions of said regulations; (3) the Grantee, its successors and assigns, will promptly take and continue to take such action as may be necessary to effectuate this covenant; (4) the United States shall have the right to seek judicial enforcement of this covenant; and (5) the Grantee, its successors and assigns, will: (a) obtain from each other person (any legal entity) who, through contractual or other arrangements with the Grantee, its successors or assigns, is authorized to provide services or benefits under said program, a written agreement pursuant to which such other persons shall, with respect to the services or benefits which he is authorized to provide, undertake for himself the same obligations as those imposed upon the

Grantee, its successors and assigns, by this covenant, and (b) furnish a copy of such agreement to the Secretary of the Interior or his successor; and that this covenant shall run with the land hereby conveyed, and shall, in any event, without regard to technical classification or designation, legal or otherwise, be binding to the fullest extent permitted by law and equity for the benefit of and in favor of the Grantor and enforceable by the Grantor against the Grantee, its successors and assigns.

10. In the event there is a breach of any of the conditions and covenants herein contained by the Grantee, its successors and assigns, whether caused by the legal or other inability of the Grantee, its successors and assigns, to perform said conditions and covenants, or otherwise, all right, title and interest in and to the said premises shall revert to and become the property of the Grantor at its option which, in addition to all other remedies for such breach, shall have the right of entry upon said premises, and the Grantee, its successors and assigns, shall forfeit all right, title and interest in said premises and in any and all of the tenements, hereditaments and appurtenances thereunto belonging; provided, however, that the failure of the Secretary of the Interior to require in any one or more instances complete performance of any of the conditions or covenants shall not be construed as a waiver or relinquishment of such future performance, but the obligation of the Grantee, its successors and assigns, with respect to such future performance shall continue in full force and effect:

IN WITNESS WHEREOF, the Grantor has caused these presents to be executed in its name and on its behalf this 22 day of May, 19[illegible]

UNITED STATES OF AMERICA

By [illegible]
Regional Director
Northeast Region
Heritage Conservation and Recreation Servic
Room 9310, Federal Building
600 Arch Street
Philadelphia, Pennsylvania 19106

State of Pennsylvania)
) ss
County of Philadelphia)

On this 22nd day of May, 1981, before me, the subscriber, personally appeared Robert W. McIntosh, Jr., to me known and known to me to be the Regional Director, Northeast Region, Heritage Conservation and Recreation Service, of the United States Department of the Interior, a governmental agency of the United States of America, with offices at the Federal Building, Room 9310, 600 Arch Street, Philadelphia, Pennsylvania, and known to me to be the same person described in and who executed the foregoing instrument as such Regional Director aforesaid, as the act and deed of the United States of America, for and on behalf of the Secretary of the Interior, duly designated, empowered and authorized so to do by said Secretary, and he acknowledged that he executed the foregoing instrument for and on behalf of the United States of America, for the purposes and uses therein described.

Carol Ann Kropp
NOTARY PUBLIC

My Commission expires:
CAROL ANN KROPP
Notary Public, Phila., Phila. Co.
My Commission Expires Oct. 13, 1983

The foregoing conveyance is hereby accepted and the undersigned agrees, by this acceptance, to assume and be bound by all the obligations, conditions, covenants and agreements therein contained.

TOWN OF CHARLESTOWN, RHODE ISLAND

By John Hartley

Title President, Town Council

STATE OF RHODE ISLAND)
) ss
County of WASHINGTON)

On this the 8th day of June, 1981, before me, Cora F. Burrows, the undersigned officer, personally appeared John Hartley, of the State of Rhode Island, known to me to be the person described in the foregoing instrument, and acknowledged that he executed the same in the capacity therein stated and for thepur poses therein contained.

In witness whereof, I have hereunto set my hand and official seal.

Cora F. Burrows
Notary Public
Title

My Commission Expires

6/30/81

Received for record June 12, 1981

in Charlestown, Rhode Island

at 10:43 o'clock AM.,

and recorded in Land Evidence

Book 66 Page 10

Attest: Marcia D. Carreira
Dep. Town Clerk

Corrective Quit-Claim

172.4 acres

REFUGE MANAGER
ASSISTANT MGR.
CLERK
BIOL. TECHNICIAN

x ACTION
✓ FILE
o REVIEW

- Rhode Island
Ninigret NWR

SEP 8 1981

Mr. L. F. Bretta, Regional Administrator
General Services Administration - Region 1
John W. McCormack Post Office and Courthouse
Boston, MA 02109

Dear Mr. Bretta:

This is to acknowledge receipt of your letter of August 25, 1981 regarding the transfer to the Department of the Interior of a 60-acre parcel at the former Naval Auxiliary Landing Field, Charlestown, Rhode Island (GSA Control No. 1-N-RI-469B).

We shall advise you when custody and accountability of this property has been transferred to the Fish and Wildlife Service by the Department of the Navy.

Sincerely yours,

Howard D. Woons

ACTING Regional Director

cc: Refuge Manager, Ninegret NWR
NEAO

RE:RBMarchelletta:lr:9/4/81:x270

RECEIVED
SEP 11 1981
NINIGRET N. W. R.

KNOW ALL MEN BY THESE PRESENTS: That the UNITED STATES OF AMERICA, acting by and through the ADMINISTRATOR OF GENERAL SERVICES, under and pursuant to the powers and authority contained in the provisions of the Federal Property and Administrative Services Act of 1949 (63 Stat. 377), as amended, and the regulations and orders promulgated thereunder, for and in consideration paid to it in the sum of TWO HUNDRED SEVENTY-NINE THOUSAND DOLLARS ($279,000)

does hereby remise, release, and forever quitclaim unto THE TOWN OF CHARLESTOWN, a municipal corporation in the State of Rhode Island and Providence Plantations,

all its right, title and interest in and to the property described in Schedule A, together with all appurtenances and improvements thereto, subject to such conditions as may be set forth in said Schedule A, being 55 acres located in the Town of Charlestown, Rhode Island.

TO HAVE AND TO HOLD the granted premises with all the privileges and appurtenances thereto belonging, to the said grantee(s) and to the heirs or successors and assigns of same, to their own use and behoof forever.

This deed is executed and delivered to the said grantee(s), and to the heirs or successors and assigns of same, without any covenants whatsoever, either express or implied.

IN WITNESS WHEREOF, the UNITED STATES OF AMERICA, acting by and through the ADMINISTRATOR of GENERAL SERVICES, has caused these presents to be executed as a sealed instrument in its name and behalf this 18th day of June, 1982.

UNITED STATES OF AMERICA
Acting By and Through The
ADMINISTRATOR OF GENERAL SERVICES

By Porter D. Leighton
Acting Regional Administrator
General Services Administration
Region One, Boston, Massachusetts

WITNESSES:

Helen L. Gadsarian

Carol A. Turner

COMMONWEALTH OF MASSACHUSETTS)
COUNTY OF SUFFOLK) ss.

In Boston, in said County and State, on this 18th day of June, 1982, before me personally appeared PORTER D. LEIGHTON, Acting Regional Administrator, General Services Administration, Boston, Massachusetts duly empowered and authorized and delegated by the Administrator of General Services, to me known and known by me to be the party executing the foregoing instrument and acknowledged said instrument by him duly executed, to be the free act and deed of the UNITED STATES OF AMERICA, as his free act and deed individually, and in his capacity as Acting Regional Administrator, General Services Administration, Boston, Massachusetts.

Arthur J. Betts

Notary Public
My Commission Expires: May 26, 1989

That certain tract or parcel of land, together with all buildings and other improvements situated theron, located on the southeasterly side of R.I. Route 1-A, in the Town of Charlestown, County of Washington, and State of Rhode Island, and being a portion of land shown on a plan entitled "Town OF CHARLESTOWN NAVAL AIR STATION AUXILIARY LANDING FIELD TRACT (12) 227.4 ACRES TOWN OF CHARLESTOWN WASHINGTON COUNTRY RHODE ISLAND", said plan was compiled by the United States Fish and Wildlife Service, Aug. 11, 1979, to which reference is hereby made.

The herein conveyed tract is more particularly bounded and described as follows;

BEGINNING at a Rhode Island Highway Bound located in the southeasterly line of R.I. Route 1-A, said bound being further located a distance of 463 feet, more or less, southwesterly from the entrance road to the T.L. Arnold Estate 'Arnolda', and said bound is shown as Corner on the above mentioned plan;

THENCE running North 42¼ - 44' - 46" East, along the southesterly line of said R.I. Route 1-A, a distance of 403.17 feet to a standard USF&WS aluminum monument marked "16 COR. 4, 1979";

THENCE running SOUTH 74¼ - 31' - 15" EAST, bounded northerly by land, now or formerly of T.L. Arnold Estate, a distance of 44.54 feet to a standard USF&WS aluminum monument marked "17 COR. 5, 1979";

THENCE running SOUTH 65¼ - 43' - 42" EAST, bounded northerly by said Arnold Estate, a distance 52.51 feet to a standard USF&WS aluminum monument marked "18 COR. 6, 1979";

THENCE running SOUTH 38¼ - 28' - 22" EAST, bounded northeasterly by said Arnold Estate, a distance of 1,915.57 feet to a standard USF&WS aluminum monument marked "19 COR. 7, 1979";

THENCE running SOUTH 57¼ - 50' - 09" EAST, bounded northeasterly by said Arnold Estate, a distance of 140.88 feet to a standard USP&WS aluminum monument marked "20 COR. 8, 1979";

THENCE running SOUTH 38¼ - 30' - 56" EAST, bounded northeasterly by said Arnold Estate, a distance of 197.50 feet to a point;

THENCE running SOUTH 24¼ - 43' - 11" WEST, a distance of 870.04 feet to a point;

THENCE running SOUTH 17¼ - 15' - 15" WEST, a distance of 330.46 feet to a point;

THENCE running NORTH 75¼ - 35' - 35" WEST, a distance of 374.80 feet to a point;

THENCE running NORTH 32¼ - 17' - 02" WEST, a distance of 300.11 feet to a point;

THENCE running NORTH 15¼ - 00' - 12" WEST, a distance of 1,000.93 feet to a point;

THENCE running NORTH 38¼ - 28' - 22" WEST, a distance of 1,293.99 feet to a point in the southeasterly line of said R.I. Route 1-A, said point being on a circular curve having a radius of 4638.10 feet, and the last six mentioned courses being bounded by other land, now or formerly, of General Services Administration;

THENCE turning and running northeasterly, deflecting to the left, on the arc of said curve, along the southeasterly line of R.I. Route 1-A, a distance of 351.23 feet to the point and place of beginning.

The above described parcel of land containd fifty-five (55.00) acres of land and is shown on a plan entitled "PLAN SHOWING FIFTY FIVE ACRE PARCEL OF LAND PORTION OF FORMER NAVAL AIR STATION TOWN CHARLESTOWN RHODE ISLAND SCALE: 1"=300' OCTOBER 1980 JOSEPH P. TOSCANO JR. RLS WESTERLY, RHODE ISLAND"

For Grantor's title see Declaration of Taking and Decree, "United States of America v. 589 acres of land, more or less, in Washington County, Rhode Island, Laura W. Prosser et al", being Misc. No. 150, United States District Court, District of Rhode Island.

EXCEPTING from this conveyance the former meteorological tower, approximately 300 feet high, along with its appurtenances and protective fencing, which are owned by other parties.

The above described property is conveyed subject to easements, conditions, restrictions and encumbrances of record.

With respect to the real property described in Schedule A (the "subject property") if at any time within a three-year period from the date of transfer of title by the Grantor, the Grantee shall sell or enter into agreements to sell (hereinafter referred to as a "disposition") in one transaction or series of transactions, it is agreed that all proceeds received or to be received from such disposition (whether received during the three-year period or thereafter) in excess of the Grantee's costs will be remitted to the Grantor.

For purposes of this agreement the Grantee's costs shall include, but not be limited to, expenditures made or incurred by Grantee on or with respect to the subject property, or which benefit the subject property, for the following:

(1) land acquistion:

(2) property maintenance and insurance;

(3) financing;

(4) marketing and promotion;

(5) project administration;

(6) physical development, including road construction, storm and sanitary sewer construction, other public facilities or utility construction, building rehabilitation and demolition, landscaping, grading and other site or public improvements; and

(7 planing, design and engineering services; provided, however, that the Grantee's costs will not include expenditures to the extent the same are defrayed by Federal Government grants.

In the event that there shall be a disposition within such three-year period that consists of less than all of the subject property, in determining whether the proceeds received at any time from such disposition are in excess of the Grantee's costs appropriately allocable to the property which is the subject of such disposition, the total Grantee's costs incurred prior to the receipt of such proceeds shall, as may be appropriate and equitable, either be: (a) specifically allocated between the property which is the subject of the disposition and the remainder of the subject property held by the Grantee, or (b) multiplied by a fraction the numerator of which is the area of the property which is the subject of the disposition and the denominator of which is the net developable area of the subject property and the result allocated to the property which is the subject of the disposition.

NON-DISCRIMINATION COVENANT

The Grantee covenants for itself, its heirs, successors, and assigns and every successor in interest to the property hereby conveyed, or any part thereof, that the said Grantee and such heirs, successors, and assigns shall not discriminate upon the basis of race, color, religion or national origin in the use, occupancy, sale, or lease of the property, or in their employment practices conducted theron. This covenant shall not apply, however, to the lease or rental of a room or rooms within a family dwelling unit; nor shall it apply with respect to religion to premises used primarily for religious purposes. The United States of America shall be deemed a beneficiary of this covenant without regard to whether it remains the owner of any land or interest therin in the locality of the property hereby conveyed and shall have the sole right to enforce this covenant in any court of competent jurisdiction.

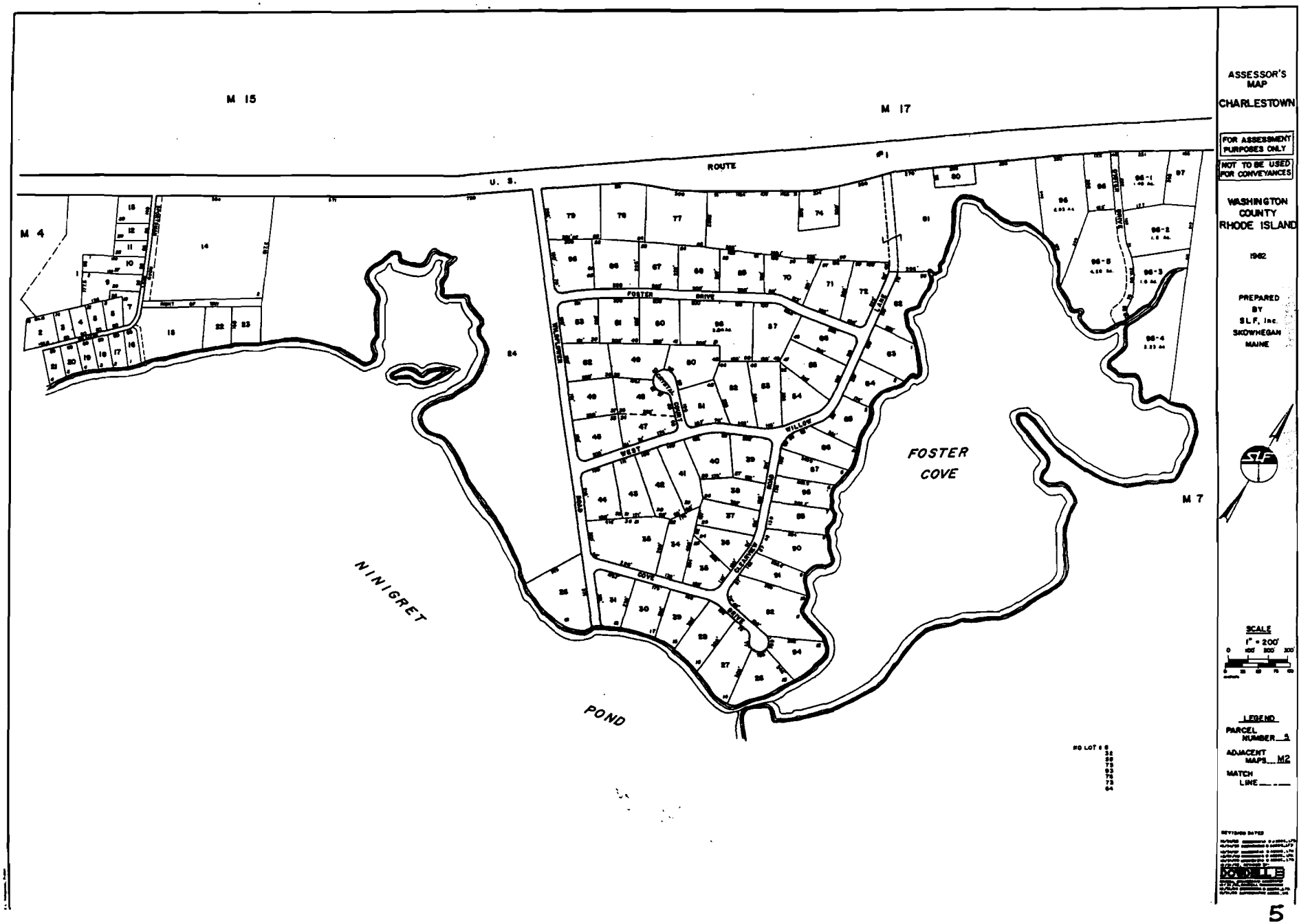
UNITED STATES OF AMERICA
Acting By and Through
ADMINISTRATOR OF GENERAL
SERVICES

TO

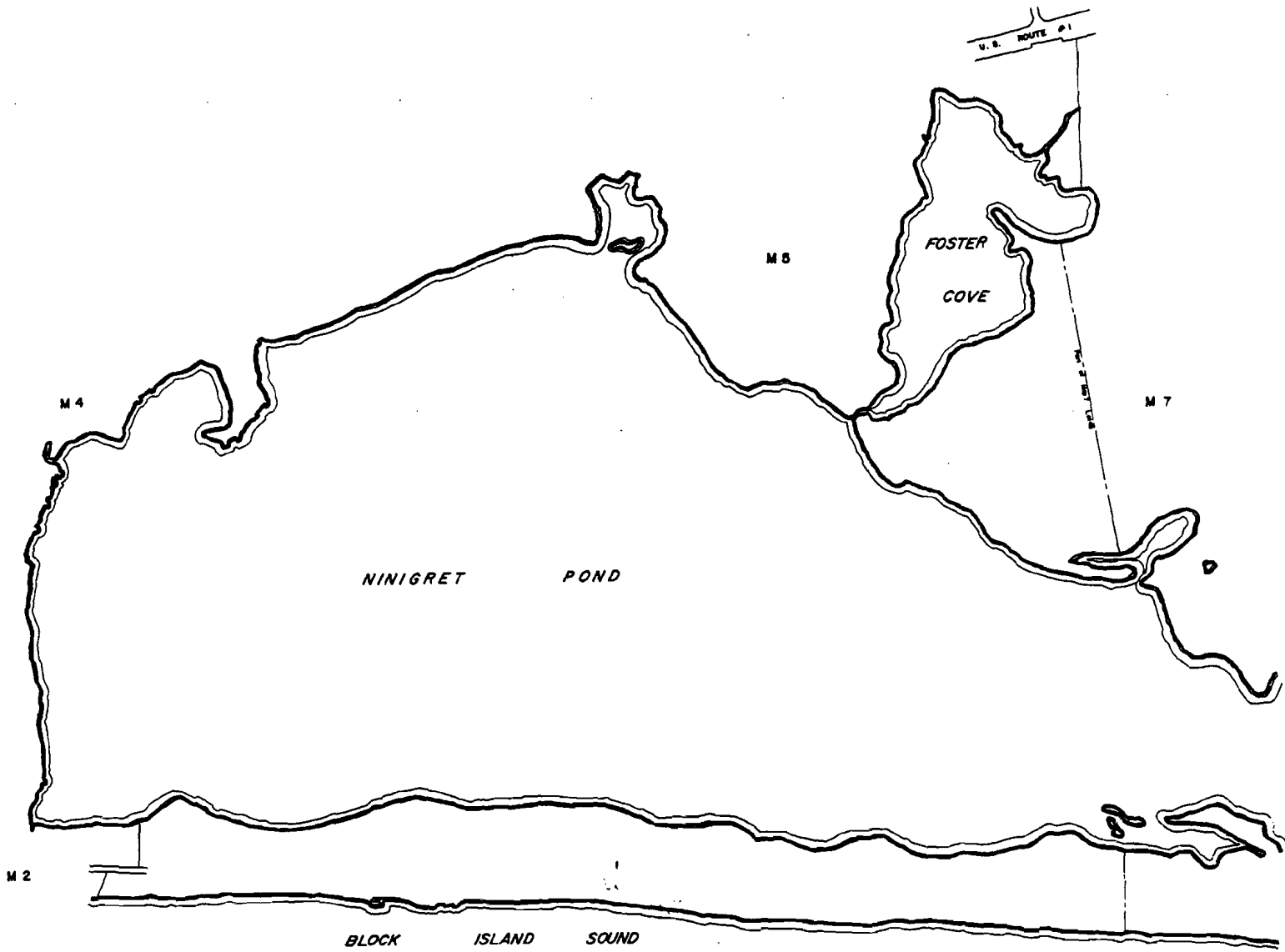
TOWN OF
BRISTOL, RHODE ISLAND

DEED

Recorded July 13, 1888
in Bristol, Town, Rhode Island
at 10 o'clock A.M.
in Land Evidence
Book 41 Page 578
Attest: [illegible]
Town Clerk


ASSESSOR'S MAP
CHARLESTOWN
FOR ASSESSMENT PURPOSES ONLY
NOT TO BE USED FOR CONVEYANCES
WASHINGTON COUNTY
RHODE ISLAND
1982
PREPARED BY
S.L.F. Inc.
SKOWHEGAN
MAINE
SCALE
1" = 200'
LEGEND
PARCEL NUMBER
ADJACENT MAPS M2
MATCH LINE
M 15
M 17
M 4
M 7
U. S. ROUTE #1
FOSTER DRIVE
WILLOW
WEST
CLEARING ROAD
COVE
NINIGRET POND
FOSTER COVE

G-13



ASSESSOR'S MAP
CHARLESTOWN

FOR ASSESSMENT PURPOSES ONLY

NOT TO BE USED FOR CONVEYANCES

WASHINGTON COUNTY
RHODE ISLAND

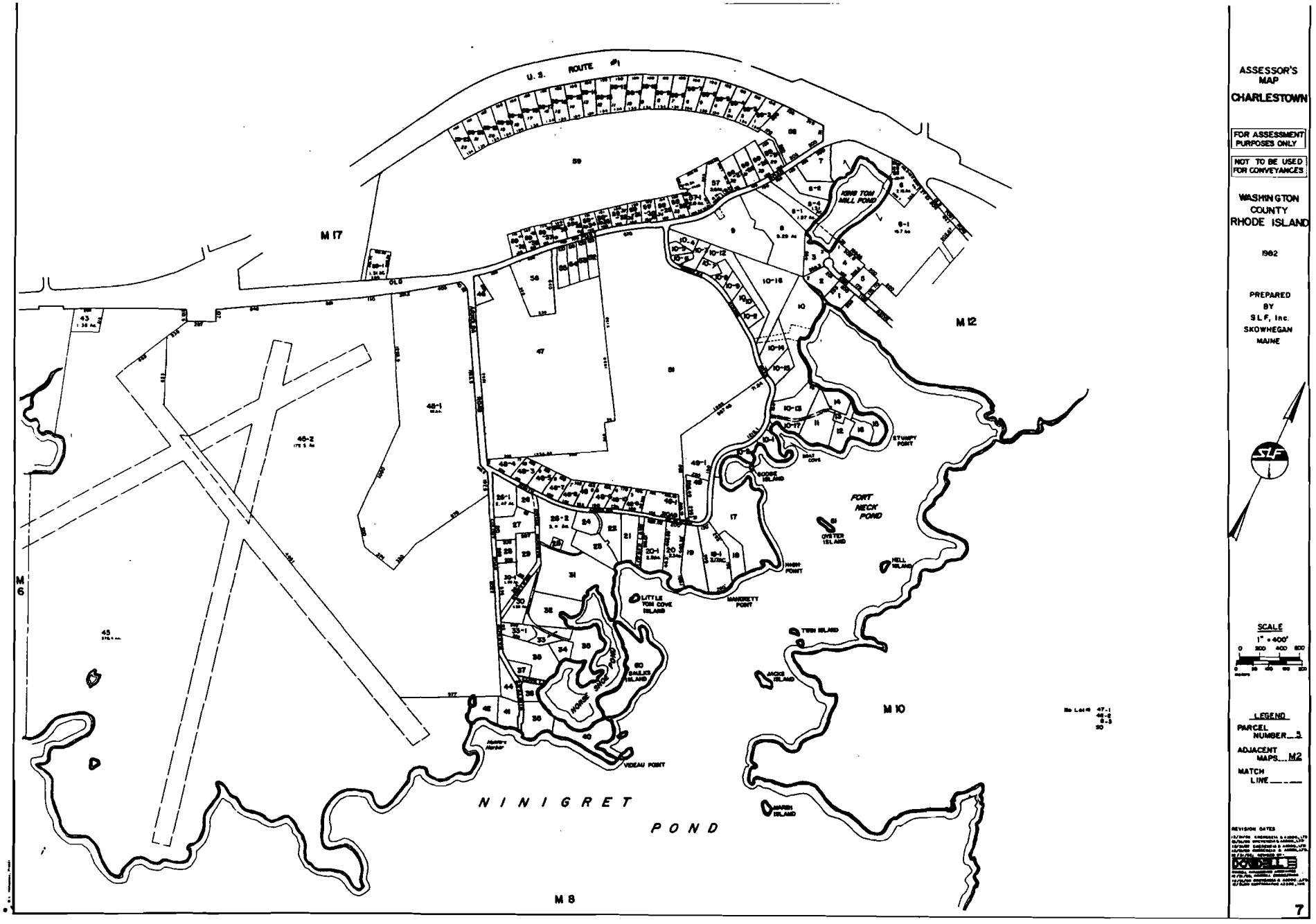
1982

PREPARED BY
S.L.F. Inc.
SKOWHEGAN
MAINE

SCALE
1" = 400'
0 200' 400' 800'

LEGEND
PARCEL NUMBER 5
ADJACENT MAPS M2
MATCH LINE

6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WASHINGTON COUNTY
RHODE ISLAND
1982
PREPARED BY
S.L.F. Inc.
SKOWHEGAN
MAINE
SCALE
1" = 400'
LEGEND
PARCEL NUMBER 5
ADJACENT MAPS M2
MATCH LINE
REVISION DATES
U. S. ROUTE #1
M 17
M 12
M 6
M 10
M 8
KIWI TOM MILL POND
FORT NECK POND
OYSTER ISLAND
HELL ISLAND
TWIN ISLAND
MOOSE ISLAND
MARSH ISLAND
STUMPY POINT
MOOSE ISLAND
HIGH POINT
HANGNETT POINT
LITTLE TOM COVE ISLAND
EAGLE ISLAND
HORSE SHOE POND
VIDEAU POINT
NINIGRET POND
7

D E E D

TOWN OF CHARLESTOWN

WASHINGTON COUNTY

To

UNITED STATES OF AMERICA

THIS DEED, made this 23rd day of May, 1988, by and between the Town of Charlestown, Washington County, Rhode Island, grantor, and the United States of America, acting by and through the Secretary of the Interior, grantee,

WITNESSETH:

KNOW ALL MEN BY THESE PRESENTS, that the Town of Charlestown, a policital subdivision located in the County of Washington, State of Rhode Island, for consideration of and in performance of the covenants, conditions, reservations, restrictions and agreements contained in the Deed dated May 22, 1981, from the United States of America to the said Town of Charlestown, grants and covenants to the United States of America and its assigns forever, without warranty, the following described land in the Town of Charlestown, Washington County, Rhode Island.

The hereinafter-described tract of land is located in the State of Rhode Island, Washington County, Town of Charlestown, situate approximately 1.8 miles southwesterly of the Village of Charlestown, southeasterly of State Route 1A, and northerly of Ninigret Pond, being a portion of the land conveyed to the Town of Charlestown from the United States of America in a Quitclaim Deed dated May 22, 1981, recorded in Deed Book 66, Page 10, of the Deed Records of the said Town and State of Charlestown, and being more particularly described as follows:

BEGINNING at Corner 303, a standard USF&WS aluminum monument found, being Corner 5, of the UNITED STATES (TRACT 11); thence N 17° 08' 08" E, along land of the UNITED STATES (TRACT 11), 465.16 feet, to Corner 733, a standard USF&WS aluminum monument set and marked, "COR. 733 TR. 12 1987"; thence S 28° 12' 40" E, along land of the Town of Charlestown, 653.84 feet, to Corner 732, a standard USF&WS aluminum monument set and marked, "COR. 732 TR. 12 1987"; thence N 73° 33' 27" W, along land of the UNITED STATES (TRACT 11), 465.16 feet to the PLACE OF BEGINNING, containing 2.48 acres, more or less.

The above-described tract of land is delineated on a map tracing designated TOWN OF CHARLESTOWN TRACT (12) bearing date of February 11, 1987, of record in the files of the Department of the Interior and is being acquired for administration by the Secretary of the Interior through the United States Fish and Wildlife Service.

The property herein conveyed was formerly a portion of the Naval Air Station Auxiliary Landing Field under the administrative jurisdiction of the Department of the Navy, an agency of the United States Government.

The above property being a portion of the property that was conveyed to the Town of Charlestown by the Deed of the United States of America, acting by and through the Deed by the Regional

Heritage, Conservation and Recreation Service
Director, Northeast Region, ~~Bureau of Outdoor Recreation~~ dated May 22, 1981, received for record in Charlestown, Rhode Island June 12, A.D. 1981 and recorded in Land Evidence Book Number 66, Pages 10-17, the said Town intending herein to convey to the United States of America 2.48 acres of the real estate and interest in real estate acquired by the Town from the United States of America by the above referenced deed.

TO HAVE AND TO HOLD the granted premises together with all the rights, easements, and appurtenances thereunto belonging or in anywise appertaining to the United States of America and its assigns to its own use and behoof forever, subject, however, to any existing public roads and public utility easements.

IN WITNESS WHEREOF, The Town of Charlestown has caused these presents to be executed on the day and year first above written.

Town of Charlestown
Washington County
Rhode Island

WITNESS:

Nancy A. Cadmann By: _____
Town Administrator
Curtis A. Shook

STATE OF RHODE ISLAND
COUNTY OF WASHINGTON

In Charlestown, in said County and State, on this 23rd day of May, 1988, before me personally appeared the above-named Curtis A. Shook, to me known and known by me to be the Town Administrator of Charlestown, Rhode Island, and he acknowledged said instrument, by him executed, to be his free act and deed and the free act and deed of the Town of Charlestown, as well.

Jodi P. Bousseau
Notary Public
Jodi P. Bousseau
My Commission Expires: 6-30-91

I hereby certify the above to be a true
In attestation whereof, I have hereunto set
my hand, and have affixed the seal of the
Town of Charlestown this 23rd day of
May, 1988

Jodi P. Bousseau
Deputy Town Clerk

ORDNANCE AND EXPLOSIVE
ARCHIVES SEARCH REPORT
FOR
NAVAL AUXILIARY LANDING FIELD
CHARLESTOWN, RHODE ISLAND
PROJECT NUMBER D01RI000804

APPENDIX H

NEWSPAPERS/JOURNALS

(NOT USED)

ORDNANCE AND EXPLOSIVE
ARCHIVES SEARCH REPORT
FOR
NAVAL AUXILIARY LANDING FIELD
CHARLESTOWN, RHODE ISLAND
PROJECT NUMBER D01RI000804

APPENDIX I

INTERVIEWS

APPENDIX I

INTERVIEWS

Table of Contents

I-1. Interview of Mr. Larry Webster

I-2. Interview of COL. Michael Brady

I-3. Interview of Ms. Millie Godden

I-4. Interview of Mr. Gary M.Andres

I-5. Interview of Mr. Charlie Hebert

I-6. Interview of Mr. Bob Mowry

CONVERSATION RECORD	TIME 1300 Hours	DATE 27 October 1997

TYPE

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

NAME OF PERSON CONTACTED:	ORGANIZATION:	TELEPHONE NO.
Larry Webster	Curator at New England Air Museum	(401) 783-7616

SUBJECT: Naval Auxiliary Landing Field

SUMMARY:

Mr. Webster, a longtime resident of the area, works as a museum curator, and belongs to various organizations, one of which is the Rhode Island Aviation Heritage Association. Mr. Webster has 25 years of experience as a aero historian and with aviation archeological activities, including the excavation of nine aircraft at the Naval Auxiliary Landing Field. Aircraft which were considered non-repairable were often used for fire drills or dumped in a pit by the waste treatment plant. Portions of nine different aircraft were excavated from the pit in 1973 and 1977. During these two efforts no live ordnance was uncovered. Many sheet-metal style practice bombs were located, but no spotting charges, ammunition, or loaded weapons were found. Mr. Webster stated that he had submitted a request for an archeological field investigation dealing with four hulks in Hunter Island dump Site (see F-14). When asked about other ammunition he had heard stories of a belt of 20mm found in the pond on Hunter Island, but hadn't seen any. In his back yard was an empty MK 15 Mod 2 practice bomb taken from the excavation site. A photo of the Mk 15 bomb is located in Appendix J.

ACTION REQUIRED:

ACTION TAKEN:

NAME OF PERSON DOCUMENTING CONVERSATION	ORGANIZATION	TELEPHONE NUMBER
Harlan E. Carlson	CENCR-ED-DO	309-782-1493
SIGNATURE Harlan E. Carlson	TITLE QASAS/UXO	DATE 27 Oct '97

CONVERSATION RECORD	TIME	DATE 22 October 1997

TYPE

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

NAME OF PERSON CONTACTED:	ORGANIZATION:	TELEPHONE NO.
COL Michael Brady	Police Chief, Charlestown, RI	(401) 364-1212

SUBJECT: Naval Auxiliary Landing Field

SUMMARY:

An interview was conducted with Colonel Brady at the local police offices. While this was going on, the office staff completed a file search going back several years looking for reports involving military ordnance or related items, either on or having originated at, the Auxiliary Landing Field. The only incident recorded involved an item which seemed to be used for gathering weather data. This had apparently been dropped from an aircraft, landing on one of the small islands in Ninigret Pond. A local found it while deer hunting. After examination by the police it was brought to the station. The US Navy EOD Team agreed to take possession and conduct some research in order to make a final determination as to it's origin and intended use. No more data was available on this item which is considered to be a non-related incident with no connection at all to the former Naval Auxiliary Landing Field. Col Brady stated that responses of any sort to the installation were few and far between since it's deactivation.

ACTION REQUIRED:

ACTION TAKEN:

NAME OF PERSON DOCUMENTING CONVERSATION	ORGANIZATION	TELEPHONE NUMBER
Harlan E. Carlson	CENCR-ED-DO	309-782-1493
SIGNATURE Harlan E. Carlson	TITLE QASAS/UXO	DATE 22 Oct 97

CONVERSATION RECORD	TIME	DATE 23 October 1997

TYPE

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

NAME OF PERSON CONTACTED:	ORGANIZATION:	TELEPHONE NO.
Millie Godden	Airfield employee, and spouse of Pilot	(401) 364-6323

SUBJECT: Naval Auxiliary Landing Field

SUMMARY:

Ms. Godden is a former real estate agent and long time local resident who worked at the airfield for many years. She pointed out that her husband was one of many who completed the various training courses. Little ordnance was ever stored here since the missions were to train pilots to complete the various carrier simulator deck and night flying courses. To the best of her knowledge there never were any anti-aircraft weapons of any sort put into place, although there was much speculation about defense plans. When it was pointed out that most bases which store and use ammunition have a disposal area or range, she said she had never heard of one being established. The field was always considered a part of Quonset Point, she imagined that people from that location would have made necessary plans. There was an area at the far end on one of the runways which was apparently used as a dump. During one of the town meetings called to consider a school construction proposal this was brought to light by at least one former flyer. She knew a congressional type of investigation had been initiated and the school was never built.

ACTION REQUIRED:

ACTION TAKEN:

NAME OF PERSON DOCUMENTING CONVERSATION	ORGANIZATION	TELEPHONE NUMBER
Harlan E. Carlson	CENCR-ED-DO	309-782-1493
SIGNATURE Harlan E. Carlson	TITLE QASAS/UXO	DATE 27 Oct '97

CONVERSATION RECORD	TIME	DATE 21 October 1997

TYPE

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

NAME OF PERSON CONTACTED:	ORGANIZATION:	TELEPHONE NO.
Gary M. Andres	Local US Fish & Wildlife Representative	(401) 364-9124

SUBJECT: **Naval Auxiliary Landing Field**

SUMMARY:

Mr. Andres works at the Charlestown office of the US Fish & Wildlife Service, which has primary control at the Ninigret Wildlife Refuge. Although recently arrived from another region, he was very helpful in assisting the ASR team in locating sites and locations on the former landing field. As with most former military installations, several pieces of military ordnance have been reported to have been found, however, none of these reports had ever been substantiated. Stories he had heard involved small belts of 20mm and small arms ammunition being found in close proximity to storage igloos and the Machine-gun Range. National Guard engineers are now removing sections of the old runways. This, with planned reforestation efforts, and the natural reclamation process should reduce the number of reports, since more people will remain on the trails. During the course of the interview, Mr. Andres showed the ASR team a container filled with projectiles from 20mm and .50 caliber rounds as well as a few .30 caliber projectiles. These items came from the Machine-gun Range, or where pilots and maintenance personnel tested A/C guns (Shoot in Butt). Photos are in Appendix J.

ACTION REQUIRED:

ACTION TAKEN:

NAME OF PERSON DOCUMENTING CONVERSATION	ORGANIZATION	TELEPHONE NUMBER
Harlan E. Carlson	CENCR-ED-DO	309-782-1493
SIGNATURE: Harlan E. Carlson	TITLE: QASAS/UXO	DATE: 21 Oct 97

CONVERSATION RECORD	TIME	DATE 29 October 1997

TYPE

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

NAME OF PERSON CONTACTED:	ORGANIZATION:	TELEPHONE NO.
Charlie Hebert	Local US Fish & Wildlife Supervisor	(401) 364-9124

SUBJECT: Naval Auxiliary Landing Field

SUMMARY:

Mr. Hebert is the Supervisor at the Charlestown office of the US Fish & Wildlife Service. Having been assigned here for several years he had no trouble directing the ASR team to the location of ammunition structures, and other areas. While he believed reports of small arms and 20mm ammunition being found in and around the ammunition buildings to be quite possible, he could not confirm any of these reports. Mr. Hebert did say that a fisherman reported snagging a belt of 20mm rounds in a pond at the end of runway 30. As many as four aircraft hulks, used for fire fighting drills are reported to be buried in the area of the pond, but are now covered with building debris from old structures. Reports of several miniature practice bombs being found in the old dump by the sewage treatment plant are also quite common, but unconfirmed. He has heard from several sources that the government plans on cleaning up both the dump site, and in all probability, the area where the old aircraft are buried. Interest in the former landing field has slowed considerably as the runway started being removed by the National Guard. Native grasslands will again cover the old auxiliary field.

ACTION REQUIRED:

ACTION TAKEN:

NAME OF PERSON DOCUMENTING CONVERSATION	ORGANIZATION	TELEPHONE NUMBER
Harlan E. Carlson	CENCR-ED-DO	309-782-1493
SIGNATURE Harlan E. Carlson	TITLE QASAS/UXO	DATE 27 Oct 97

CONVERSATION RECORD	TIME	DATE 27 October 1997

TYPE

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

NAME OF PERSON CONTACTED:	ORGANIZATION:	TELEPHONE NO.
Mr. Bob Mowry	Rhode Island State Bomb Squad/Fire Marshall's Office	(401) 294-0861

SUBJECT: Naval Auxiliary Landing Field

SUMMARY:

Mr. Mowry works with Mr. Stan Davies at the Rhode Island State Fire Marshall's office, which is co-located with the Rhode Island Bomb Squad Mr. Mowry stated he did not have any first hand knowledge of ordnance being reported or trips made to the Naval Auxiliary Landing Field since he had been working with the State Fire Marshall. He did furnish telephone numbers of other potential response teams who may have been called if anything had been discovered. He also agreed to make a complete file check of past responses and would also check with Mr. Davies who was not in at the time, but has been with the Rhode Island Bomb Squad for a much longer period of time. During a return call to his office Mr. Mowry stated that nothing appeared on file as far as responses to the Charlestown Field. Mr. Davies recalled an unconfirmed report of a fisherman snagging a small belt of 20mm ammunition out of a pond (See Interview I-5), however, the squad had not responded to that, or any other incidents.

ACTION REQUIRED:

ACTION TAKEN:

NAME OF PERSON DOCUMENTING CONVERSATION	ORGANIZATION	TELEPHONE NUMBER
Harlan E. Carlson	CENCR-ED-DO	309-782-1493
SIGNATURE: Harlan E. Carlson	TITLE QASAS/UXO	DATE 27 Oct 97

ORDNANCE AND EXPLOSIVE
ARCHIVES SEARCH REPORT
FOR
NAVAL AUXILIARY LANDING FIELD
CHARLESTOWN, RHODE ISLAND
PROJECT NUMBER D01RI000804

APPENDIX J

PRESENT SITE PHOTOGRAPHS

APPENDIX J

PRESENT SITE PHOTOGRAPHS

Table of Contents

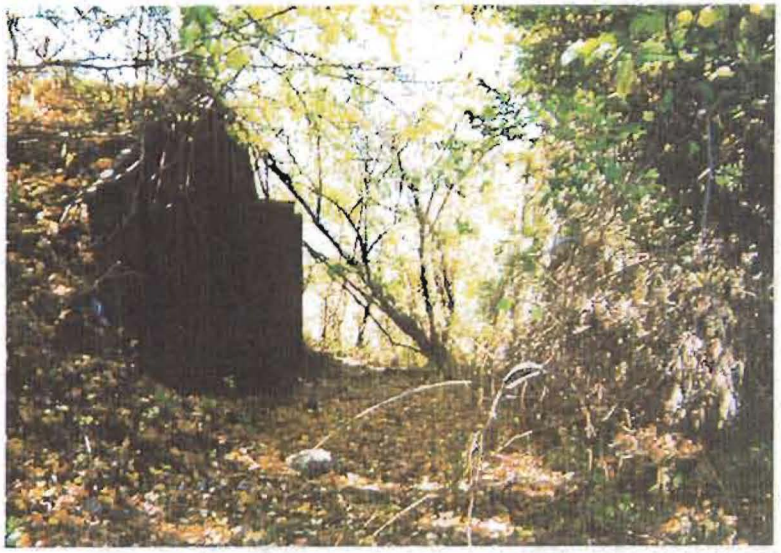
J-1.	Area A:	View of the current Charlestown Recreation Complex where a grouping of ammunition administrative offices once stood.
J-2.	Area B-1:	Machine Gun Range, (Shoot-in-Butt), showing angular concrete backstop
J-3.	Area B-1:	20mm projectiles located on the exposed concrete backstop of the Machine Gun Range (Shoot-in-Butt).
J-4.	Area B-1:	View of the Ready Magazine, Bldg 55, Opposite the taxi-way from the Machine Gun Range Shoot-in-Butt).
J-5.	Area C:	View of High Explosive Magazine, Bldg 60, facing protective concrete barricade.
J-6.	Area D:	View of Fuse and Detonator Magazine, Bldg 59,facing protective concrete barricade.
J-7.	Area D:	View of Small Arms Magazine, Bldg 58, now used for general storage.
J-8.	Area E:	Area View of above ground Inert Storage Magazine, Bldg 56.
J-9.	Area E:	Former Pyrotechnic Magazine, Bldg 57 now used as a rain shelter and rest area on hiking trail.
J-10.	Area G:	Practice bomb, MK15 Mod 2, found in a dump north of NW-SE Runway 30 by Mr. Larry Webster (Photo taken behind Mr. Webster's residence).

J-1 SITE OF AMMUNITION ADMINISTRATION AREA (AREA A).

J-2 ANGULAR CONCRETE BACKSTOP AT MACHINE GUN RANGE (SHOOT-IN-BUTT) (AREA B-1)

J-3 20MM PROJECTILES LOCATED ON EXPOSED CONCRETE BACKSTOP, MACHINE GUN RANGE (SHOO-IN-BUTT) (AREA B-1)

J-4 READY MAGAZINE, BUILDING 55 (AREA B-1).



J-5 HIGH EXPLOSIVES MAGAZINE, BUILDING 60 (AREA C).

J-6 DETONATOR AND FUZE MAGAZINE, BUILDING 59 (AREA D).

J-7 SMALL ARMS AMMUNITION MAGAZINE, BUILDING 58 (AREA D).

J-8 INERT MAGAZINE, BUILDING 56 (AREA E).

J-9 PYROTECHNIC MAGAZINE, BUILDING 57 (AREA E).

J-10 MK 15 MOD 2 PRACTICE BOMB REMOVED FROM DUMP BY LOCAL MUSEUM CURATOR (AREA G).

ORDNANCE AND EXPLOSIVE
ARCHIVES SEARCH REPORT
FOR
NAVAL AUXILIARY LANDING FIELD
CHARLESTOWN, RHODE ISLAND
PROJECT NUMBER D01RI000804

APPENDIX K

HISTORICAL PHOTOGRAPHS

APPENDIX K

HISTORICAL PHOTOGRAPHS

Table of Contents

K-1. Aerial photograph showing construction of the Naval Auxiliary Landing Field, dated 10 June 1942 (B-67).

K-2. Aerial photograph of the Naval Auxiliary Landing Field, dated 12 October 1943 (B-68).

K-3. Aerial photograph of the Naval Auxiliary Landing Field, dated 18 October 1945 (B-69).

K-4. Aerial photograph of the Naval Auxiliary Landing Field, dated 21 April 1954 (B-70).

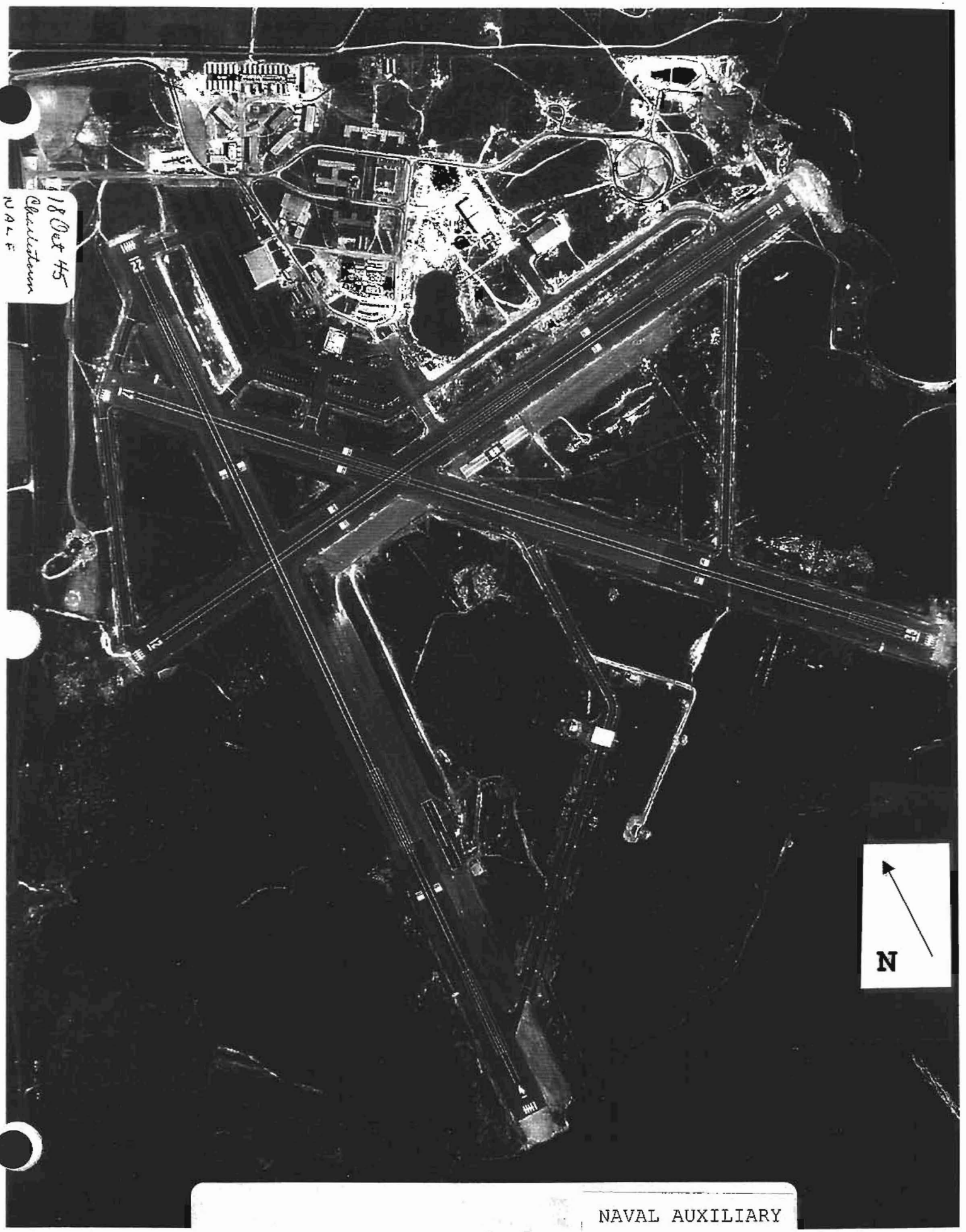
K-5. Aerial photograph of the Naval Auxiliary Landing Field, dated 27 September 1965 (B-71).

K-1

NAVAL AUXILIARY
LANDING FIELD
10 JUNE 1942

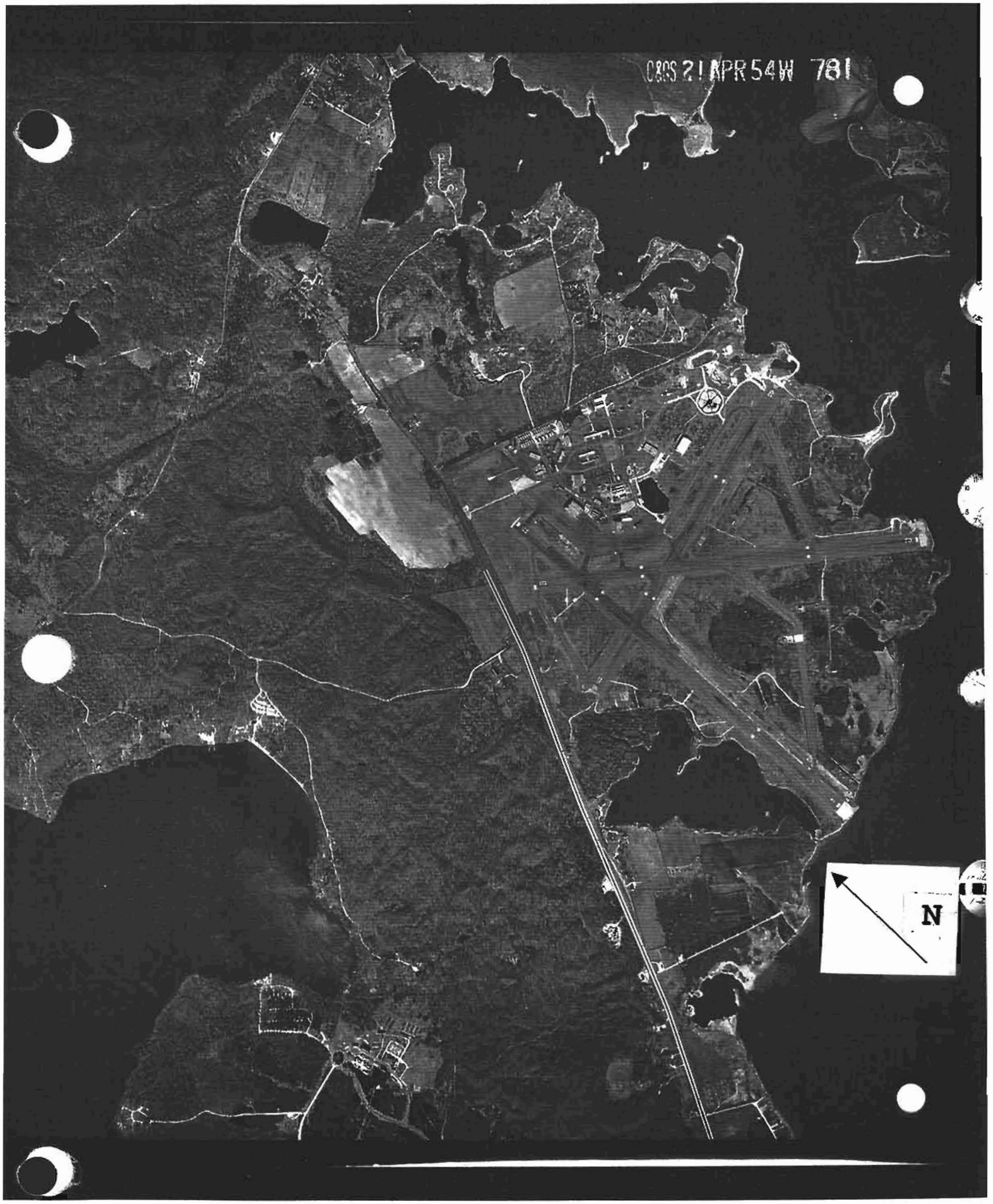
K–2

NAVAL AUXILIARY
LANDING FIELD
12 OCTOBER 1943



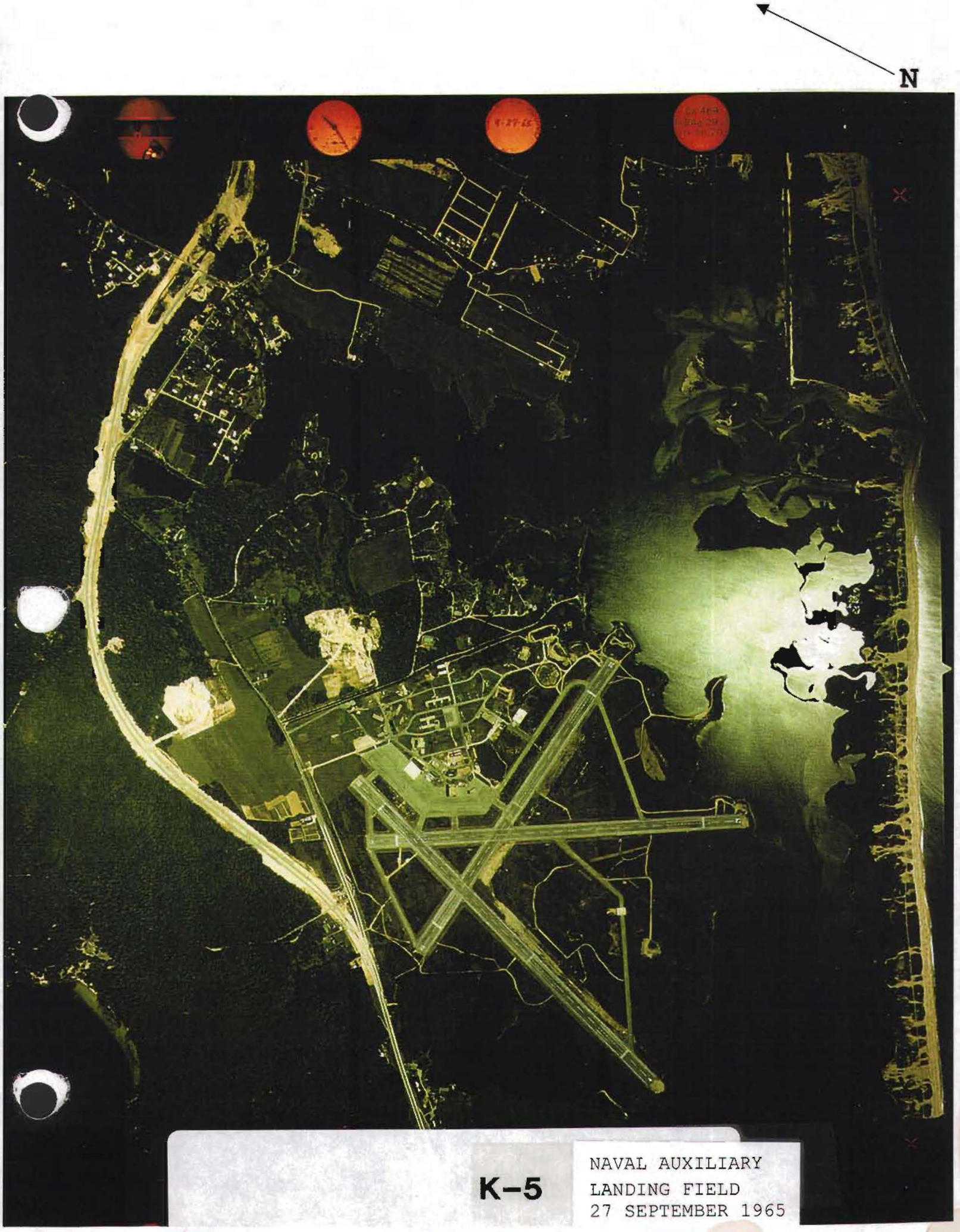
K-3

NAVAL AUXILIARY
LANDING FIELD
18 OCTOBER 1945



K-4

NAVAL AUXILIARY
LANDING FIELD
21 APRIL 1954



K-5

NAVAL AUXILIARY
LANDING FIELD
27 SEPTEMBER 1965

ORDNANCE AND EXPLOSIVE
ARCHIVES SEARCH REPORT
FOR
NAVAL AUXILIARY LANDING FIELD
CHARLESTOWN, RHODE ISLAND
PROJECT NUMBER D01RI000804

APPENDIX L

REFERENCE MAPS/DRAWINGS

APPENDIX L

REFERENCE MAPS/DRAWINGS

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L-1. General Development Plan, Department of the Navy, Bureau of Yards & Docks, U.S. Naval Auxiliary Air Station, Charlestown, RI, dated 29 July 1952 (B-72).

L-2. Drawing #2318, Sheet #5, Public Works Department, Naval Air Station, Quonset Point, RI, showing the Naval Auxiliary Landing Field, dated 30 June Circa 1950 (B-73).

L-3. Drawing #2318, Sheet #6, Public Works Department, Naval Air Station, Quonset Point, RI, showing the Naval Auxiliary Landing Field, dated 30 June Circa 1950 (B-74).

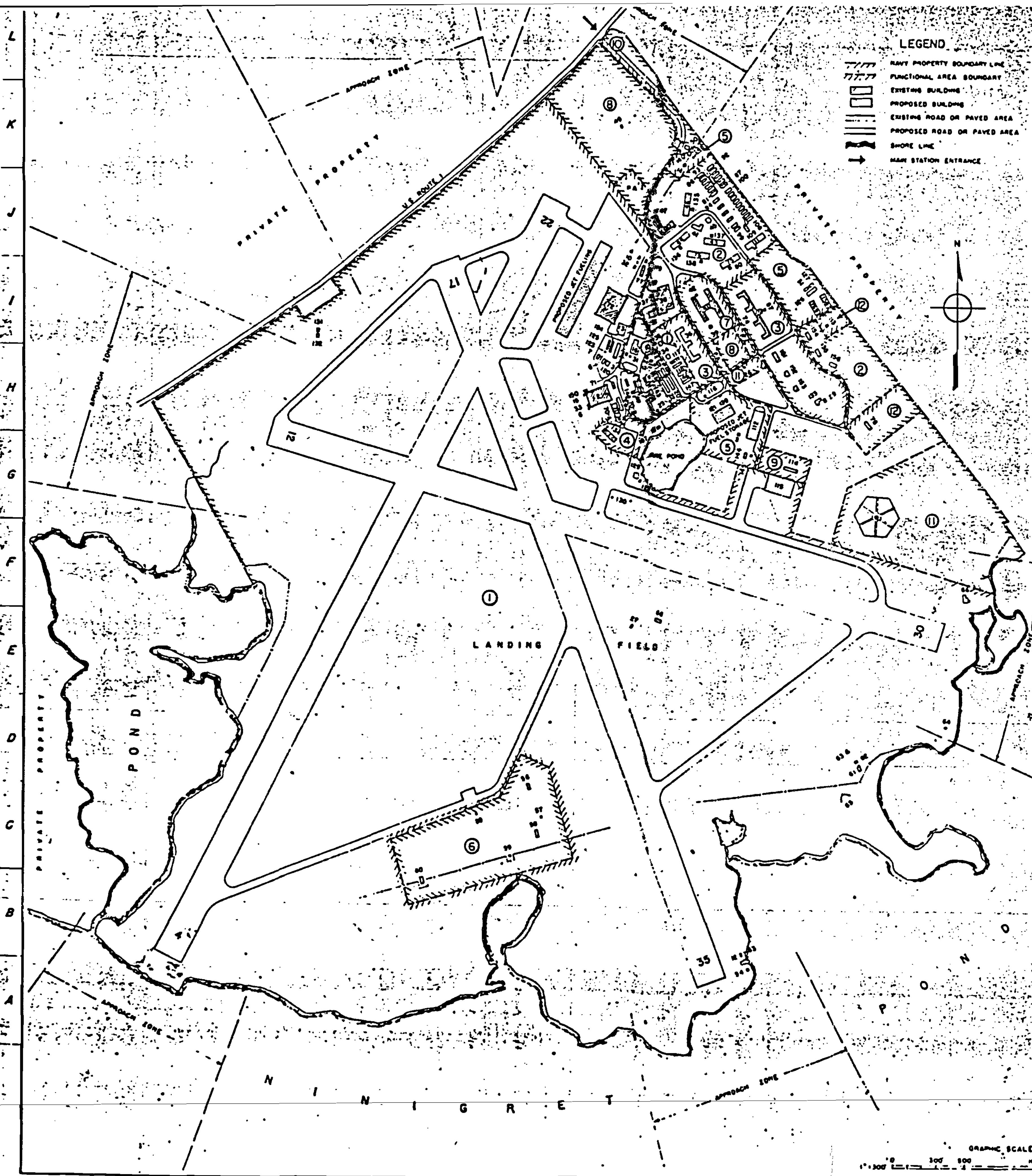
L-4. Geological Survey Map, U.S. Department of the Interior showing the Naval Auxiliary Landing Field, dated 1953 (Revised) (B-75).

L-5. Drawing #20266, Yard and Dock #877976, U.S. Naval Air Station, Quonset Point, RI, showing existing conditions at the Naval Auxiliary Landing Field, dated 10 April 1972 (B-76).

L-6. Ninigret Park and Wildlife Refuge Map, Chamber of Commerce, Charlestown, RI, dated circa 1997 (B-77).

L-7. Facility Map, Public Works Department, Naval Auxiliary Air Facility, showing existing conditions and proposed construction initiatives, dated 30 June 1943, (B-83).

L-8. Continuation of Facility Map, Public Works Department, Naval Auxiliary Air Facility, showing the location of the 25 & 50 Yard Pistol Range, dated 30 June 1943, (B-84).



INDEX OF STRUCTURES

NO.	LOC.	DEPARTMENT	USE	FL.EL.
1	B-5	ADMINISTRATION	ADMINISTRATION BLDG.	24.75
2	H-5	OPERATIONS	HANGAR NO 1	24.84
3	H-5	PUBLIC WORKS	BOILERHOUSE NO.3	25.50
4	I-5	OPERATIONS	LINE SHACK	31.67
5	G-4	OPERATIONS	AVIATION GAS SHACK	25.06
6	H-5	OPERATIONS	STORAGE SHACK	25.75
7	H-5	OPERATIONS	LINE SHACK	26.67
8	H-5	OPERATIONS	PARACHUTE STORAGE	24.72
10	I-5	OPERATIONS	LINE SHACK	31.42
11	H-5	PUBLIC WORKS	CARPENTER SHOP	25.50
12	G-4	OPERATIONS	CRASH GEAR HOUSE	9.31
12	I-5	FIRE DEPT.	FIRE STATION	27.70
15	H-5	OPERATIONS	LINE SHACK	25.37
16	H-5	PUBLIC WORKS	TRANSPORTATION GARAGE	27.70
17	H-5	PUBLIC WORKS	HEAVY DUTY EQUIPMENT GARAGE	24.26
18	H-5	PUBLIC WORKS	FIRE PUMP HOUSE	14.00
19	H-5	ORDNANCE	ARMORY	25.44
20	H-5	TRAINING	OFFICE & LINK TRAINER	25.24
21	H-5	ORDNANCE	ORDNANCE BLDG.	25.07
22	H-5	TRAINING	TRAINING BLDG.	24.75
23	H-5	PUBLIC WORKS	INJECTOR STATION (SEWAGE DISPOSAL)	23.63
24	H-5	ORDNANCE	ORDNANCE BLDG.	27.76
25	H-5	PUBLIC WORKS	PUBLIC WORKS BLDG.	23.60
26	H-4	PUBLIC WORKS	CHLORINE BLDG. (SEWAGE DISPOSAL)	27.60
27	E-5	PUBLIC WORKS	PUMP HOUSE, WELL NO. 12	10.26
28	H-5	PUBLIC WORKS	WELDING & SHEET METAL SHOP	25.79
29	H-5	ADMINISTRATION	GARAGE (QUARTERS "A")	30.36
30	H-5	PUBLIC WORKS	STORAGE (CRASH GEAR)	25.13
31	H-5	PUBLIC WORKS	TRANSPORTATION OIL SHED	26.39
32	I-5	OPERATIONS	LINE SHACK	31.64
33	H-5	OPERATIONS	LINE SHACK	25.43
34	H-5	OPERATIONS	SQUADRON BLDG.	26.40
35	I-5	OPERATIONS	SQUADRON BLDG	26.81
36	I-4		FOUNDATION ONLY (B.O.Q.)	
37	I-5	PUBLIC WORKS	BOILER HOUSE	30.17
38	I-5	ADMINISTRATION	MESS HALL	32.00
39	I-4	MEDICAL	DISPENSARY GARAGE	26.42
40	I-4	MEDICAL	DISPENSARY	32.23
41	J-4	WELFARE & REC.	C.P.O. RECREATION BLDG.	35.70
42	I-4	PUBLIC WORKS	HEATER HOUSE, DISPENSARY	26.61
43	J-4	ADMINISTRATION	BARRACKS NO 3	34.75
44	J-4	ADMINISTRATION	BARRACKS NO 1	34.75
45	J-4	ADMINISTRATION	BOILER HOUSE NO 8	33.95
46	J-4	ADMINISTRATION	BARRACKS NO 2	34.75
47	J-5	PUBLIC WORKS	PUMP HOUSE NO 1-FRESH WATER	29.39
48	K-4	PUBLIC WORKS	BOILER HOUSE NO 4	43.76
49	K-5	PUBLIC WORKS	PUMP HOUSE NO.2-FRESH WATER	
50	K-4	SECURITY	GATE HOUSE	42.74
51	I-5	PUBLIC WORKS	STORAGE	31.75
52			REMOVED	
53	B-4	OPERATIONS	CRASH OIL SHED	5.24
54	A-4	OPERATIONS	CRASH READY SHED & STORAGE	5.22
55	C-7	ORDNANCE	MAGAZINE, READY	9.42
56	C-8	ORDNANCE	MAGAZINE, INERT	14.14
57	C-8	ORDNANCE	MAGAZINE, PYROTECHNIC	5.99
58	C-8	ORDNANCE	MAGAZINE, SMALL ARMS	5.26
59	C-6	ORDNANCE	MAGAZINE, FUSE & DETONATOR	13.23
60	B-7	ORDNANCE	MAGAZINE, H E	10.10
61	D-2	ORDNANCE	STORAGE BLDG	9.80
62	D-2	ORDNANCE	STORAGE, SKEET & TRAP	9.00
63	D-5	ORDNANCE	STORAGE	9.30
64	D-1	ORDNANCE	TRAP RANGE	
65	C-5	ORDNANCE	SKEET RANGE	
66	F-1		FOUNDATION ONLY	
67	I-4	ADMINISTRATION	STORAGE, B.O.Q.	29.67
68	E-5	OPERATIONS	GEAR HOUSE, CATAPULT	25.07
69	H-5	FASRON	ELECTRONICS BLDG.	25.84
70	H-5	FASRON	ENGINEERING & ENGINE SHOP	24.89
70A	H-5	FASRON	PARACHUTE LOFT	26.12
70B	H-5	FASRON	SHOP STORES	
71	H-5	FASRON	SHOP STORES	27.84
72	I-5	OPERATIONS	HANGAR NO 2	27.30
73	I-5	PUBLIC WORKS	BOILER HOUSE NO 5	29.52
74	I-4	ADMINISTRATION	QUARTERS, B.O.	31.04
75	I-4	ADMINISTRATION	BARRACKS NO 5	32.23
76	J-4	ADMINISTRATION	BARRACKS NO 4	34.22
77	I-5	PUBLIC WORKS	CARPENTER SHOP	32.29
78	H-2	COMMUNICATIONS	RADIO TRANSMITTER BLDG.	23.26
79	I-5	PUBLIC WORKS	GARBAGE HOUSE	31.80
80	I-4	PUBLIC WORKS	HEATER HOUSE, BARRACKS NO 5	23.51
81	J-4	ADMINISTRATION	QUARTERS, E.M.	35.25
82	J-4	ADMINISTRATION	QUARTERS, E.M.	34.02
83	J-4	ADMINISTRATION	QUARTERS, E.M.	34.45
84	J-4	ADMINISTRATION	QUARTERS, E.M.	36.94
85	J-4	ADMINISTRATION	QUARTERS, E.M.	37.49
86	J-4	ADMINISTRATION	QUARTERS, E.M.	36.00
87	J-4	ADMINISTRATION	QUARTERS, E.M.	37.72
88	J-4	ADMINISTRATION	QUARTERS, E.M.	37.36
89	J-4	ADMINISTRATION	QUARTERS, E.M.	36.74
90	J-4	ADMINISTRATION	QUARTERS, E.M.	36.04
91	J-4	ADMINISTRATION	QUARTERS, E.M.	35.36
92	H-4	ADMINISTRATION	QUARTERS, E.M.	35.23
93	J-4	ADMINISTRATION	LATRINE, E.M.	36.32
94	J-4	ADMINISTRATION	TEMPORARY STORAGE	36.09
95	J-4	ADMINISTRATION	TEMPORARY STORAGE	35.79
96	J-4	ADMINISTRATION	TEMPORARY STORAGE	35.91
97	J-4	ADMINISTRATION	TEMPORARY STORAGE	34.20
98	J-4	ADMINISTRATION	TEMPORARY STORAGE	33.73
99	J-4	ADMINISTRATION	TEMPORARY STORAGE	33.14
100	J-4	ADMINISTRATION	TEMPORARY STORAGE	34.12
(4)-(22)		OPERATIONS	NE-SW RUNWAY 5500 X 200	
(12)-(30)		OPERATIONS	NW-SE RUNWAY 4800 X 200	
(17)-(35)		OPERATIONS	N-S RUNWAY 5250 X 200	

NO.	LOC.	DEPARTMENT	USE	FL.EL.
101	J-4	ORDNANCE	SMALL ARMS HUT	35.55
102	J-4	ADMINISTRATION	TEMPORARY STORAGE	35.54
103	J-4	ADMINISTRATION	LATRINE, E.M.	34.54
104	J-4	ADMINISTRATION	TEMPORARY STORAGE	35.08
105	J-4	ADMINISTRATION	TEMPORARY STORAGE	34.60
106	J-4	ADMINISTRATION	TEMPORARY STORAGE	34.57
107	J-4	ADMINISTRATION	TEMPORARY STORAGE	34.29
108	J-4	ADMINISTRATION	TEMPORARY STORAGE	34.09
109	J-4	ADMINISTRATION	TEMPORARY STORAGE	32.10
110	J-5	WELFARE & REC.	NAVY EXCHANGE & RECREATION BLDG.	34.25
111	J-4	ADMINISTRATION	BARRACKS NO. 6	33.50
112	H-4	SUPPLY & FISCAL	SUPPLY BLDG.	29.41
113	I-5	COMMUNICATIONS	RADIO RECEIVER BLDG.	29.08
114	G-5	PUBLIC WORKS	STORAGE	29.34
115	G-5	OPERATIONS	HANGAR NO. 3	23.98
116	H-4	SUPPLY & FISCAL	AVIATION GAS KING HOUSE	23.99
117	H-5	TRAINING	TRAINING BLDG.	27.44
118	H-5	TRAINING	TRAINING BLDG.	27.62
119	H-5	PUBLIC WORKS	STORAGE	25.21
120	H-5	FASRON	PAINT SHOP	25.36
121	H-4	SUPPLY & FISCAL	TRUCK LOADING STAND (100 OCTANE GAS)	
122				
123	H-5	FASRON	OXYGEN STORAGE PIT	25.32
124	H-5	ORDNANCE	SHOP	26.31
125	I-5	OPERATIONS	LINE SHACK	25.53
126	I-5	PUBLIC WORKS	STORAGE	31.67
127	I-5	PUBLIC WORKS	STORAGE	31.74
128	G-5	ORDNANCE	MAGAZINE, FLARES	18.57
129	G-5	OPERATIONS	CRASH FIRE STATION	19.98
130	G-5	PUBLIC WORKS	PUMP HOUSE, WELL NO. 11	19.36
131	I-9	PUBLIC WORKS	STORAGE	
132	I-5	PUBLIC WORKS	STORAGE	
133	H-5	ADMINISTRATION	QUARTERS, C.O.	33.13
134	H-5	PUBLIC WORKS	HEATER HOUSE	14.63
135	J-4	PUBLIC WORKS	HEATER HOUSE NO. 2	27.08
136	J-4	PUBLIC WORKS	HEATER HOUSE NO. 1	26.77
137	J-4	PUBLIC WORKS	HEATER HOUSE NO. 3	26.84
138	I-4	PUBLIC WORKS	HEATER HOUSE NO 4	25.15
139	H-4	SUPPLY & FISCAL	TRUCK LOADING STAND (90 OCTANE GAS)	
140	K-4	PUBLIC WORKS	ELEV. WATER TANK-50,000 GAL. DOMESTIC	
141	K-4	PUBLIC WORKS	ELEV. WATER TANK-125,000 GAL. FIRE	
142			REMOVED	
143	H-5	PUBLIC WORKS	PAINT STORAGE	24.53
144	G-4	SUPPLY & FISCAL	COMMISSARY STORAGE	28.09
145	G-4	SUPPLY & FISCAL	PAINT & OIL STORAGE	24.07
146	H-4	PUBLIC WORKS	STORAGE	27.73
147	H-4	PUBLIC WORKS	STORAGE	27.74
148	H-5	PUBLIC WORKS	STORAGE BLDG.	26.31
149	I-5	OPERATIONS	LINE SHACK	
150	H-4	PUBLIC WORKS	TRANSFORMER VAULT, FIELD LIGHTING	25.07
151	H-3	ADMINISTRATION	QUARTERS, M.O. (4 APTS)	29.04
152	H-3	ADMINISTRATION	QUARTERS, M.O.	29.43
153	H-3	ADMINISTRATION	QUARTERS, M.O.	29.84
154	I-3	ADMINISTRATION	QUARTERS, M.E.M. (4 APTS.)	31.06
155	H-3	ADMINISTRATION	QUARTERS, M.E.M. (4 APTS.)	29.98
156	H-3	ADMINISTRATION	QUARTERS, M.E.M. (4 APTS.)	29.63
157	G-5	PUBLIC WORKS	WATER TREATMENT BLDG.	21.96
158	I-5	PUBLIC WORKS	SHOP STORES STORAGE	31.09
159	I-5	PUBLIC WORKS	STORAGE	32.14

AREA ALLOCATIONS

AREA	ALLOCATION
1	OPERATIONS AREAS
2	ENLISTED PERSONNEL AREAS
3	OFFICER PERSONNEL AREAS
4	ADMINISTRATION AREA
5	STORAGE AREAS
6	MAGAZINE AREA
7	DISPENSARY AREA
8	RECREATION AREAS
9	P.W.D. MAINTENANCE AREAS
10	GATE HOUSE AREA
11	UTILITIES AREAS
12	COMMUNICATIONS AREAS
P.A.	PARKING AREAS

~~RESTRICTED~~
~~REVELATION OF THE CONTENTS OF THIS DRAWING TO ANY UNAUTHORIZED PERSON IS PROHIBITED BY LAW SEE ESPIONAGE ACT 50 USC 31-32~~

UNCLASSIFIED per authority in Proj. Project 80-018, dated

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

APPROVED FOR SHORE STATION DEVELOPMENT BOARD

APPROVED FOR BUREAU OF YARDS AND DOCKS

APPROVED FOR SPONSOR BUREAU OR OFFICE

APPROVED FOR LOCAL DEVELOPMENT BOARD

DATE

L-1

P.W.D. DRAWING NO 16053

DRAWN BY WHITNEY

TRACED BY

CHECKED BY BEAUDRY

P.W. (?) CIVIL ENGR.

SUPERVISING ENGR.

P.C. WORKS OFFICER

DEPARTMENT OF THE NAVY BUREAU OF YARDS & DOCKS

U.S. NAVAL AUXILIARY AIR STATION, CHARLESTOWN, R.I.

MASTER SHORE STATION DEVELOPMENT PLAN

PART II - SECTION 2

GENERAL DEVELOPMENT PLAN

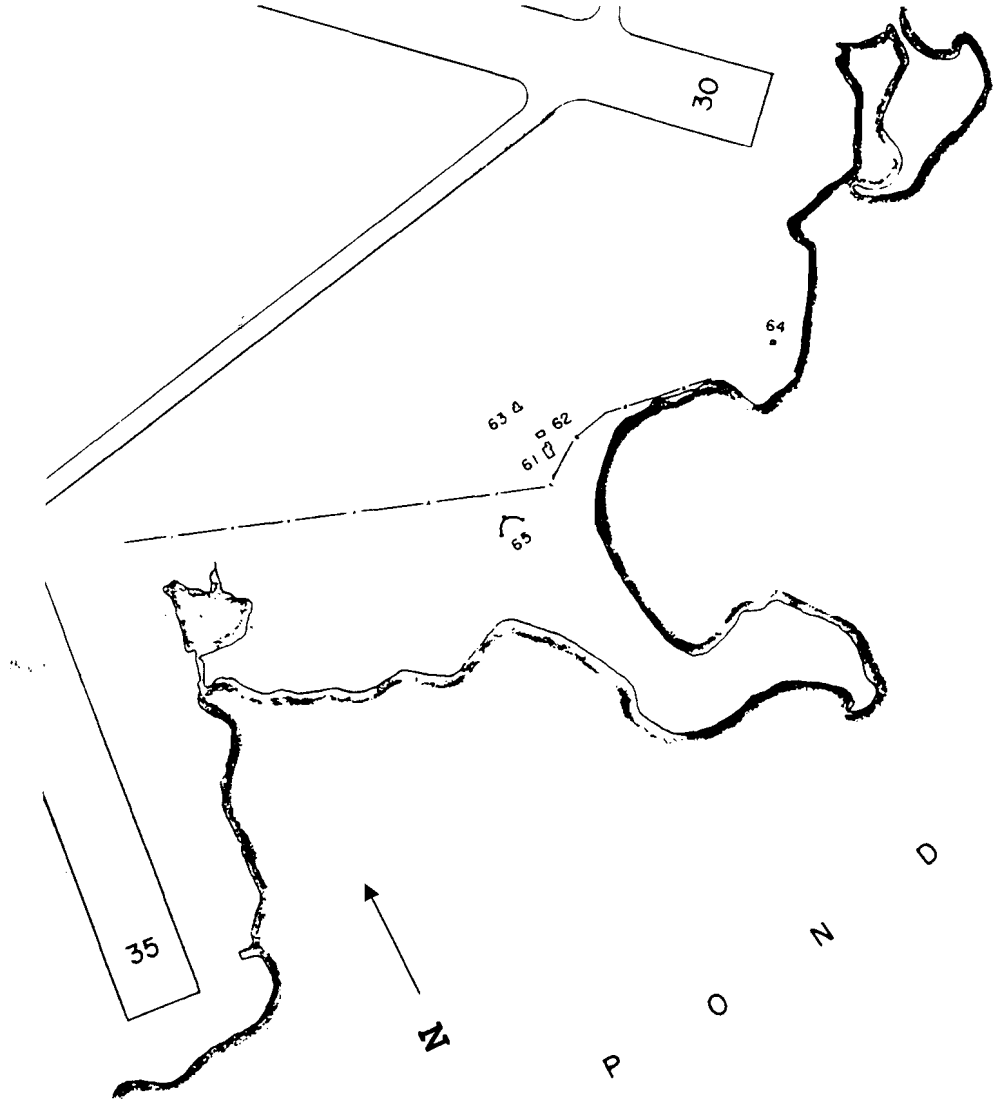
APPROVED 7-29-52 DATE — COMMANDING OFFICER

SUBMITTED 7-28-52 DATE — STATION DEVELOPMENT BOARD

SCALE 1"=300'

SHEET 1 OF 1

Y&D DWG NO 503903

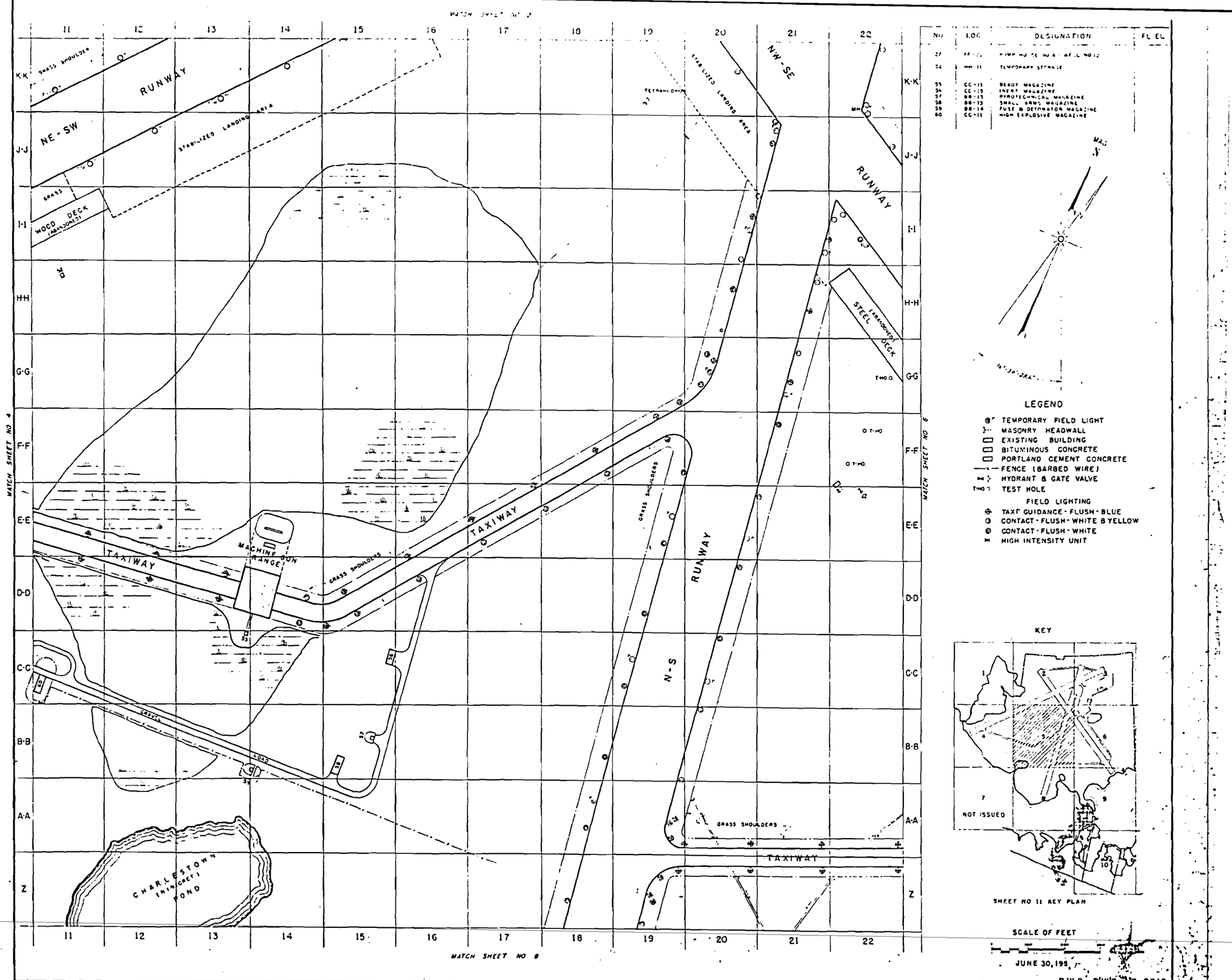


61	D-2	ORDNANCE	STORAGE BLDG.
62	D-2	ORDNANCE	STORAGE, SKEET & TRAP
63	D-3	ORDNANCE	STORAGE
64	D-1	ORDNANCE	TRAP RANGE
65	C-3	ORDNANCE	SKEET RANGE

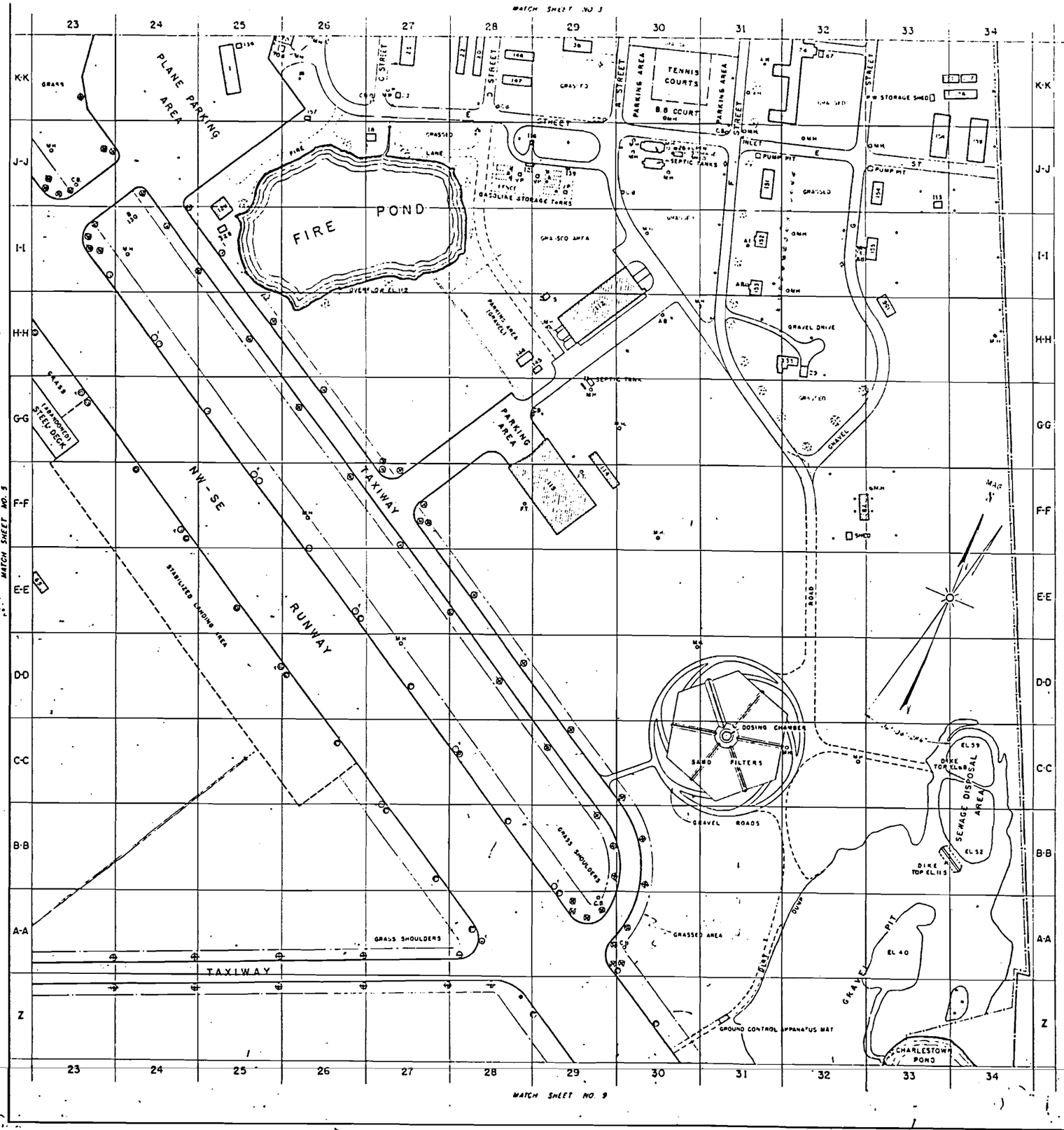
4-22	OPERATIONS	NE-SW RUNWAY	5800 X 200
12-30	OPERATIONS	NW-SE RUNWAY	4800 X 200
17-35	OPERATIONS	N - S RUNWAY	5250 X 200

P.W.D. DRAWING NO 16053	DEPARTMENT OF THE NAVY BUREAU OF YARDS & DOCKS U.S. NAVAL AUXILIARY AIR STATION, CHARLESTOWN, R.I.
DRAWN BY WHITNEY TRACED BY CHECKED BY BRADBURY D.F. FULTON, CIVIL ENGR. SUPERVISING ENGR. PUBLIC WORKS OFFICER	MASTER SHORE STATION DEVELOPMENT PLAN PART III - SECTION 2 GENERAL DEVELOPMENT PLAN

APPROVED 7-29-52 DATE COMMANDING OFFICER	SUBMITTED 7-28-52 DATE STATION DEVELOPMENT BOARD	SCALE 1" = 300' SHEET 1 OF 1 Y.&D. DWG. NO. 503903


MATCH SHEET NO 8
MATCH SHEET NO 4
MATCH SHEET NO 8
11 12 13 14 15 16 17 18 19 20 21 22
K-K J-J I-I H-H G-G F-F E-E D-D C-C B-B A-A Z
GRASS SHOULDER
RUNWAY
NE - SW
STABILIZED LANDING AREA
GRASS
WOOD DECK (ABANDONED)
TEERAMI DRIVE
STABILIZED LANDING AREA
NW - SE
RUNWAY
STEEL DECK (ABANDONED)
T-HO
TAXIWAY
MACHINE GUN RANGE
GRASS SHOULDERS
TAXIWAY
GRASS SHOULDERS
RUNWAY
N - S
GRAVEL ROAD
GRASS SHOULDERS
TAXIWAY
CHARLESTOWN (INTAKE) POND
NO. LOC. DESIGNATION FL EL
57 FF-11 FIRE HOSE HOUSE (FIELD NO 12)
58 MM-11 TEMPORARY STORAGE
55 CC-13 READY MAGAZINE
56 CC-13 INERT MAGAZINE
57 BB-13 PYROTECHNICAL MAGAZINE
58 BB-13 SMALL ARMS MAGAZINE
59 BB-14 FUSE & DETONATOR MAGAZINE
60 CC-11 HIGH EXPLOSIVE MAGAZINE
MAG
LEGEND
TEMPORARY FIELD LIGHT
MASONRY HEADWALL
EXISTING BUILDING
BITUMINOUS CONCRETE
PORTLAND CEMENT CONCRETE
FENCE (BARBED WIRE)
HYDRANT & GATE VALVE
T-HO TEST HOLE
FIELD LIGHTING
TAXI GUIDANCE - FLUSH - BLUE
CONTACT - FLUSH - WHITE & YELLOW
CONTACT - FLUSH - WHITE
HIGH INTENSITY UNIT
KEY
1 2 3 4 5 6 7 8 9 10
NOT ISSUED
SHEET NO 11 KEY PLAN
SCALE OF FEET
JUNE 30, 195
P.W.D. D'W'G. NO. 2318

L-2

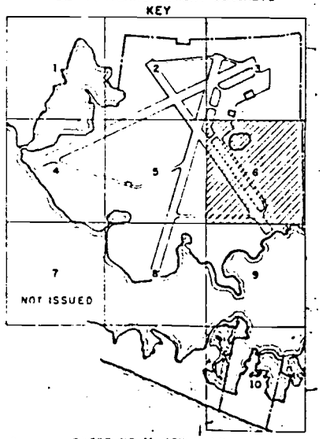


NO	LOC	DESIGNATION	FL EL
1	KK-23	ADMINISTRATION BLDG	24.75
16	JJ-27	FIRE PUMP STATION	14.00
20	KK-28	TRAINING OFFICE & LINK TRAINER	
22	KK-28	STA TRAING PECOD BLDG, ARMORY, MOVIES	
23	KK-27	INJECTION STATION (SEWAGE DISPOSAL)	
25	KK-27	PUBLIC WORKS BLDG	
26	JJ-30	CHLORINE BLDG (SEWAGE DISPOSAL)	
29	HH-32	GARAGE (QUARTERS "A")	
38	KK-29	FOUNDATION "B.O.Q DISTROYED BY FIRE"	
51	KK-34	PUBLIC WORKS STORAGE	
68	EE-23	GEAR HOUSE (CATAPULT)	
70	KK-26	PARACHUTE & ENGINE CHANGE SHOP	
70 A	KK-25	PARACHUTE LOFT	
74	KK-32	B.O.Q QUARTERS NO. 2	
78	FF-32	RADIO TRANMISSION BLDG	23.28
112	HH-29	SUPPLY BLDG	29.4
113	JJ-33	RADIO RECEIVER BLDG	29.08
114	FF-29	STORAGE PWD (PLUMBERS)	
115	FF-29	HANGAR NO 3	24.0
116	JJ-28	AVIATION GAS RING HOUSE	
121	JJ-28	TANK TRUCK LOADING STAND (100 OCTANE)	
126	KK-34	PUBLIC WORKS STORAGE	
127	KK-34	PAINTS STORAGE	
129	II-25	FLARES STORAGE	
129	II-25	CRASH FIRE STATION	
130	II-24	PUMP HOUSE - WELL NO 11	
133	HH-32	O.H.C. RESIDENCE	
134	KK-25	HEATER HOUSE (ADMIN BLDG)	
139	JJ-29	TANK TRUCK LOADING STAND (90 OCTANE)	
144	HH-28	COMMISSARY STORAGE (SUPPLY)	
145	HH-29	PAINT & OIL STORAGE (SUPPLY)	
146	KK-28	TRAINING BLDG	
147	KK-28	PWD STORAGE (ELECTRIC)	
151	JJ-31	OFFICERS QTRS (4 FAMILY)	29.0
152	II-31	" " (1 FAMILY)	29.4
153	II-31	" " "	29.6
154	JJ-33	E.M QUARTERS (4 FAMILY)	30.1
155	II-33	" " "	29.9
156	HH-33	" " "	29.8
157	KK-26	WATER TREATMENT BLDG	
158	KK-34	P.W STORAGE (SHOPS STORES)	
159	KK-34	P.W STORAGE	
87	KK-32	BOQ-STORAGE	
5	HH-23	AVIATION GAS SHACK	

LEGEND

- TEMPORARY FIELD LIGHT
- CATCH BASIN
- MANHOLE
- FUEL TANK
- HYDRANT
- FLAG POLE
- ELECTRIC POLE
- POLE OR POST
- VALVE PIT
- ANCHOR BOX
- MASONRY HEADWALL
- EXISTING BUILDING
- BUILDING UNDER CONSTRUCTION
- BITUMINOUS CONCRETE
- PAVING UNDER CONSTRUCTION
- STATION BOUNDARY
- FENCE (BARBED WIRE)
- TRANSFORMER
- STREET - PENETRATED GRAVEL
- TAXI GUIDANCE - FLUSH - BLUE
- CONTACT - FLUSH - WHITE
- CONTACT FLUSH WHITE & YELLOW
- FOUNDATION ONLY
- PORTLAND CEMENT CONCRETE

KEY



SHEET NO. 11 KEY PLAN

SCALE OF FEET

JUNE 30, 195

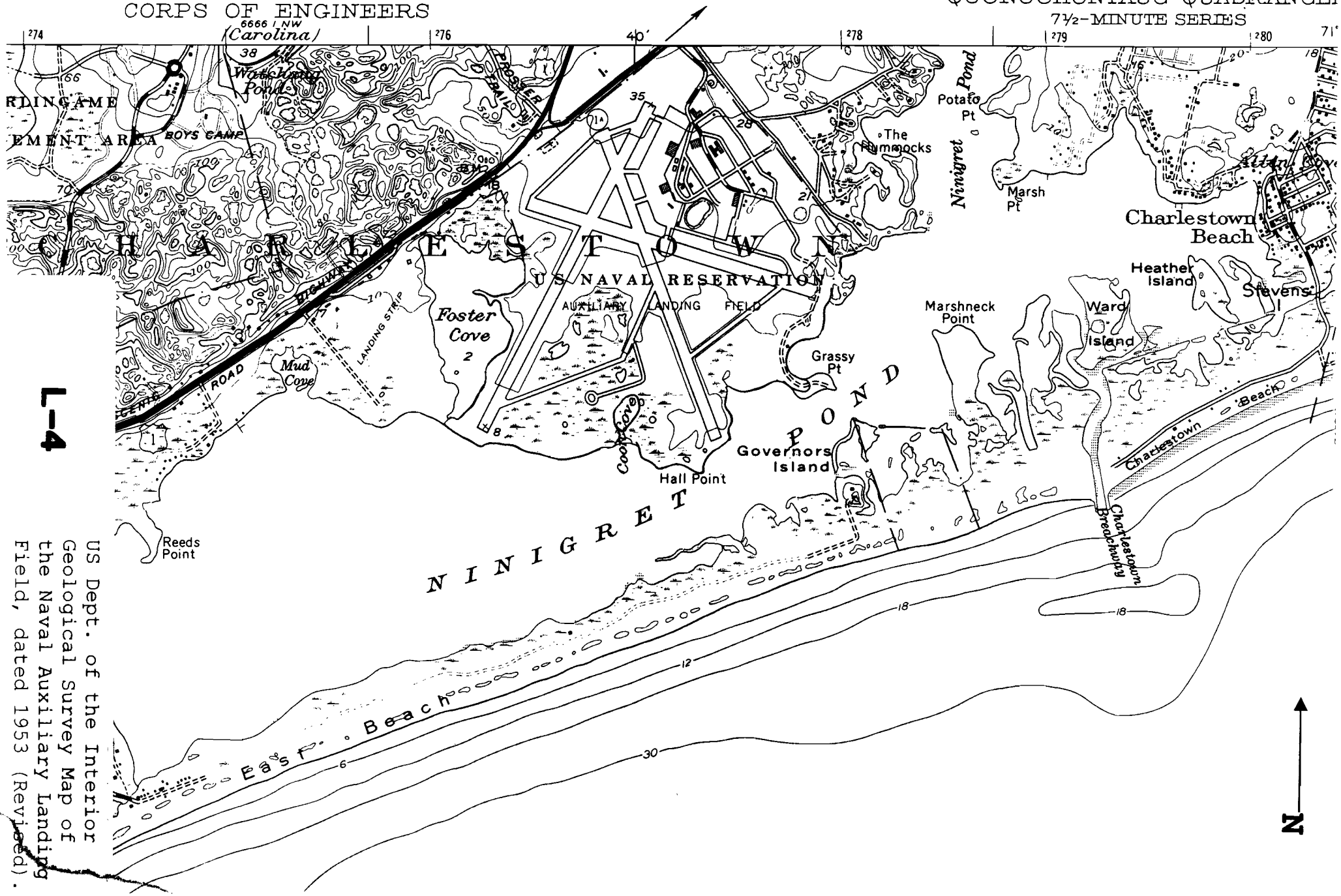
P.W.D. D.W.G. NO. 2318

L-3

RESTRICTED

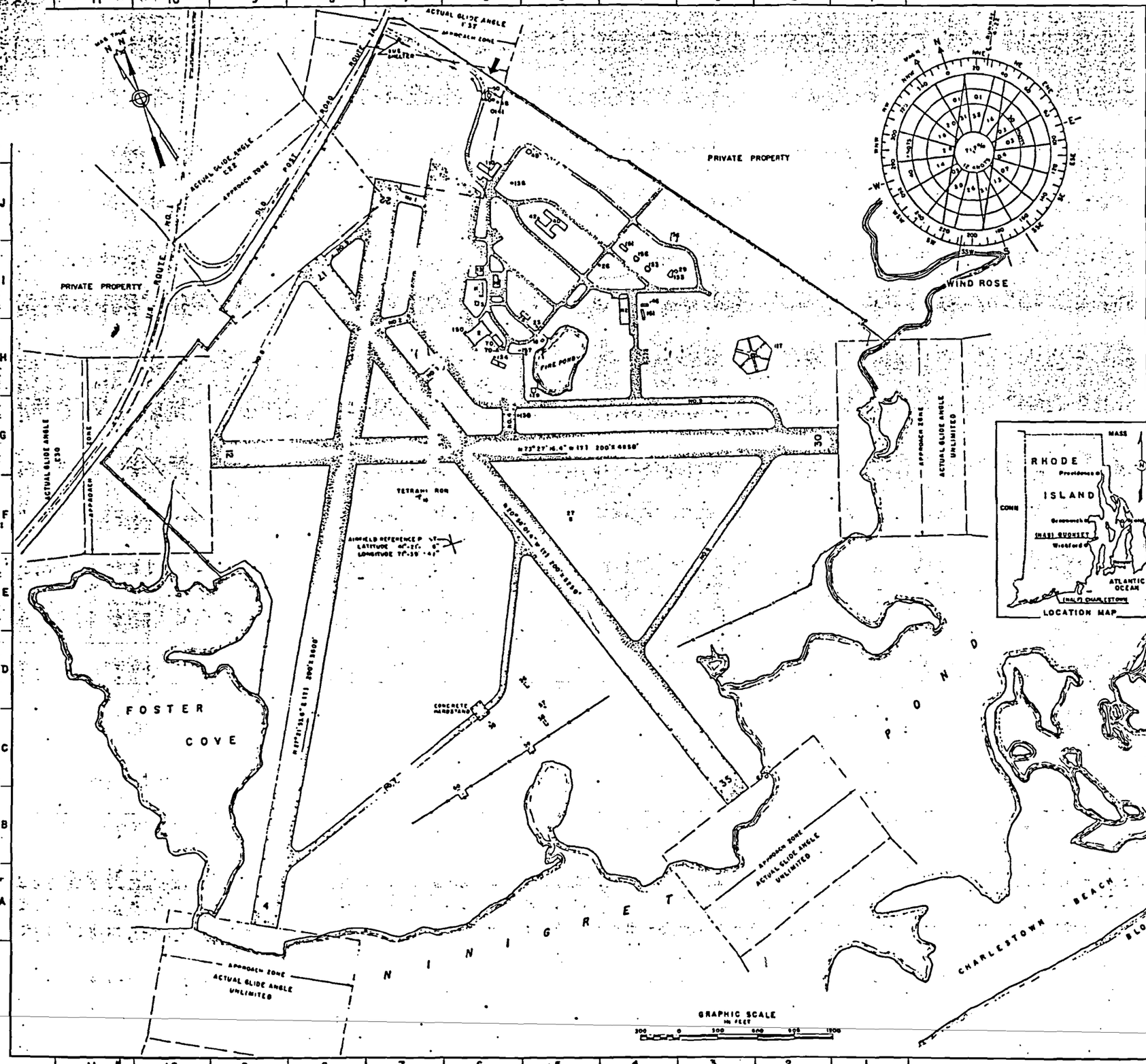
UNITED STATES
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS

RHODE ISLAND
(WASHINGTON COUNTY)
QUONOCHONTAUG QUADRANGLE
7½-MINUTE SERIES



L-4

US Dept. of the Interior
Geological Survey Map of
the Naval Auxiliary Landing
Field, dated 1953 (Revised).



INDEX OF STRUCTURES

EXISTING

BLDG NO.	LOC	DESCRIPTIVE TITLE CURRENT USE	QUANTITY	UNIT OF MEASURE	PLANNED USE
1	H-6	ADMINISTRATION BUILDING	8632	SF	
2	H-6	HANGAR No.1 & CONTROL TOWER	21708	SF	
3	I-6	BOILER HOUSE No.3	1122	SF	
13	I-6	FIRE STATION	3992	SF	
16	I-6	TRANSPORTATION GARAGE	4770	SF	
18	H-5	FIRE PUMP HOUSE	450	SF	
23	H-5	PUMPING STATION (SEWAGE DISPOSAL)	144	SF	
26	I-5	CHLORINE BUILDING (SEWAGE DISPOSAL)	425	SF	
27	F-5	PUMP HOUSE, WELL No.2	240	SF	
29	I-4	GARAGE, QUARTERS "A"	572	SF	
40	J-6	HEADQUARTERS BUILDING	16887	SF	
42	J-6	HEATER HOUSE	224	SF	
45	K-6	BOILER HOUSE No.2	1224	SF	
48	K-6	BOILER HOUSE No.4	195	SF	
50	K-6	GATE HOUSE	832	SF	
67	E-2	CRASH GEAR STORAGE	150	SF	
70	H-6	ENGINEERING AND ENGINE SHOP	4400	SF	
70-A	H-6	PARACHUTE LOFT	225	SF	
110	J-6	NAVY EXCHANGE & RECREATION BLDG.	10708	SF	
112	I-4	SUPPLY BUILDING	15000	SF	
127	H-2	SEWAGE TREATMENT PLANT	.175	MG	
128	H-5	CRASH FIRE STATION	1600	SF	
130	G-6	PUMP HOUSE, WELL No.H	96	SF	
133	I-4	QUARTERS, C.O.	1	FA	
134	H-6	HEATER HOUSE	432	SF	
136	J-6	HEATER HOUSE No.5	432	SF	
140	K-6	ELEVATED WATER TANK	30000	GA	
141	K-6	ELEVATED WATER TANK	125000	GA	
148	I-4	STORAGE BUILDING	864	SF	
150	H-6	TRANSFORMER VAULT, FIELD LIGHTING	341	SF	
151	I-4	PUBLIC QUARTERS, N.O.	4	FA	
152	I-4	PUBLIC QUARTERS, N.O.	1	FA	
153	J-4	PUBLIC QUARTERS, N.O.	1	FA	
157	H-5	WATER TREATMENT BUILDING	140	SF	
11	I-6		TO BE REMOVED		
25	H-6				
55 to 60	C,D-5,6				
135	J-4				
160	F-7	TETRAHEDRON			
161	I-4	STORAGE BUILDING			

LEGEND

- EXISTING BUILDINGS & STRUCTURES
- NAVY PROPERTY BOUNDARY LINE
- EXISTING FENCE
- EXISTING ROADS, WALKS & PAVED AREAS
- AIRFIELD PAVEMENTS
- SHORE LINE
- MAIN STATION ENTRANCE

REAL ESTATE DATA

ON STATION

LAND - CONDEMNATION	597.27
LAND - CONDEMNATION (B.&O. Decree)	4.50
TOTAL GOVT. OWNED	601.77

OFF STATION

LAND EASEMENT - CONDEMNATION (OBSTRUCTION LIGHTS)	1.33 Ac
LAND-IN-LEASE - PRIV. ENT. (3 PYLON SITES)	0.10 "

NO	AMD OR COR	DESCRIPTION OF AMENDMENT OR CORRECTION	DATE	APPROVED
4	AMD	Beach Tract Deleted	1/10/72	
3	AMD	GENERAL REVISION TO UPDATE	23 NOV 1971	
2	AMD	GENERAL REVISION TO UPDATE	14 NOV 1969	
1	AMD	GENERAL REVISION TO UPDATE	27 NOV 1968	

DRAWN BY A.S. DELEHOY
CHECKED BY A. DELEHOY
BRANCH HEAD
DIR. OF ENGRG.
DIRECTOR OF PL. DRAWING D.B. MacLEARN
SUBMITTED DATE
CONCUR
FOR CO DATE
APPROVED BY BUDOCKS

DEPARTMENT OF THE NAVY BUREAU OF YARDS & DOCKS

U.S. NAVAL AIR STATION QUONSET POINT, R.I.

AUX LDG FLD, CHARLESTOWN, R.I.

EXISTING CONDITIONS MAP

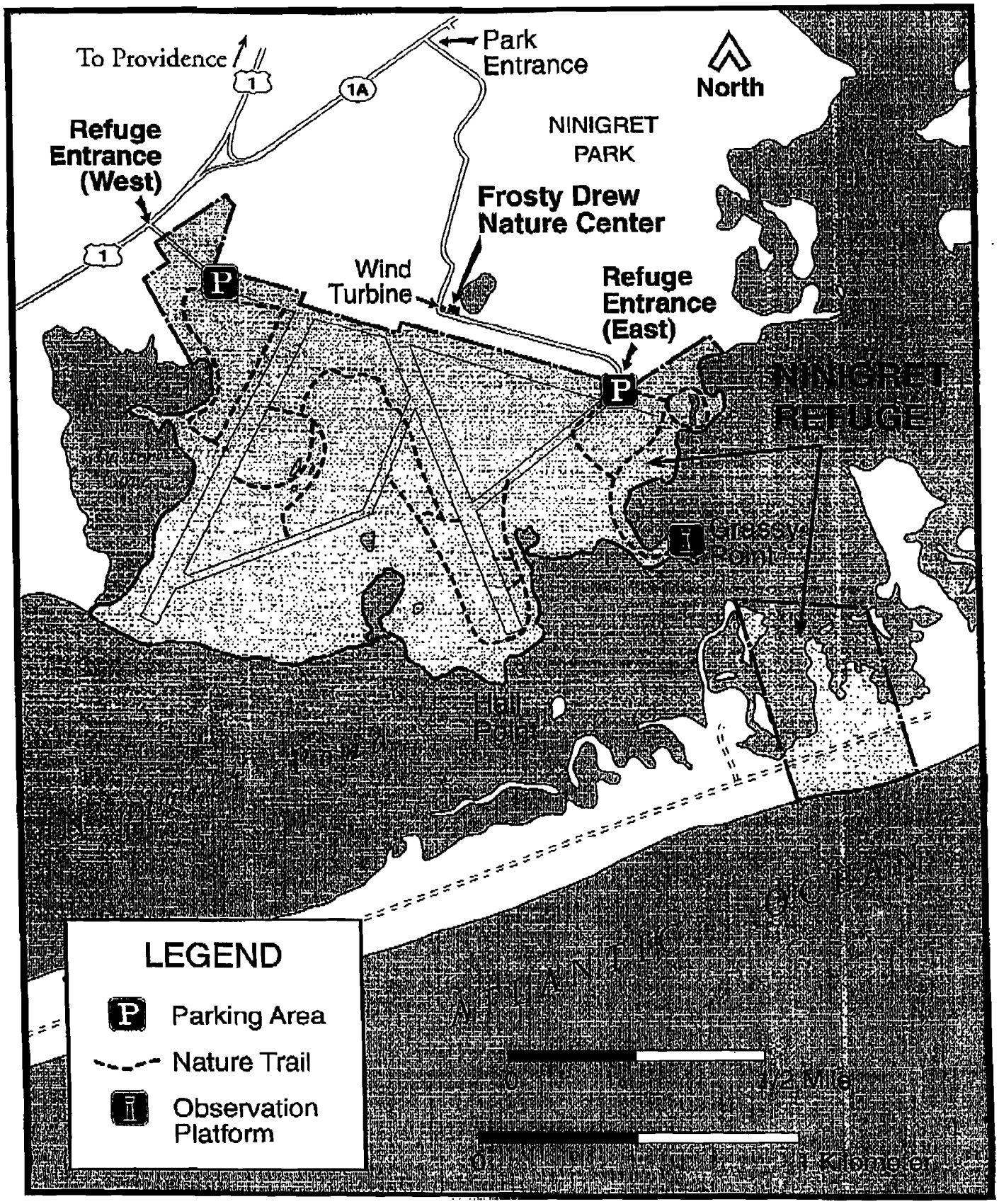
SCALE GRAPHIC

SHEET 2 OF 5

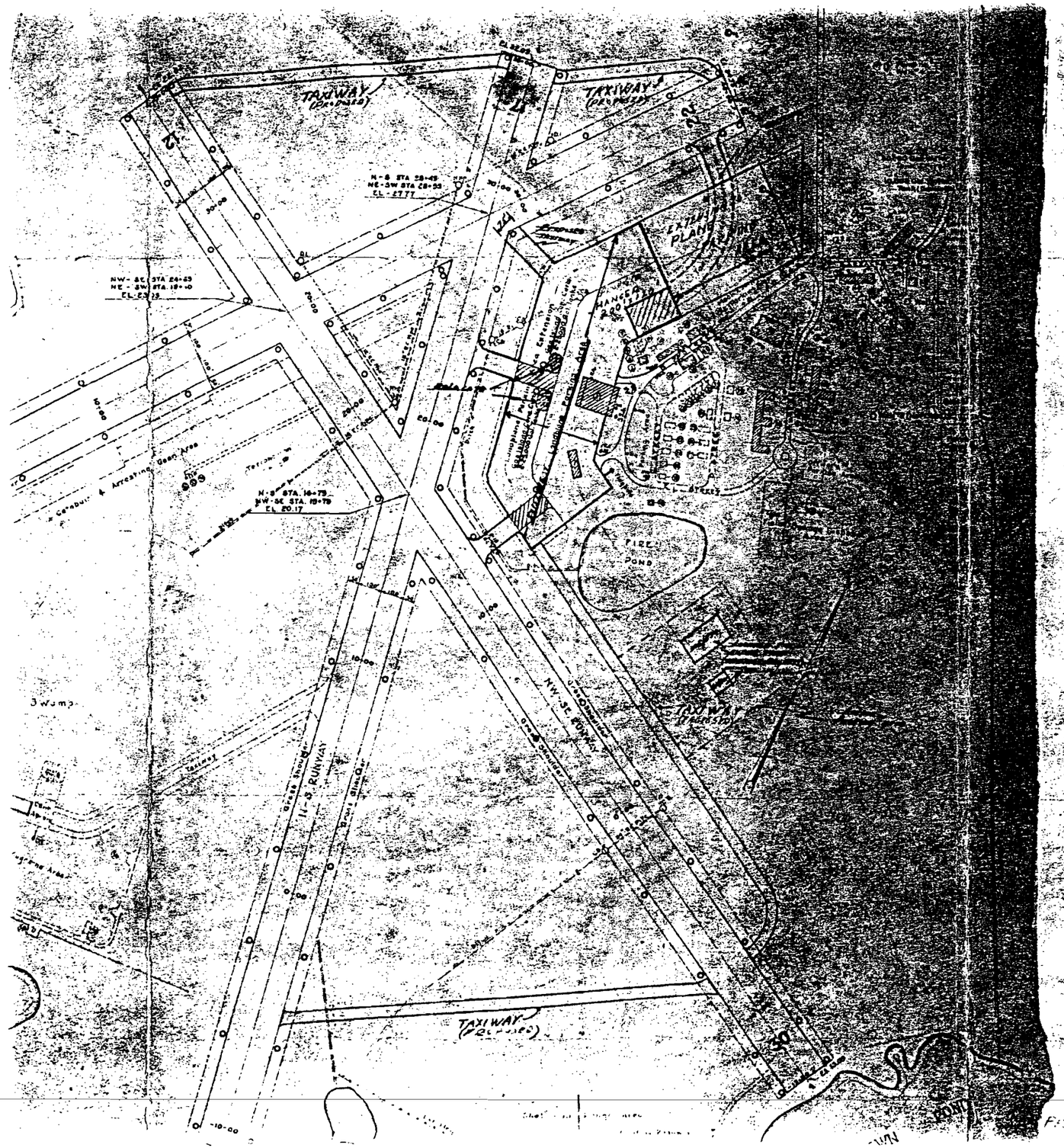
Y & D DWG No. 877978

P.W.D. DWG. NO. 20266

L-5



Ninigret Park and Wildlife Refuge Map, circa 1997



	NH-22	Jig Shop		
	NH-22	Ordnance Shop		
	NH-23	Supply Shop		
	NH-23	Tool Shack		
	NH-23	Carpenter Shop		
	NH-24	Paint		
	NH-27	Ordnance Shed		
	NH-27	Jiggy Bldg	Stores	7850
	NH-27	Fire Dept. Storage		
	NH-24	Fire Station		
	NH-24	Open Garage	Experiment Storage	
	NH-27	Salvage Yard Office		
	NH-25	Truck Garage	Automotive Repair	
	NH-28	Air Storage Tank	Stores	
	JJ-27	Fire Pump Shack	Fire Water System	
	KK-27	Hydrant Pump House		
	KK-27			
	KK-27			
	LL-27			
	LL-27			
	LL-28			
	LL-28			
	KK-28			
	LL-28			
	LL-27	Garage		
	NH-28	P.W. Carpenter Shop		
	NH-28	P.W. Paint		
	NH-28	P.W. Electric		
	NH-28	P.W. Plumbing		
	NH-28	P.W. Tool House		
	LL-28	Grease Company Bldg	Office	
	NH-29	Storage Bldg	Stores	
	LL-29	B.O. Quarters		32 [illegible]
	NH-28	Boiler House No.1	Heating System	30-17
	NH-29	Mess Hall		32 00
	LL-31	Ambulance Garage		
	NH-30	Dispensary		37 20
	NH-33	Shipk Stores Bldg		
	NH-31	Barracks No 4		34 75
	NH-32	" No 3		34 75
	OO-31	" No 1		34 75
	OO-32	Boiler House No.2		33 50
	PP-32	Barracks No 2		34 [illegible]
	PP-31	Pump House No.1	Domestic Water System	
	QQ-33	Boiler " No.2	Fire Zone Heating	
	SS-34	Pump " No.2	Domestic Water System	
	DU-30	Welding Instr. Shop		
	LL-33	P.W. Stores Yard	Dry Stores	
	[illegible]-17	Oil House		
	[illegible]	Tool Room		
	[illegible]-17	Ready Room		
	CC-19	Ready Room	Tech Gun range	
	CC-19	Inert		
	BB-19	Pyrotechnic Bldg		
	BB-19	Small Arms		
	BB-18	Fixed Ammunition		
	CC-19	High Explosive		
	W-29	Range House No.1	Other Gun Range	
	W-28	Storage Bldg		
	W-28	Range House No.2		
	W-27	Low Shed House	C. Range	
	W-28	High "		
	W-27	Control House		
	[illegible]-24	Low Shed "	C. Range	
	V-23	50 Sight Tower		

LEGEND

- Buildings under Construction
- Being Remodeled for Service from Existing Property
- Domestic Water System Street Valves
- Fire Service Water " Main
- Hydrants on Domestic Water System
- " " Fire Service
- Electric Hydrants
- Sewer
- Temporary Runway Lighting System
- Electric Service Poles
- Fire Alarm Locations
- Existing Buildings as of June 30, 1943

MAP OF
U. S. NAVAL AUXILIARY AIR FACILITY
CHARLESTOWN R.I.

SHOWING CONDITIONS ON

JUNE 30, 1943

SCALE OF FEET

PROPOSED TAXIWAYS SHOWN EXCEPT AS NOTED

L-7

FOSTER'S
COVE
BOUNDARY LINE
FENCE
TAXIWAY
TAXIWAY
12
22
NE-SW RUNWAY
4
TAXIWAY
CHARLESTOWN
POND
FIRE
POND
Sewage Disposal
Area
NW-SE RUNWAY
TAXIWAY
30
TAXIWAY
POND

L-8

ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR
NAVAL AUXILIARY LANDING FIELD
CHARLESTOWN, RHODE ISLAND
PROJECT NUMBER D0IR00804

APPENDIX M

ARCHIVE SEARCH REPORT CORRESPONDENCE

DEPARTMENT OF THE ARMY
ROCK ISLAND DISTRICT, CORPS OF ENGINEERS
CLOCK TOWER BUILDING - P.O. BOX 2004
ROCK ISLAND, ILLINOIS 61204-2004

REPLY TO
ATTENTION OF

http://www.mvr.usace.army.mil

CEMVR-EC-DO 2 June 2009

MEMORANDUM FOR RECORD

SUBJECT: Missing Technical Advisory Group (TAG) Package Transmittal Letter for Naval Auxiliary Landing Field, Project Number D01RI000804

1. A review of project records present at the U.S. Army Corps of Engineers, Rock Island District and Huntsville Center, revealed that the TAG package for the subject site exists. However, the transmittal letter from Huntsville Center was not located.

2. The TAG package was examined and is considered complete. Therefore, the subject report has been finalized without the transmittal letter, and the TAG review date, 27 April 1999, was used as the date of the final report.

Christopher J. Churney
Chief, Ordnance and Explosives Section
Rock Island District
U.S. Army Corps of Engineers

RESTORATION INFORMATION MANAGEMENT SYSTEM
FORMERLY USED DEFENSE SITES
PROJECT FACT SHEET
ORIGINAL DATE: October 1997
TAG REVIEW DATE: 27 APRIL 1999

1. **SITE NAME:** Naval Auxiliary Landing Field

SITE NUMBER: D01RI000800

LOCATION:
CITY: Charlestown
COUNTIES: Washington
STATE: Rhode Island

PROJECT NUMBER: D01RI000804

CATEGORY: OE

INPR RAC: 3

ASR RAC: 3

TAG RAC: 3

2. **POC's:**

GEOGRAPHIC DISTRICT:
Name: Bill Holtham
Office: CENAE-PD-M
Phone: (978) 318-8670

GEOGRAPHIC DIVISION:
Name: Eileen Barry
Office: CENAD-PP-M
Phone: (718) 491-8767

ASR/INPR TEAM:
Name: Richard L. Pike
Office: CEHNC-OE-DC
Phone: (256) 895-1559

HEADQUARTERS:
Name: James Gibson
Office: CEMP-RF
Phone: (202) 761-4709

ASR SUPPORT TEAM:
Name: Harlan E. Carlson
Office: CEMVR-ED-DP
Phone: (309) 782-1493

ASR TECHNICAL REVIEWER:
Name: C. Fredrick Girard
Office: SIOAC-ESL
Phone: (918) 420-8849

3. **SITE DESCRIPTION:** The former Naval Auxiliary Landing Field consisted of approximately 631.3 acres and is located in Washington County, southeast of Charlestown, Rhode Island.

4. **SITE HISTORY:**

a. Between 28 December 1942 and 25 June 1943, 631.3 acres of land were acquired by condemnation at Charlestown, Rhode Island, to serve as an outlying auxiliary field under the control of Quonset Point Naval Air Station, Rhode Island.

b. The field was commissioned on 1 January 1943 and soon student pilots begin learning aircraft carrier takeoff and landing techniques. Gunnery and bombing skills were honed utilizing their .30 and .50 caliber machine guns, 20mm cannon, and several types of practice bombs on various coastal and island targets.

c. Night fighter training continued at the field until 31 March 1949, with deactivation occurring in 1950.

d. The Naval Auxiliary Landing Field underwent several changes in name and readiness status during the 1950's and 1960's; however, the field was mainly used by the Rhode Island Air National Guard.

e. On 12 November 1969 the first of five land transfers took place, deeding various parcels to the City of Charlestown, and to the Department of Fish and Wildlife. All lands formerly utilized by the US Navy and/or the War Department were completely transferred by 18 June 1982.

5. **PROJECT DESCRIPTION:**

Area A:	Size, Acres:	1.00
	Former Use:	Administrative Area
	Present Use:	Recreational complex
	Probable End Use:	Same as above
	Ordnance Presence:	None
Area B-1:	Size, Acres:	2
	Former Use:	Machine Gun Range
	Present Use:	Ninigret Wildlife Preserve
	Probable End Use:	Same as above
	Ordnance Presence:	Confirmed
	Type:	Projectile, 20mm Ball & small arms
Area B-2:	Size, Acres:	2
	Former Use:	Western Access Road to Ninigret Park
	Present Use:	Same as above
	Probable End Use:	Same

	Ordnance Presence:	Confirmed
	Type Ordnance:	Same as Area B-1
Area C:	Size, Acres:	2.1
	Former Use:	High Explosive Storage
	Present Use:	Wildlife Preserve
	Probable End Use:	Same as Above
	Ordnance Presence:	Potential
	Type :	No OE presence found on site. Inland Toxic Waste dump, may be buried OE
Area D:	Size, Acres:	1.3
	Former Use:	Small Arms, Detonator and Fuse Magazines
	Present Use:	Wildlife Preserve
	Probable End Use	Same as above
	Ordnance Presence:	None
Area E:	Size, Acres:	1
	Former Use:	Pyrotechnic and Inert Magazines
	Present Use:	Wildlife Preserve
	Probable End Use:	Same
	Ordnance Presence:	None
Area F:	Size, Acres:	6
	Former Use:	Skeet and Trap Ranges
	Present Use:	Wildlife Preserve
	Probable End Use:	Same
	Ordnance Presence:	None
Area G:	Size, Acres:	6
	Former Use:	Dump Site
	Present Use:	Same
	Probable End Usage:	Same
	Ordnance Presence:	Potential
	Type:	Practice Bombs
Area H:	Size, Acres:	3
	Former Use:	Hunter Island DumpSite
	Present Use:	Wildlife Preserve
	Probable End Use:	Same
	Ordnance Presence:	Potential
	Type:	20mm
Area I:	Size, Acres:	3
	Former Use:	Pistol Range
	Present Use:	Wildlife Preserve
	Probable End Use:	Same as above

	Ordnance Presence:	None
Area J:	Size, acres:	Approximately 604.9
	Former Use:	All other lands
	Present Use:	Wildlife Refuge
	Probable End Use:	Same as above
	Ordnance Presence:	None

6. **CURRENT STATUS:** The Archives Search Report (ASR) for the Naval Auxiliary Landing Field, Charlestown, RI was completed by the U.S. Army Corps of Engineers, Rock Island District, in September, 1998.

7. **STRATEGY:**

Area A:	NDAI
Area B-1:	NDAI
Area B-2:	NDAI
Area C:	EE/CA
Area D:	NDAI
Area E:	NDAI
Area F:	NDAI
Area G:	EE/CA
Area H:	EE/CA
Area I:	NDAI
Area J:	NDAI

8. **CURRENT STATUS:** The Huntsville Center Technical Advisory Group (TAG) met and discussed this ASR on 27 April 1999 and determined an EE/CA for Areas C, G and H as there was confirmed/potential OE found in these areas. The TAG determined No DoD Action Indicated (NDAI) for Areas A, B-1, B-2, D, E, F, I and J.

There are known Federally-and State-listed species occurring in the site area. 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.

9. **SCHEDULE SUMMARY:**

Phase	Original Start	Schedule Start	Actual Start	Original Complete	Schedule Complete	Actual Complete
EE/CA						

10. **FUNDING/BUDGET SUMMARY:**

Year	Phase	Exec FOA	In-House Required	Contract Required	Funds Obligated
1	EE/CA		$50,000	$250,000	
2	RD		$50,000		
3	RA		$100,000	$2,000,000	(6 months)

ED-ES provides estimate of EE/CA based on number of samples, size of area, plan of action, etc. This is a programming estimate to be used for programming project start in appropriate FY.

U. S. ARMY ENGINEER DIVISION HUNTSVILLE D0RI000804 CORPS OF ENGINEERS

DESIGN REVIEW COMMENTS PROJECT NAVAL AUXILIARY LANDING FIELD, CHARLESTOWN, RHODE ISLAND

- ☐ SITE DEV
- ☐ ENVIR PROT&UTIL
- ☐ ARCHITECTURAL
- ☐ STRUCTURAL
- ☐ MECHANICAL
- ☐ MFG TECHNOLOGY
- ☐ ELECTRICAL
- ☐ INST & CONTROLS
- ☐ SAFETY
- ☐ ADV TECH
- ☐ ESTIMATING
- ☐ SPECIFICATIONS
- ☐ SYSTEMS ENG
- ☐ VALUE ENG
- ☒ OE
- ☐ OTHER

REVIEW ASR\10-34-98
DATE 8 OCTOBER 1998
NAME MICHAEL SLOVAK\256-895-1595 MES

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
1.	General	After reviewing the "Findings" and "Conclusions and Recommendations", I provide the following comments: I agree with the score of RAC 5 NOFA for area's A, D, E, F, I, and J of this site. I agree with the score of RAC 3 for area's C, G, and H of this site. I disagree with the score of RAC 5 NOFA for area's B-1 and B-2. 20mm projectiles have been found in both of these area's. Area B-2 is a fill area, with 20mm projectiles found on the surface in this area, there is a possibility that other OE may be located in this fill. While area B-1 may have been just a "Shooting in the Butt" range, with only 20mm target practice being found on the surface, further investigation needs to be performed to determine if any OE was buried in this area. Recommend ASR authors revise the RAC sheet for these two area's. Recommend that an EE/CA be scheduled for area's B-1, B-2, C, G, and H. Recommend No Further Action (NOFA) for area's A, D, E, F, I, and J.	1. Non-concur with recommendations for Areas B-1 & B-2. TAG review substantiated findings of the ASR. Concur with all else.

ACTION CODES:
A - ACCEPTED/CONCUR
D - ACTION DEFERRED
W - WITHDRAWN
N - NON-CONCUR
VE - VE POTENTIAL/VEP ATTACHED

U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE — CORPS OF ENGINEERS

D01RI000804

DESIGN REVIEW COMMENTS — **PROJECT** Naval Auxiliary Landing Field, RI

X☐ ASR/INPR TEAM

REVIEW ASR
DATE 7 April 1999
NAME C. Fredrick Girard (918) 420-8849

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
1.	Findings & C&R Cover Sheets	Change "Auxilary" to "Auxiliary"	1. Concur.

18 Apr 94
Previous editions obsolete

RISK ASSESSMENT PROCEDURES FOR ORDNANCE AND EXPLOSIVE WASTE (OEW)SITES

Site Name: Naval Auxiliary Landing Field
Site Location: Charlestown, R.I.
DERP Project #: DO1RI0008 **Phone No.** (617) 647-8203
Rater's Name: W. Kavanaugh **Organization:** CENED-ED-DC
Date Completed: 11 April 1996 **RAC Score:** 3

OEW RISK ASSESSMENT:
This risk assessment procedure was developed in accordance with MIL-STD 882C and AR 385-10. The RAC score will be used by CEHND to prioritize the remedial action at Formerly Used Defense Sites. The OEW risk assessment should be based upon best available information resulting from records searches, reports of Explosive Ordnance Disposal (EOD) detachment actions, and field observations, interviews, and measurements. This information is used to assess the risk involved based upon the potential OEW hazards identified at the site. The risk assessment is composed of two factors, hazard severity and hazard probability. Personnel involved in visits to potential OEW sites should view the CEHND videotape entitled "A Life Threatening Encounter: OEW."

Part I. **Hazard Severity.** Hazard severity categories are defined to provide a qualitative measure of the worst credible mishap resulting from personnel exposure to various types and quantities of unexploded ordnance items.

TYPE OF ORDNANCE

A. Conventional Ordnance and Ammunition	VALUE
Medium/Large Caliber (20 mm and larger)	10
Bombs, Explosive	10
Grenades, Hand and Rifle, Explosive	10
Landmines, Explosive	10
Rockets, Guided Missiles, Explosives	10
Detonators, Blasting Caps, Fuzes, Boosters, Bursters	6
Bombs, Practice (w/spotting charges)	6
Grenades, Practice (w/spotting charges)	4
Landmines, Practice (w/spotting charges)	4
Small Arms (.22 cal - .50 cal)	1
Conventional Ordnance and Ammunition	
(Select the largest single value)	10

What evidence do you have regarding conventional OEW?
The Auxiliary Landing Field was one of three auxiliary training fields under the jurisdiction of the Quonset Point Naval Air Station. All of these training stations were known to have used practice rockets at the South Beach practice bombing range located on the island of Martha's Vineyard, in Massachusetts. It is not known if other types of OEW were used because a review of site plans does not show the existence of any magazine storage facilities.

B. Pyrotechnics (For munitions not described above.)	**VALUE**
Munition (Container) containing White Phosphorus (WP) or other Pyrophoric Material (i.e., Spontaneously Flammable)	10
Munition Containing a Flame or Incendiary Material (i.e., Napalm, Triethylaluminum Metal Incendiaries)	6
Flares, Signals, Simulators, Screening Smokes (other than WP)	4
Pyrotechnics <u>(Select the largest single value)</u>	**0**

What evidence do you have regarding pyrotechnics?

C. Bulk High Explosives
(Not an integral part of conventional ordnance; uncontainerized.)

	VALUE
Primary or Initiating Explosives (Lead Styphnate, Lead Azide, Nitroglycerine,Mercury Azide, Mercury Fulminate, Tetracene, etc.)	10
Demolition Charges	10
Secondary Explosives (PETN, Compositions A, B, C, Tetryl, TNT,RXD,HMX, HBX, Black Powder, etc.)	8
Military Dynamite	6
Less Sensitive Explosives (Ammonium Nitrate, Explosive D, etc.)	3
High Explosives <u>(select the largest single value)</u>	**0**

What evidence do you have regarding bulk explosives?

D. Bulk Propellants (Not an integral part of rockets, guided missiles, or other conventional ordnance; uncontainerized)

	VALUE
Solid or Liquid Propellants	6
Propellants **(Select the largest single value)**	**0**

What evidence do you have regarding bulk propellants?

E. Chemical Warfare Material and Radiological Weapons	**Value**
Toxic Chemical Agents (Choking, Nerve, Blood, Blister)	25
War Gas Identification Sets	20
Radiological	15
Riot Control Agents (Vomiting, Tear)	5
Chemical and Radiological **(Select the largest single value)**	**0**

What evidence do you have of chemical/radiological OEW?

TOTAL HAZARD SEVERITY VALUE
(Sum of Largest Values for A through E--Maximum of 61) **10**

Apply this value to Table 1 to determine Hazard Severity Category.

TABLE 1
HAZARD SEVERITY*

Description	Category	Hazard Severity Value
CATASTROPHIC	I	21 and Greater
CRITICAL	II	10 to 20
MARGINAL	III	5 to 9
NEGLIGIBLE	IV	1 to 4
**NONE		0

*Apply Hazard Severity Category to Table 3

** If Hazard Severity Value is 0, you do not need to complete Part II. Proceed to Part III and use a RAC Score of 5 to determine your appropriate action.

Part II. Hazard Probability. The probability that a hazard has been or will be created due to the presence and other rated factors of unexploded ordnance or explosive materials on a formerly used DOD site.

AREA, EXTENT, ACCESSIBILITY OF OEW HAZARD

A. Locations of OEW Hazards	VALUE
On the surface	5
Within Tanks, Pipes, Vessels or Other Confined locations	4
Inside walls, ceilings, or other parts of Buildings or structures.	3
Subsurface	2
Location (Select the single largest value)	0

What evidence do you have regarding location of OEW?
No visible evidence of OEW.

B. Distance to nearest inhabited locations or structures likely to be at risk from OEW hazard (roads, parks, playgrounds, and buildings).

	VALUE
Less than 1250 feet	5
1250 feet to .5 miles	4
5 miles to 1.0 mile	3
1.0 mile to 2.0 miles	2
Over 2 miles	1
Distance (Select the single largest value)	3

What are the nearest inhabited structures?
Full time residential and summer residential.

C. Numbers of buildings within a 2 mile radius measured from the OEW hazard area, not the installation boundary.

	VALUE
26 and over	5
16 to 25	4
11 to 15	3
6 to 10	2
1 to 5	1
0	0
Number of Buildings (Select the single largest value)	5

What are the nearest structures? Park facilities and residential homes.

D. ypes of Buildings (within a 2 mile radius)

	VALUE
Educational, Child Care, Residential, Hospitals, Hotels, Commercial, Shopping Centers	5
Industrial , Warehouse, etc.	4
Agricultural, Forestry, etc.	3
Detention, Correctional	2
No buildings	0

Types of Buildings (Select the largest single value) 5

Describe types of building in the area: Mostly summer type cottages.

E. Accessibility to site refers to access by humans to ordnance and explosive wastes. Use the following guidance:

BARRIER	VALUE
No barrier or security system	5
Barrier is incomplete (e.g., in disrepair or does not completely surround the site). Barrier is intended to deny egress from the site, as for a barbed wire fence for grazing.	4
A barrier, (any kind of fence in good repair) but no separate means to control entry. Barrier is intended to deny access to the site.	3
Security guard, but no barrier	2
Isolated site	1
A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel) which continuously monitors and controls entry onto the facility; or an artificial or natural barrier (e.g., a fence combined with a cliff), which completely surrounds the facility; and a means to control entry, at all times,through the gates or other entrances to the facility (e.g., and attendant, television monitors, locked entrances, or controlled roadway access to the facility).	0

Accessibility (Select the single largest value) 5

Describe the site accessibility. The site is a public park and is open to the public all year long.

F. Site Dynamics - This deals with site conditions that are subject to change in the future, but may be stable at the present. Examples would be excessive soil erosion by beaches or streams, increasing land development that could reduce distances from the site to inhabited areas or otherwise increase accessibility.

	VALUE
Expected	5
None Anticipated	0

Site Dynamics (Select largest value) 0

Describe the site dynamics.

TOTAL HAZARD PROBABILITY VALUE 18
(Sum of Largest Values for A through F--Maximum of 30)
Apply this value to Hazard Probability table 2 to determine Hazard Probability Level.

TABLE 2
HAZARD PROBABILITY

Description	Level	Hazard Probability Value
FREQUENT	A	27 or Greater
PROBABLE	B	21 to 26
OCCASIONAL	C	15 to 20
REMOTE	D	8 to 14
IMPROBABLE	E	Less than 8

*Apply Hazard Probability Level to Table 3.

Part III. Risk Assessment. The risk assessment value for this site is determined using the following Table 3. Enter with the results of the hazard probability and hazard severity values.

TABLE 3

Probability Level	Frequent A	Probable B	Occasional C	Remote D	Improbable E
Severity Category:					
Catastrophic I	1	1	2	3	4
Critical II	1	2	3	4	5
Marginal III	2	3	4	4	5
Negligible IV	3	4	4	5	5

RISK ASSESSMENT CODE (RAC)

RAC 1 Expedite INPR, recommending further action by CEHND - Immediately call CEHND-ED-SY--commercial 205-995-4968 or DSN 645-4968.

RAC 2 High priority on completion of INPR - Recommend further action by CEHND.

RAC 3 Complete INPR - Recommend further action by CEHND.

RAC 4 Complete INPR - Recommend further action by CEHND.

RAC 5 Usually indicates that no further action (NOFA) is necessary. Submit NOFA and RAC to CEHND.

Part IV. Narrative. Summarize the documented evidence that supports this risk assessment. If no documented evidence was available, explain all the assumptions that you made.

The investigation revealed no OEW hazards on site. Assumption was made based on historical data.

ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR
NAVAL AUXILIARY LANDING FIELD
CHARLESTOWN, RHODE ISLAND
PROJECT NUMBER D0IR00804

APPENDIX N

PROJECT AREA BIBLIOGRAPHY

APPENDIX N
PROJECT AREA BIBLIOGRAPHY

Document ID	Project Area(s)	OE Classification	Document Name	Document Date	Document Source	Description and Comments
1	Area C	Potential	Aerial Photograph	12-Oct-43	US Naval Construction Bn	Ammunition Storage Area and Inland Toxic Dump
			Charlestown NALF		Port Hueneme, CA	
2	Area G	Potential	Aerial Photograph	18-Oct-45	US Naval Construction Bn	Dump Site
	Area H	Potential	Charlestown NALF		Port Hueneme, CA	Hunter Island Dump Site
3	Area C	Potential	General Development Plan	29-Jul-52	Naval Historical Center	Drawing L-1 Ammuniton Storage and Toxic Dump
					Washington D.C.	
4	Area C	Potential	Public Works Drawing	circa 1950's	Naval Historical Center	Ammunition Storage Area and Inland Toxic Dump
	Area G	Potential			Washington D.C.	Dump Site
5	Area C	Potential	Ammunition & Stowage Rpt	29-Oct-53	Naval Historical Center	E-5 Inspection Report of Ammuniton Storage Area
			Charlestown, NALF		Washington D.C.	
6	Area G	Potential	Aerial Photograph	21-Apr-54	US Naval Contruction Bn	Dump Site
	Area H	Potential	Charlestown NALF		Port Hueneme, CA	Hunter Island Dump Site
7	Area C	Potential	Findings & Determination	5-Mar-85	USACE, New England Div.	E-8 Listing the Inland (Toxic Waste) Dump
	Area H	Potential	Project No. DORI000801		Waltham, MA	E-8 Listing the Hunter Island (Toxic Waste) Dump
8	Area H	Potential	Application to Conduct	Undated	Local Resident	F-14 Request to excavate buried aircraft from the
			Archeological Investigation			Hunter Island Dump Site
9	Area G	Potential	Interview I-1	27-Oct-97	On- Site Interview	Confirms Practice Ordnance uncovered
	Area H	Potential				Reports Story of 20mm Ammunition in Pond
10	Area C	Potential	Interview I-5	27-Oct-97	On- Site Interview	Indicates possible ammunition found in Area
	Area G	Potential				Reports Story of Practice Ordnance uncovered
	Area H	Potential				Reports Story of 20mm Ammunition in Pond
11	Area G	Potential	Site Photo J-10	27-Oct-97	On-Site Photo	MK 15 Mod 2 Practice bomb taken from Dump Site

ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR
NAVAL AUXILIARY LANDING FIELD
CHARLESTOWN, RHODE ISLAND
PROJECT NUMBER D01RI000804

APPENDIX O

REPORT DISTRIBUTION LIST

APPENDIX O

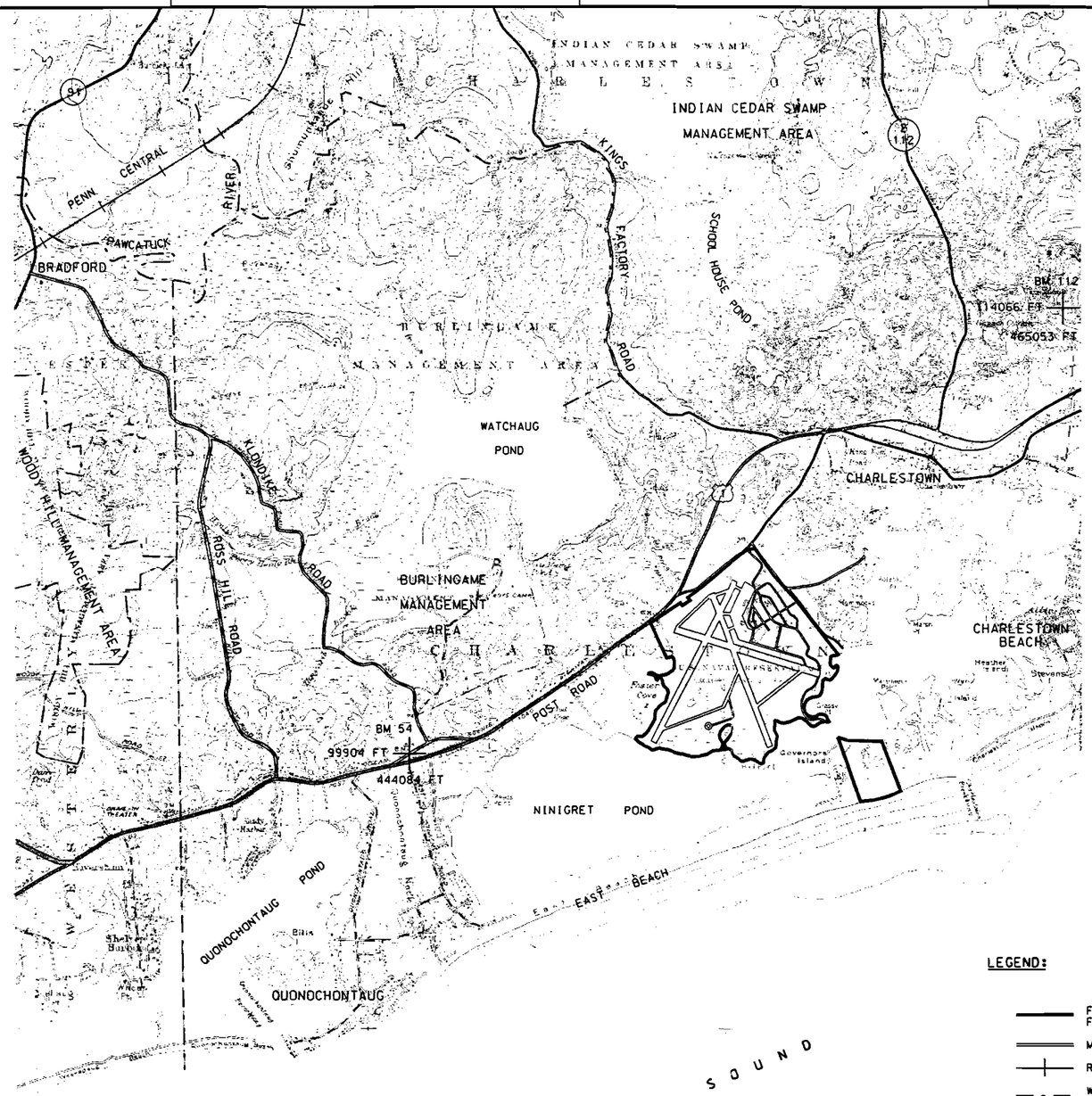
REPORT DISTRIBUTION LIST

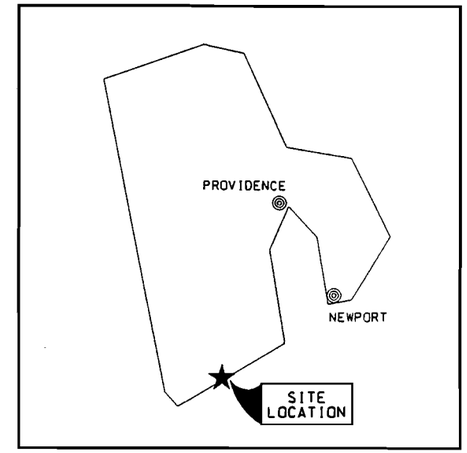
I - Final Report
II - Findings Report
III - Routed Final Report

	I	II	III
Commander, U.S. Army Corps of Engineers Engineering & Support Center, Huntsville ATTN: CEHNC-ED-SY-A P.O. Box 1600 Huntsville, AL 35807-4301	3	-	-
Commander, U.S. Army Engineer Division Mississippi Valley ATTN: CEMVD-MD-PM P.O. Box 80 Vicksburg, MS 39181-0080	-	-	-
Commander, U.S Army Engineer, New England Division ATTN: CENAE-RE-AM 424 Trapelo Road Waltham, MA 02254-9149	3	-	-
Commander, Defense Ammunition Center ATTN: SJMAC-ESM 1C Tree Road, Bldg. 35 McAlester, OK 74501	3	-	-
Commander, U.S. Army Health Clinic ATTN: MCXP-PMA Rock Island Arsenal Rock Island, IL 61201	-	-	-
Commander, U.S. Army Engineer District, Rock Island P.O. Box 1600 Rock Island, IL 61201			
Internal			
CEMVR-EC	-	-	1
-EC-D	-	-	1
-EC-DO	3	-	-

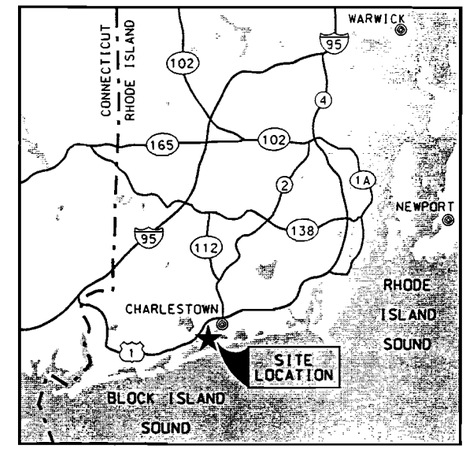
ORDNANCE AND EXPLOSIVE
ARCHIVES SEARCH REPORT
FOR
NAVAL AUXILIARY LANDING FIELD
CHARLESTOWN, RHODE ISLAND
PROJECT NUMBER D01RI000804

REPORT PLATES





STATE MAP OF RHODE ISLAND



VICINITY MAP

LEGEND:

- FORMER NAVAL AUXILIARY LANDING FIELD SITE BOUNDARY
- MAJOR ROAD
- RAILROAD
- WILDLIFE MANAGEMENT AREA BOUNDARY
- STATE PLANE COORDINATE

2000 0 2000 4000 FEET

NOTE:

STATE PLANE COORDINATES LOCATED AT BENCHMARKS 54 AND 112.

Revisions			
Symbol	Description	Date	Approved

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

US Army Corps of Engineers Rock Island District

NAVAL AUX LANDING FIELD
CHARLESTOWN, RI

SITE MAP

Designed by: H.E.CARLSON
Drawn by: K.D.MARKER
Checked by: N.IAIENNARO
Reviewed by: R.E.HOFFMAN
Approved by: JAMES V. MUDD COL. CE

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Date:
Drawing Code:
Sheet reference number:
Project Number: D01RI000804

PLATE 1

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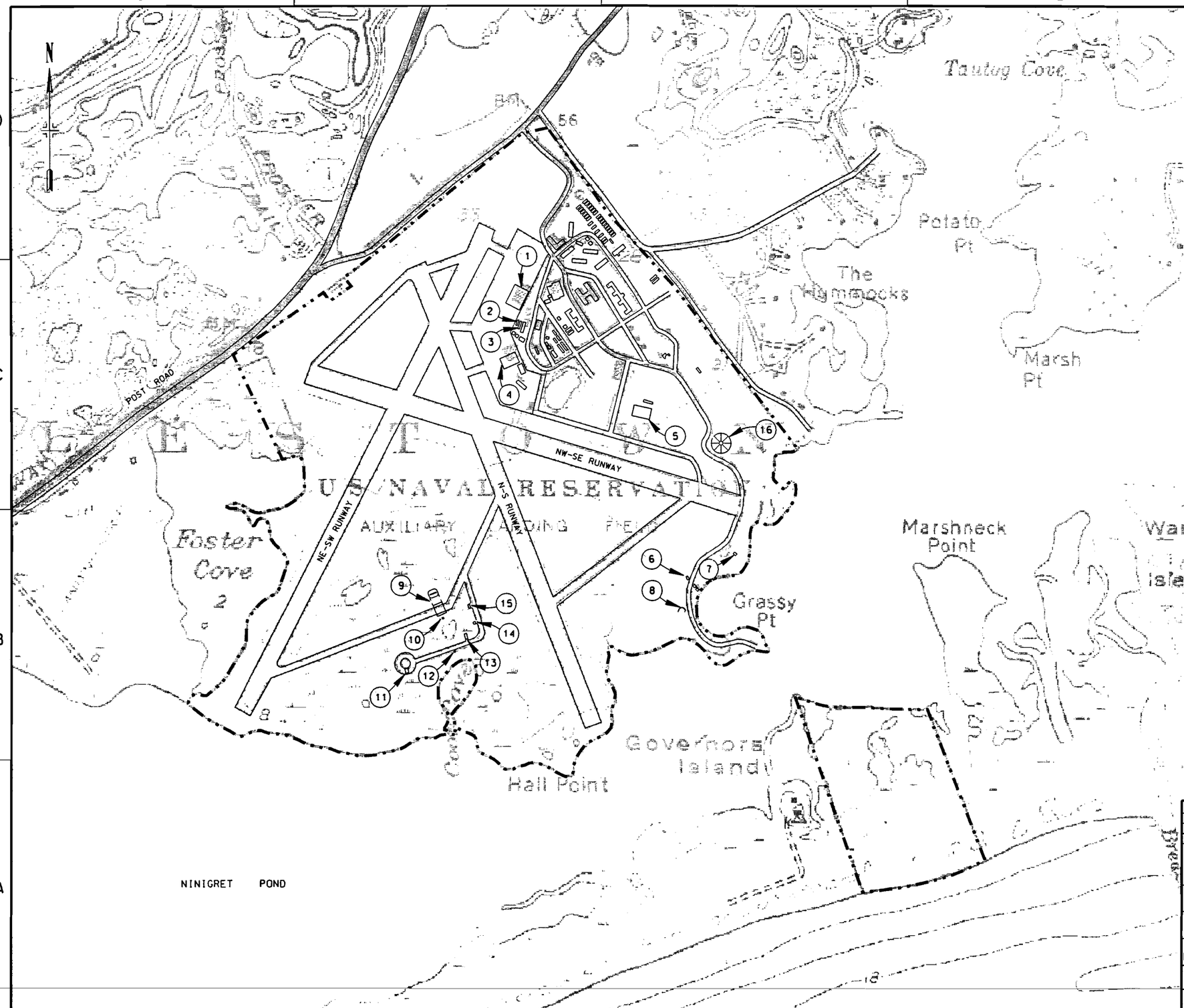

LANDING FIELD SUMMARY	
LOCATION	DESCRIPTION
1	HANGAR # 1
2	AMMUNITION OFFICES
3	ORDNANCE OFFICES
4	HANGAR # 2
5	HANGAR # 3
6	SKEET & TRAP STORAGE SHEDS
7	TRAP RANGE
8	SKEET RANGE
9	MACHINE GUN RANGE (SHOOTING IN BUTT)
10	READY MAGAZINE
11	HIGH EXPLOSIVE MAGAZINE
12	FUSE & DETONATOR MAGAZINE
13	SMALL ARMS MAGAZINE
14	PYROTECHNIC MAGAZINE
15	INERT MAGAZINE
16	WASTE TREATMENT

LEGEND:

- NAVAL AUXILIARY LANDING FIELD SITE BOUNDARY
- MAJOR ROAD

500 0 500 1000 FEET

Revisions			
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CORPS OF ENGINEERS
ROCK ISLAND, ILLINOIS

US Army Corps of Engineers Rock Island District

NAVAL AUX LANDING FIELD
CHARLESTOWN, RI

FACILITY LAYOUT
CIRCA 1943

Designed by: H.E.CARLSON
Drawn by: K.D.MARKER
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Reviewed by: R.E.HOFFMAN
Approved by: JAMES V. MUDD COL. CE

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PLATE 2

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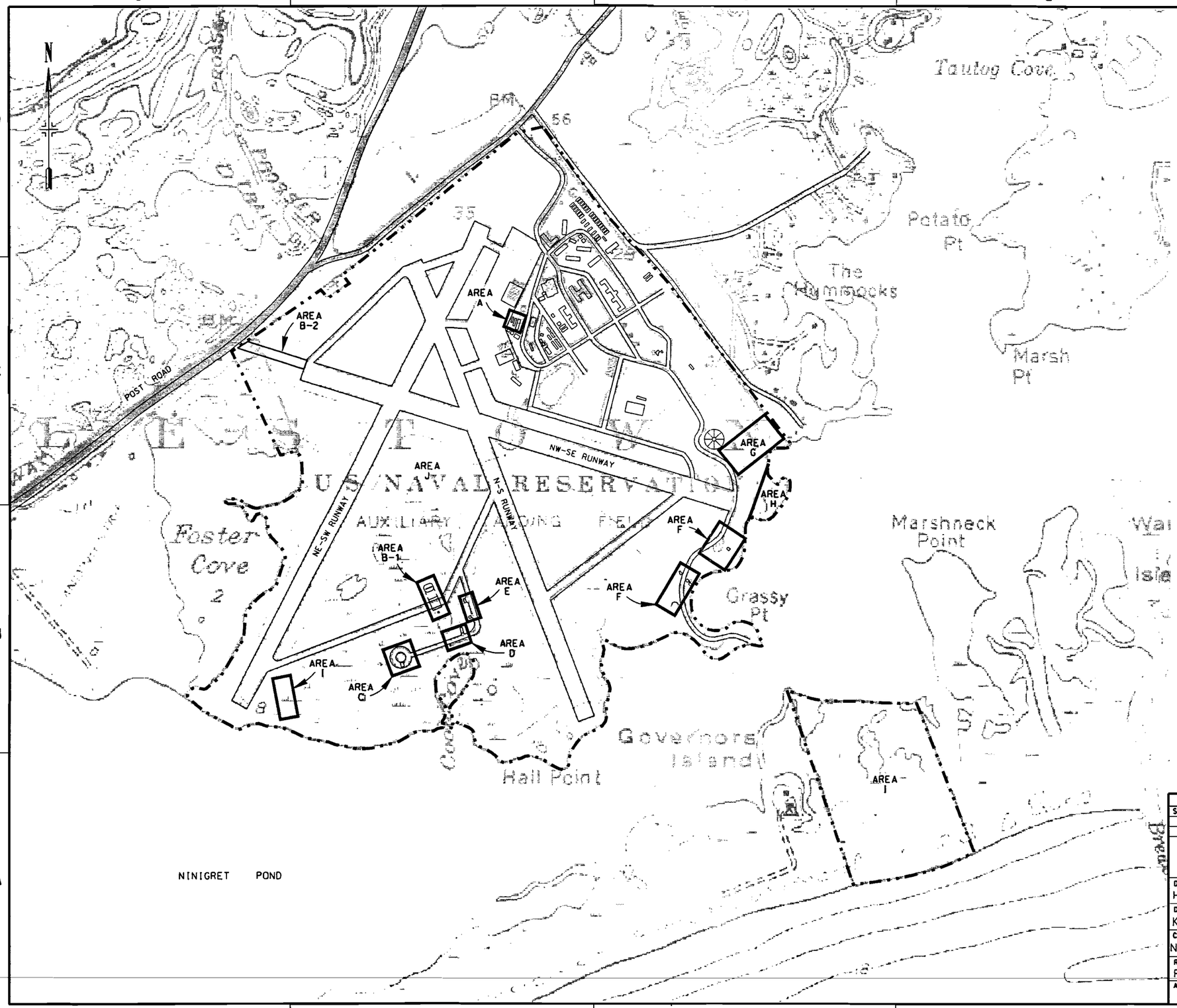

SUMMARY OF AREAS			
AREA	FORMER USAGE	OE PRESENCE	ACREAGE
A	AMMUNITION ADMINISTRATION OFFICES	UNCONTAMINATED	1.0
B-1	MACHINE GUN RANGE (SHOOT IN BUTT)	UNCONTAMINATED	2.0
B-2	FILL AREA	UNCONTAMINATED	2.0
C	HIGH EXPLOSIVE STORAGE	POTENTIAL	2.1
D	SMALL ARMS, DETONATOR AND FUSE MAGAZINES	UNCONTAMINATED	1.3
E	PYROTECHNIC AND INERT MAGAZINES	UNCONTAMINATED	1.0
F	SKEET AND TRAP RANGES	UNCONTAMINATED	6.0
G	DUMP SITE	POTENTIAL	6.0
H	HUNTER ISLAND DUMP SITE	POTENTIAL	3.0
I	PISTOL RANGE	UNCONTAMINATED	2.0
J	REMAINING LAND	UNCONTAMINATED	604.9
	TOTAL ACRES		631.3

LEGEND:

- FORMER NAVAL AUXILIARY LANDING FIELD SITE BOUNDARY
- MAJOR ROAD

500 0 500 1000 FEET

Revisions			
Symbol	Description	Date	Approved

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

US Army Corps of Engineers Rock Island District

NAVAL AUX LANDING FIELD
CHARLESTOWN, RI

PROJECT AREAS

Designed by: H.E.CARLSON
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Project Number: D01RI000804

PLATE 3

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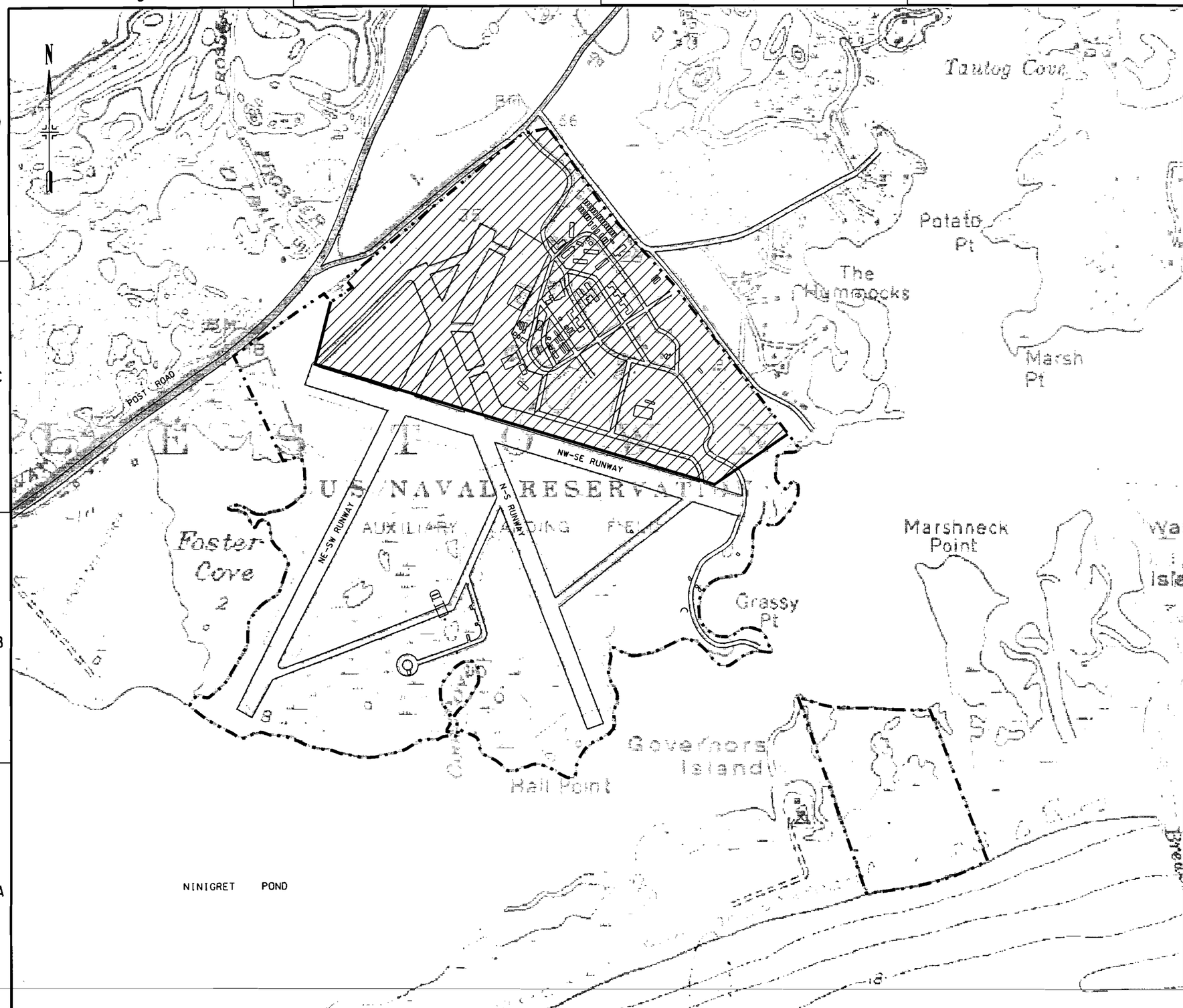

OWNERSHIP SUMMARY			
TRACT	OWNER	PRESENT USAGE	ACREAGE
	TOWN OF CHARLESTOWN	RECREATIONAL	222.8
	U.S. FISH & WILDLIFE SERVICE	NATIONAL WILDLIFE REFUGE	413.5
	TOTAL ACRES		631.3

LEGEND:

- FORMER NAVAL AUXILIARY LANDING FIELD SITE BOUNDARY
- MAJOR ROAD

500 0 500 1000 FEET

Revisions			
Symbol	Description	Date	Approved

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

US Army Corps of Engineers Rock Island District

NAVAL AUX LANDING FIELD
CHARLESTOWN, RI

OWNERSHIP
1997

Designed by: H.E.CARLSON
Drawn by: K.D.MARKER
Checked by: N.IAIENNARO
Reviewed by: R.E.HOFFMAN
Approved by: JAMES V. MUDD COL. CE

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Dates:
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Project Number: D01RI000804

PLATE 4

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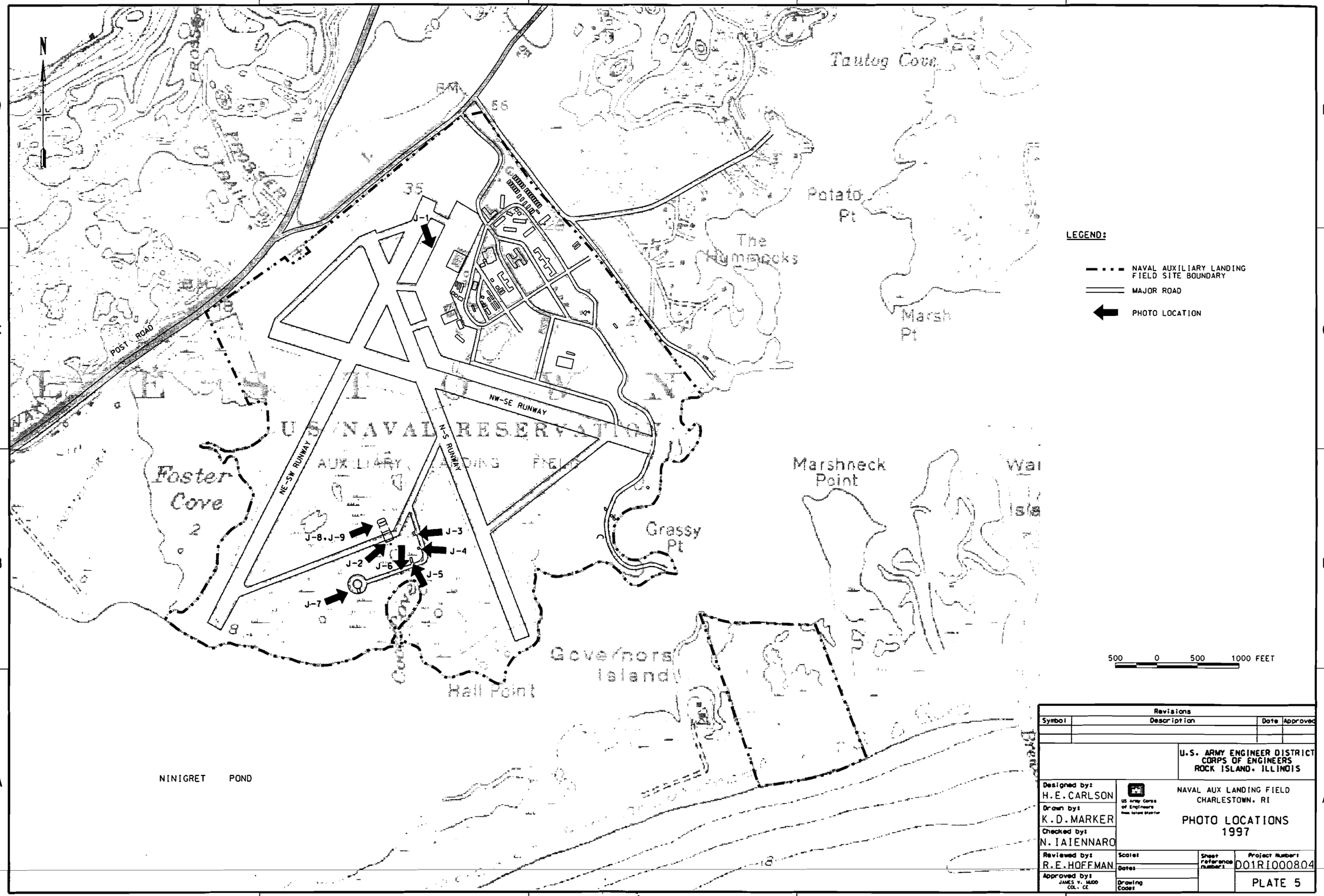

Revisions			
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U.S. ARMY ENGINEER DISTRICT
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ROCK ISLAND, ILLINOIS

US Army Corps of Engineers

NAVAL AUX LANDING FIELD
CHARLESTOWN, RI

PHOTO LOCATIONS
1997

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Approved by: JAMES V. MADD COL. CE

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Sheet reference number:
Project Number: D01RI000804

PLATE 5

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