

# FEDERAL REGION III REGIONAL RESPONSE TEAM CONFERENCE

## HISTORY of MUNITIONS DUMPING



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(301) 653-0996 (H)  
23 May 2018



# TERMINOLOGY





# **MUNITIONS and EXPLOSIVES of CONCERN** **(MEC)**

**Distinguishes specific categories of military munitions that may pose unique explosives safety risks as defined by 10 U.S.C. 2710**

- **Unexploded ordnance (UXO)**
- **Discarded military munitions (DMM)**
- **Munitions Constituents (MC)**



# **UNEXPLODED ORDNANCE (UXO)**

**As defined by 10 U.S.C. 2710**

**Primed, fuzed, armed, or otherwise prepared for action**

**Fired, dropped, launched, projected, or placed in such a manner as to constitute a hazard to operations, installations, personnel, or material**



# **DISCARDED MILITARY MUNITIONS (DMM)**

**As defined by 10 U.S.C. 2710**

**Abandoned without proper disposal**

**Removed from storage area for the purpose of disposal**

**NOT UXO**

# **MUNITIONS CONSTITUENTS (MC)**

**As defined by 10 U.S.C. 2710**

**Any materials originating from UXO, DMM, or other military munitions**

**Includes explosive and non-explosive materials, and emission, degradation, or breakdown elements of such ordnance or munitions**



# Munitions Debris (MD)

**Remnants of munitions (e.g., fragments, penetrators, projectiles, shell casings, links, fins) remaining after munitions use, demilitarization, or disposal. (Note: Munitions debris was formerly referred to as OE scrap.)**





115 Navy Circular Letters  
63 Navy - Gen  
4523 Gen  
OP-30-5M3-SF  
466 Gen  
Ser. 1023830  
6613 Gen

*General*

From: CNO  
To: All Naval Districts less Nine  
Subj: Containers Recovered at Sea by Commercial Fishermen - Procedure for  
Ref: (a) Hydrographic Bulletin No. 2805 of 9 June 1943.

1. Ref. (a) warns commercial fishermen that any unrecognized container recovered from the sea bottom may contain explosives and instructs the fishermen to bring such containers to the nearest Coast Guard or Naval Station for disposition. It is believed that this instruction may result in the deposit of these objects at points contiguous to heavily populated areas or at points adjacent to vital material or installations. Since this would create an unacceptable hazard the instruction given in ref. (a) will be cancelled.

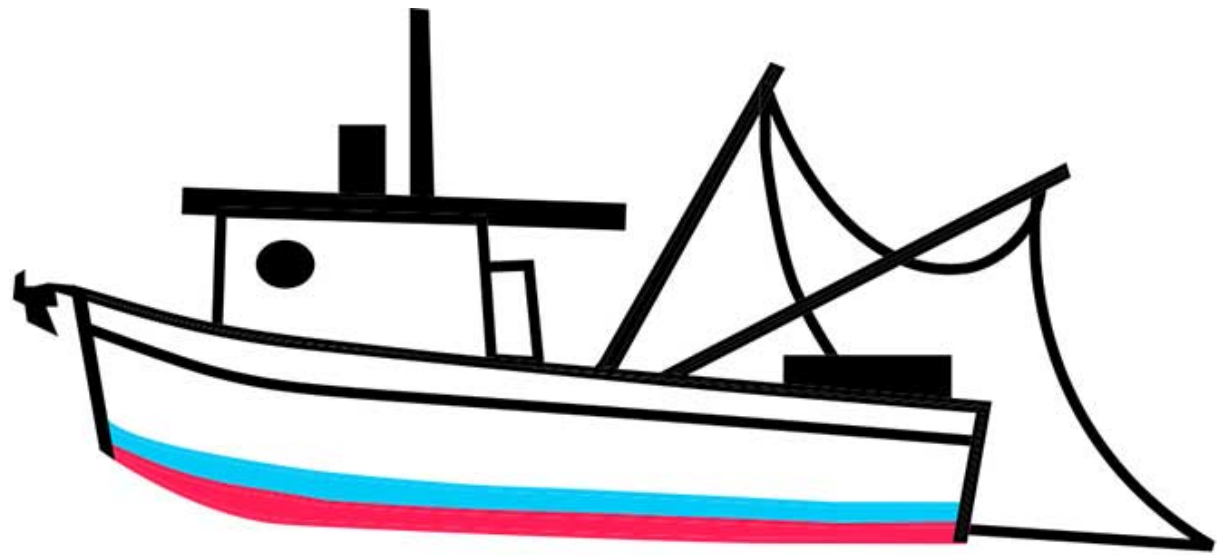
2. The most desirable method for handling objects which might contain explosives is to dump them back into the sea as soon after their recovery as possible. At the time of the dumping the vessel should be underway at maximum speed and the personnel aboard, in so far as practicable, should be under cover since the explosive may be set off as a result of the dumping. The dumping, if practicable, should be done in water shallower than at the place of recovery. This is advisable since some hydrostatically operated underwater weapons may detonate if dropped into water deeper than at the spot where recovered.

3. Whenever there is reason to believe that a new underwater weapon is involved, it will be desirable to have unrecognized containers buoyed at the point where they are dumped so that they may later be recovered by personnel qualified to handle underwater explosives.

CC: Comdt., Coast Guard  
Op-28

C  
O  
P  
Y  
Original in 115 Navy Circular Letters

# 1943



# Commercial Fishing Vessel Safety

NAVY DEPARTMENT  
Office of the Chief of Naval Operations  
Washington  
24 April 1945

COPY

APRIL 24 1945

Op-05-G11B/ztl  
(SC)S78-1  
Ser. 068705-G

051445 1495

CONFIDENTIAL

From: Chief of Naval Operations.  
To: Commandants, Naval Districts.  
Commandant, U. S. Coast Guard.  
Subj: Dumping Grounds for Explosives, Ammunition, and Chemicals.  
Encl: (A) List of Area Coordinators of Fisheries.

1. In order to insure the safety of trawlers, submarines, and other ocean going vessels against the hazards caused by the dumping of explosives, ammunition, and chemicals at sea, the commandants of naval districts are directed to establish suitable areas, which will be acceptable to the appropriate Coast Guard, Army, and fishery activities for the dumping of explosives at sea.

2. The area selected should be about 10 miles square and located outside regular steamer lanes, fishing grounds, submarine operating areas, and well away from ocean cables. The dumping area must be in water over 150 fathoms deep and at least 10 miles off shore.

3. The Chief of Naval Operations shall be informed of the areas selected, and appropriate action will be taken to have this information promulgated to mariners by the hydrographic office.

4. The Coast Guard shall provide escort vessels to ships and barges en route to the dumping areas. The Coast Guard shall maintain records of the types, amounts, and owning agencies of the explosives involved.

5. The commandants, after consultation with the Army and Coast Guard, shall establish appropriate procedures for the disposal of explosives by dumping at sea in those areas which come under their cognizance.

F. J. HORNE  
Vice Chief of Naval Operations

CC:  
CominCh BuOrd  
CinCPac BuSanda  
CinCLant Coordinator of Fisheries  
ComWesSeaFron ComMarCorps  
ComEasSeaFron JANASB  
ComGulfSeaFron JANBPF  
ComNavEu Hydrographic Office  
ASF (Ordnance)(25 copies)  
Op-30, Op-39, Op-05-G1

Authenticated by  
/s/ T. C. PARKER  
Capt. T. C. PARKER

RECOMMENDED 10 MILE SQUARE AREA

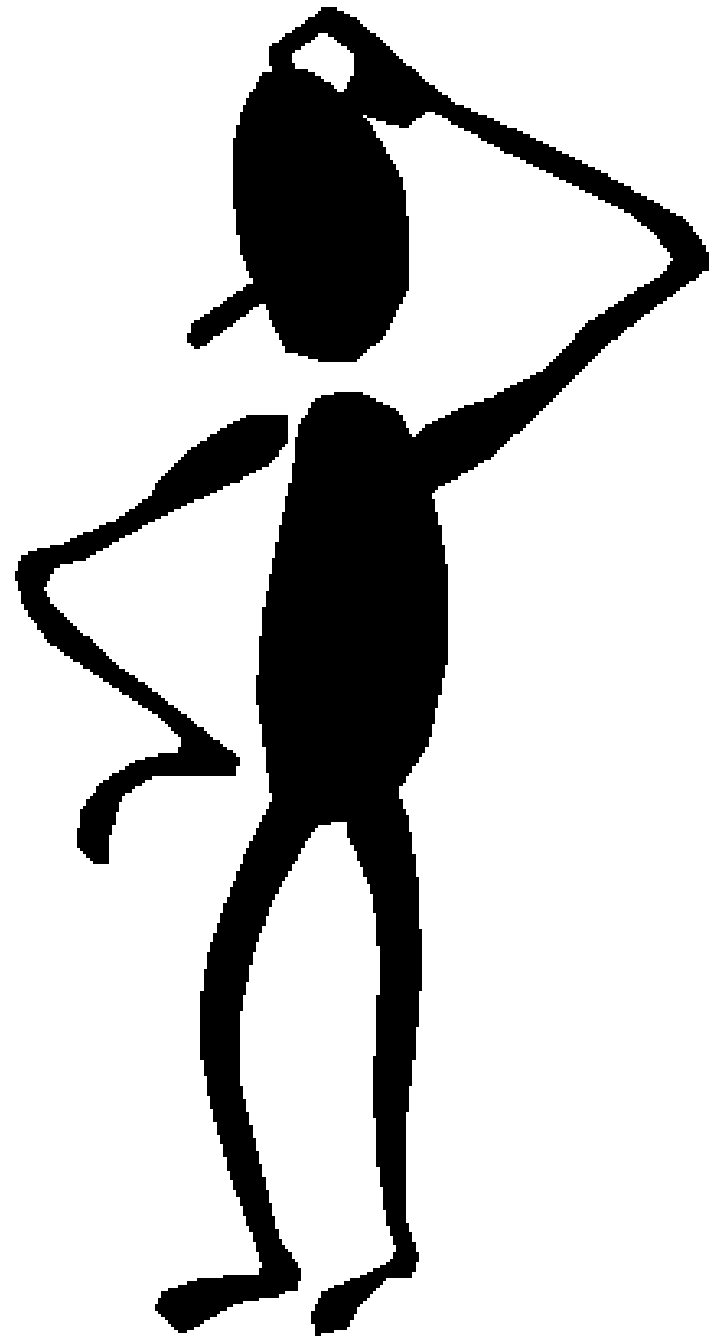
← LOCATED OUTSIDE OF FISHING GROUNDS  
and OTHER COMMERCIAL OPERATING  
AREAS

← DUMPING DEPTHS MUST BE OVER 150  
FATHOMS

← AT LEAST 10 MILES OFF SHORES

**QUESTION?**

**WHAT ABOUT DISPOSALS  
THAT OCCURRED  
BEFORE APRIL 1945?**

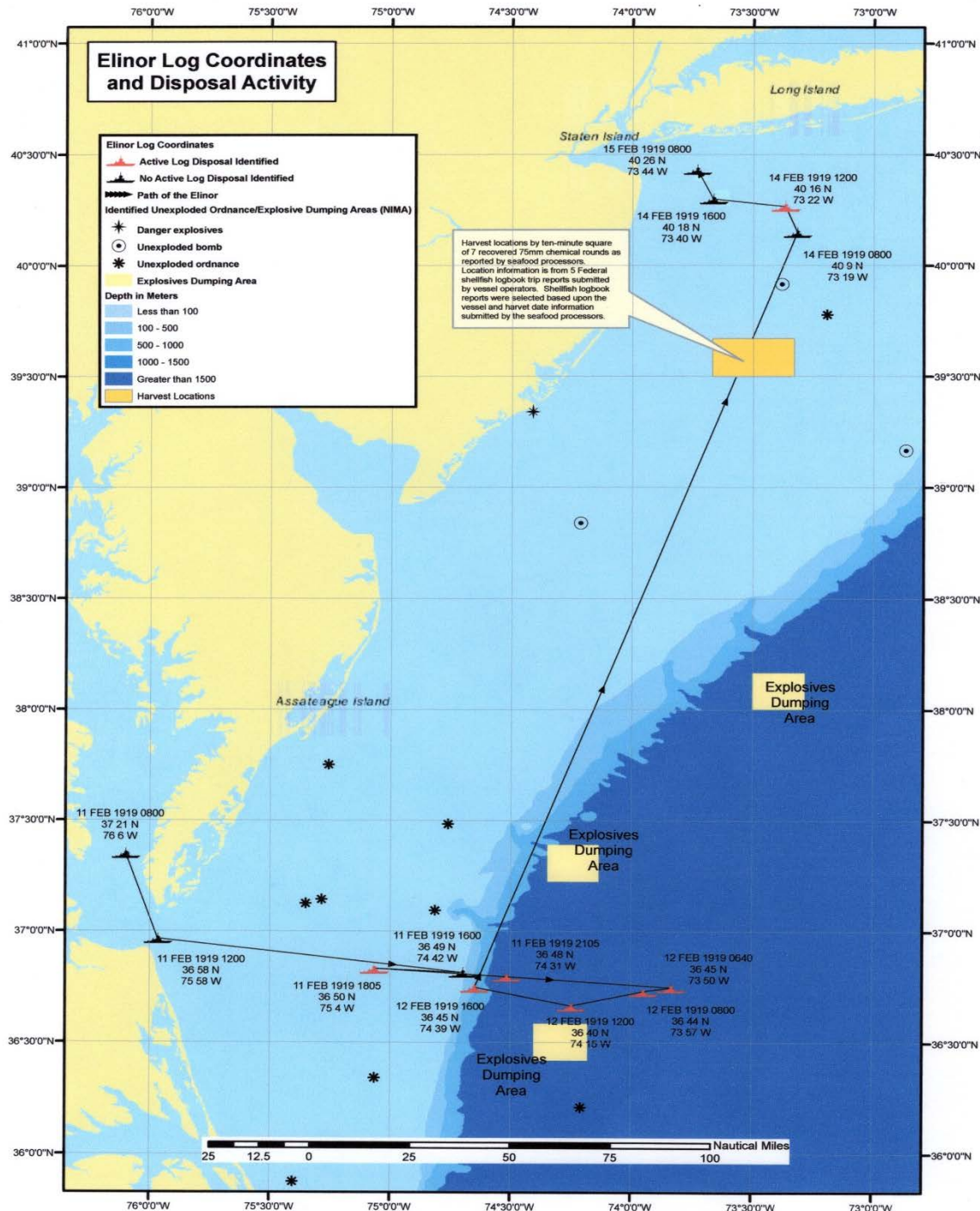


**PRIOR TO APRIL 1945 INDIVIDUAL  
NAVAL DISTRICT COMMANDERS  
ESTABLISHED THEIR OWN DISPOSAL  
SITES**

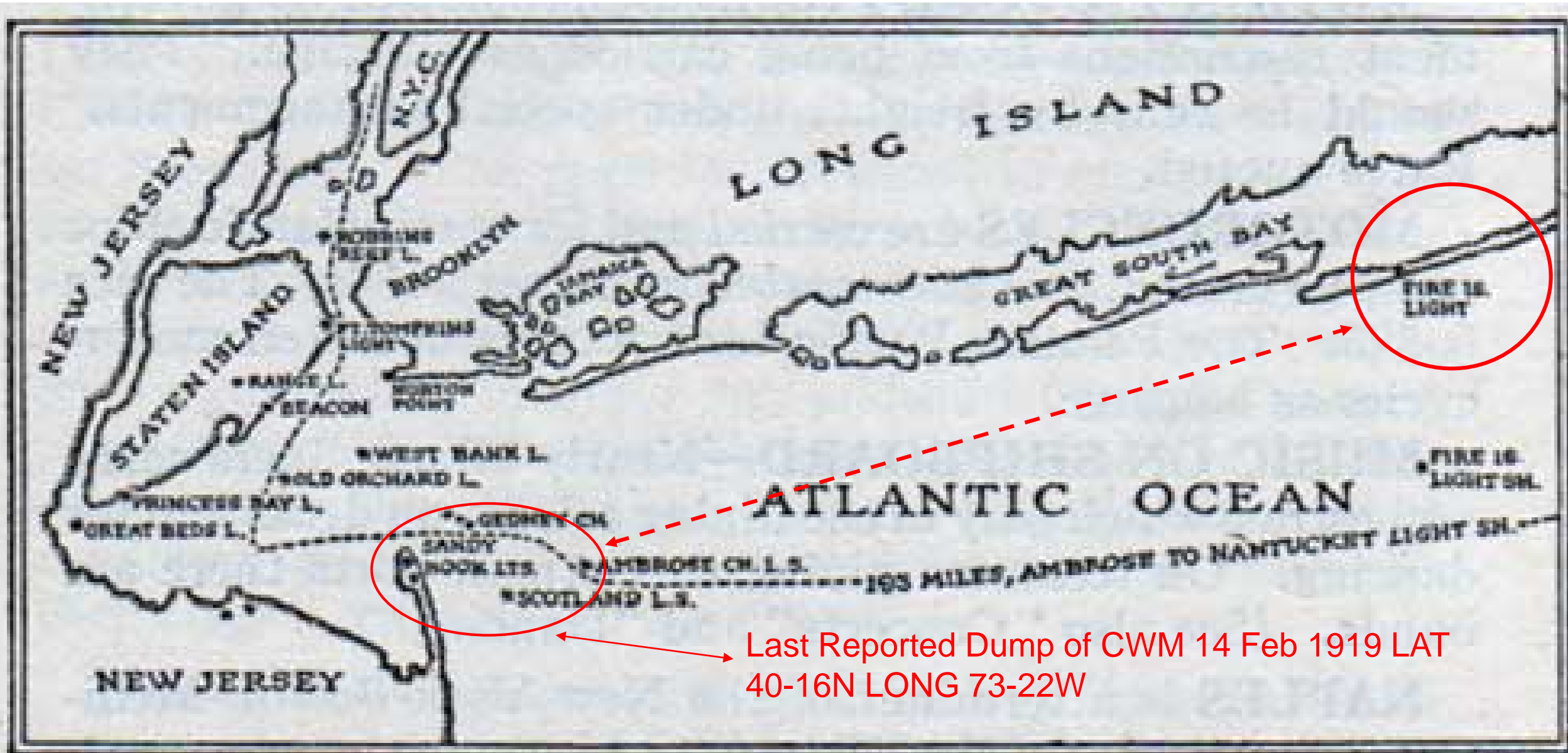
**PRIOR TO APRIL 1945 US ARMY  
CONDUCTED THEIR OWN SEA  
DISPOSAL OPERATIONS WITHOUT  
COORDINATING WITH THE LOCAL  
NAVAL COMMAND**

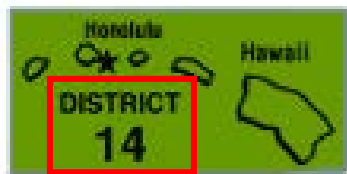
# EARLY HISTORY

- 10 February 1919 USS Elinor Departed Baltimore Harbor
- 11 February 1919 at 5:40pm Commenced Dumping Operations of Toxic Chemical Munitions in 17 Fathoms of Water
- 14 February 1919 at 1200pm Completed Dumping Operations Prior to Entering New York Harbor



# 2010, New York ESS Pursuit South of Fire Island





PACIFIC AREA

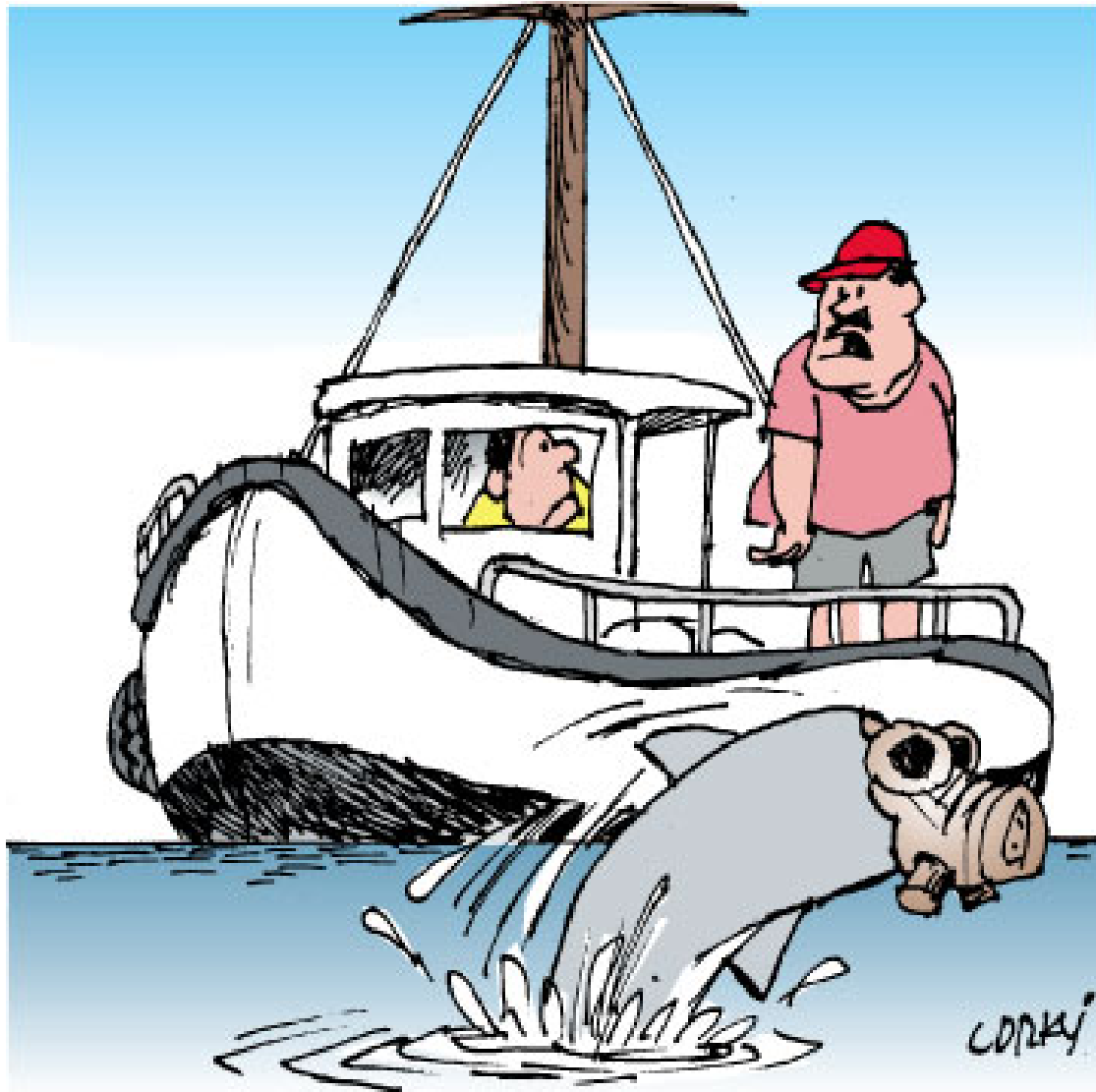
ATLANTIC AREA



**ALL COAST GUARD DISTRICTS EXCEPT DISTRICT 9 HAS POTENTIAL SHALLOW WATER DUMP SITES IN THEIR OPERATIONAL AREAS!**



- Legend
- Washington D.C. Headquarters
  - District Offices
  - Area and District Offices



"CALL THE ARMY—I THINK WE'VE LOCATED THE SITE OF THE CHEMICAL ARMS DUMPING."

- 1945 Cape Henry, Virginia Fishing Schooner Emily Brown – 4 Fishermen Injured
- 2009 Dover Air Force Base, Delaware – 3 Air Force EOD Technicians Injured
- 2010 Fire Island, New York ESS Pursuit – 2 Fishermen Injured
- 2016 Barnegat Inlet, New Jersey Willian Lee – 1 Fisherman Injured





**20 July 2004**  
**DOVER AFB DELAWARE**  
**3 AIR FORCE EOD INJURED**



# RESULTS OF SHALLOW WATER DUMPING



**ESS Pursuit  
2010**



**William Lee  
2016**

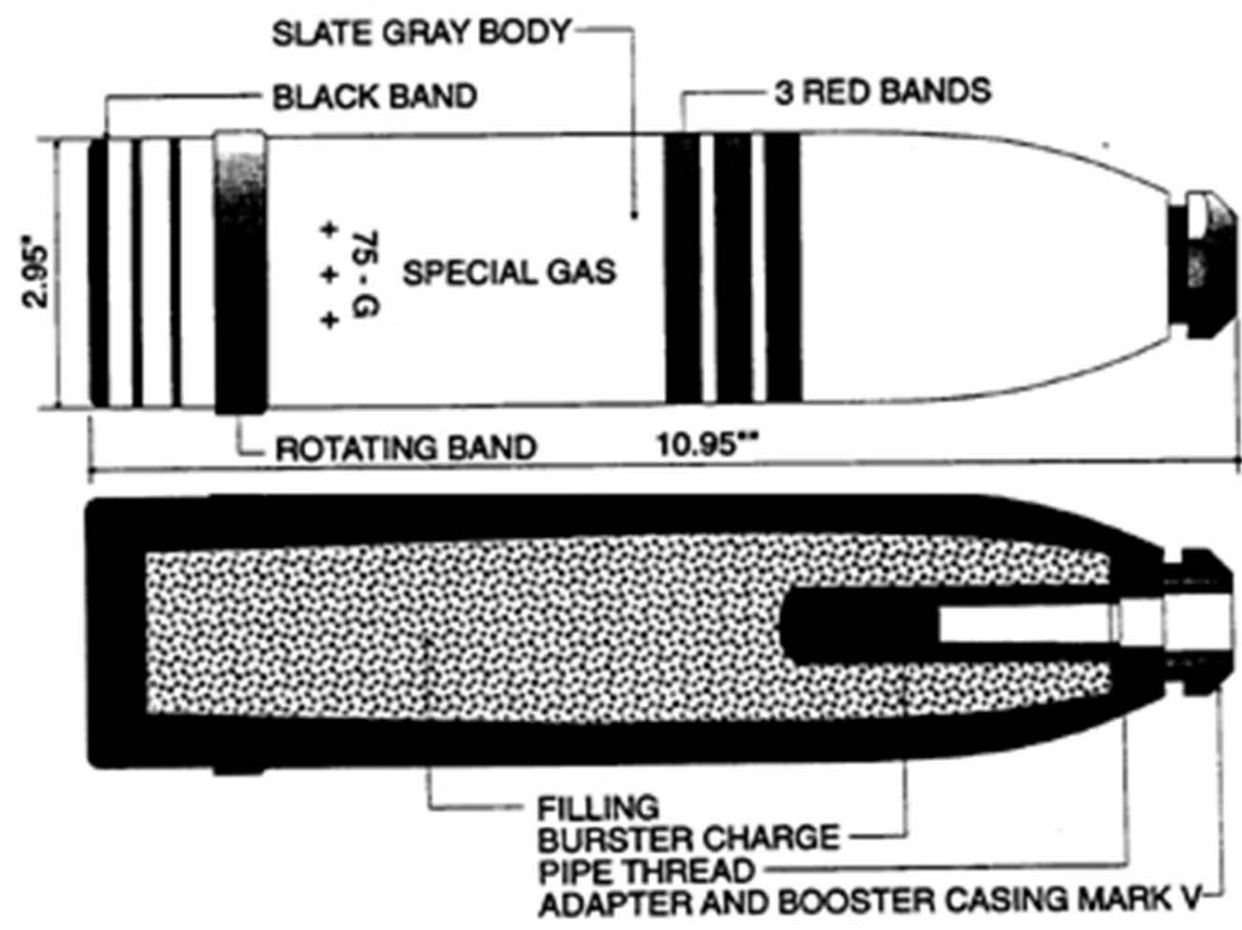
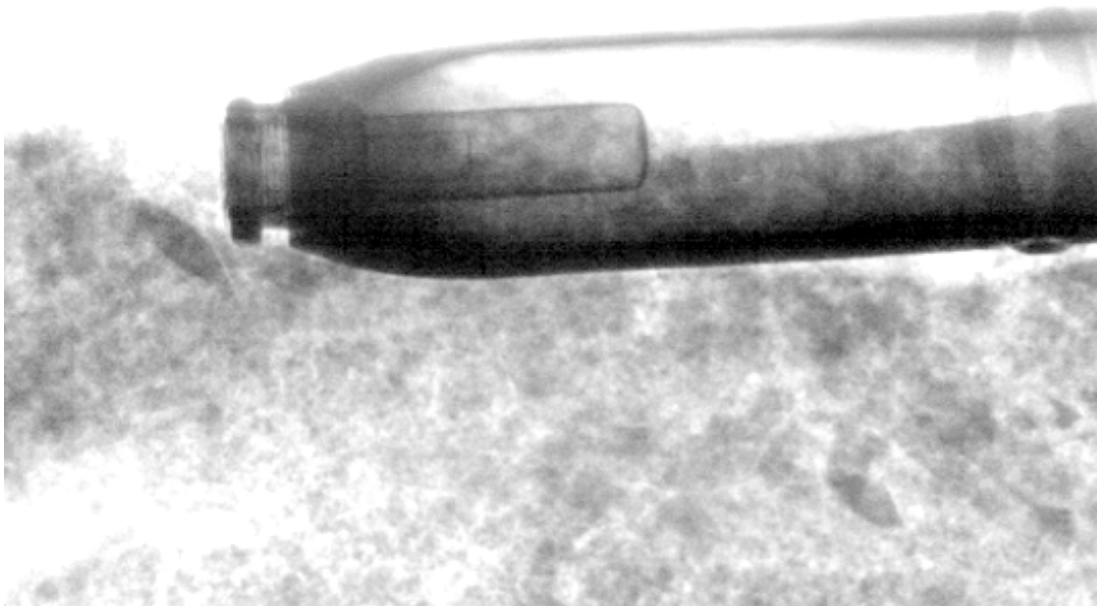


## **75mm Mk-II (HS) PROJECTILE**

**LENGTH W/O FUZE: 10.95 INCHES**

**DIAMETER: 2.95 INCHES**

**WEIGHT (AVERAGE): 11.27 to 12.24 POUNDS**





# MUSTARD GAS



*Smells like*  
**GARLIC...**

HORSERADISH · MUSTARD  
STRONG VESICANT

MRTC ART. DEPT.  
CAMP BARKELEY,  
TEXAS

**Mustard gas (sulphur mustard)**



**CHEMICAL FILLER CODE (HS)**  
**CHEMICAL AGENT IS A LIQUID**

**FREEZING POINT: +58° F**



# CHEMICAL INJURIES BLISTER AGENT

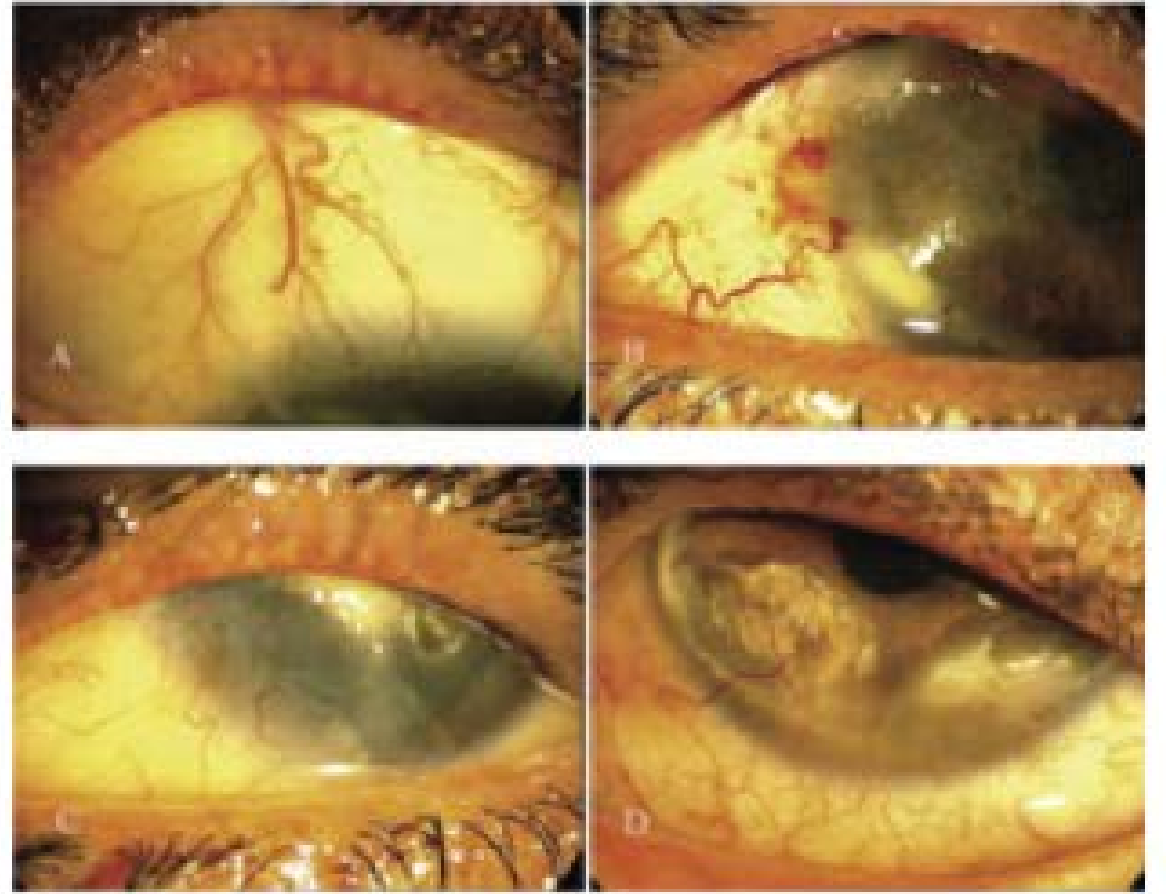






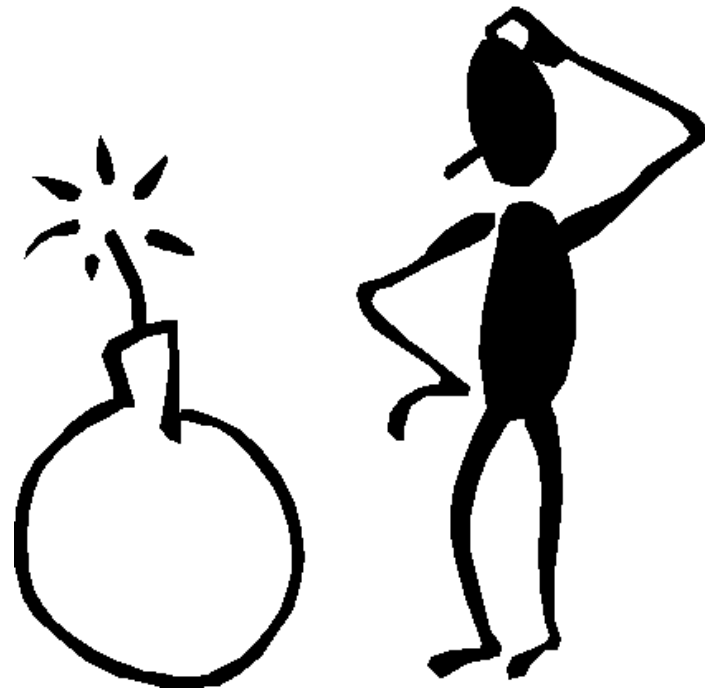


*Blisters caused by mustard gas*



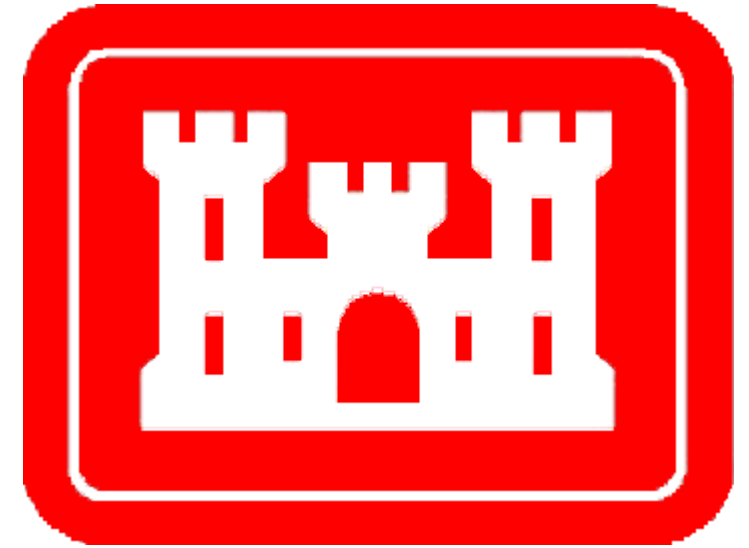
*Eye irritation caused by mustard gas*

# QUESTIONS



# BEACH REPLENISHMENT





U.S. Army Corps of Engineers



# SURF CITY, NEW JERSEY

- 2007 to 2009
- 1,079 items of MEC recovered

Cost estimates approximately  
\$43 million dollars

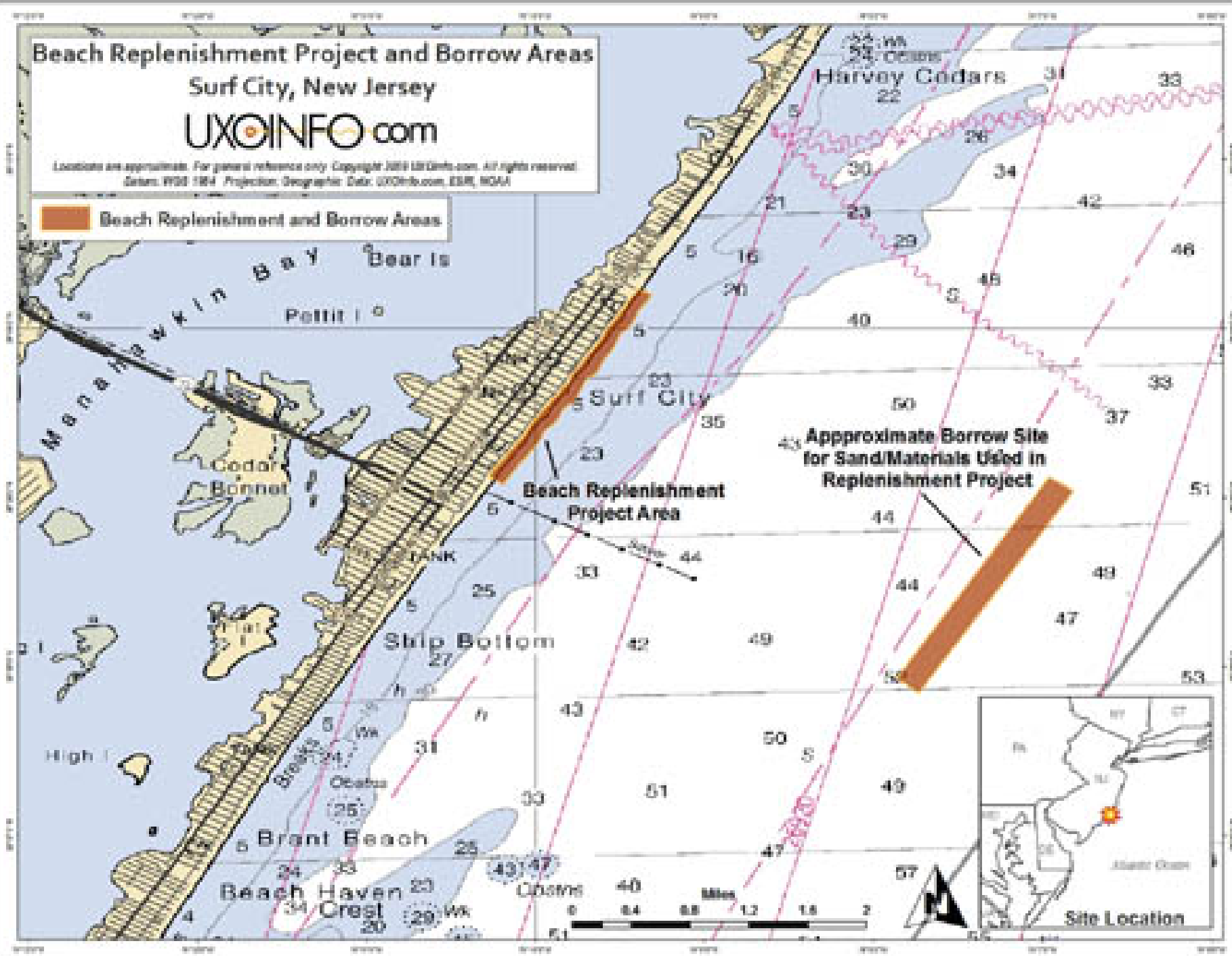
# Beach Replenishment Project and Borrow Areas

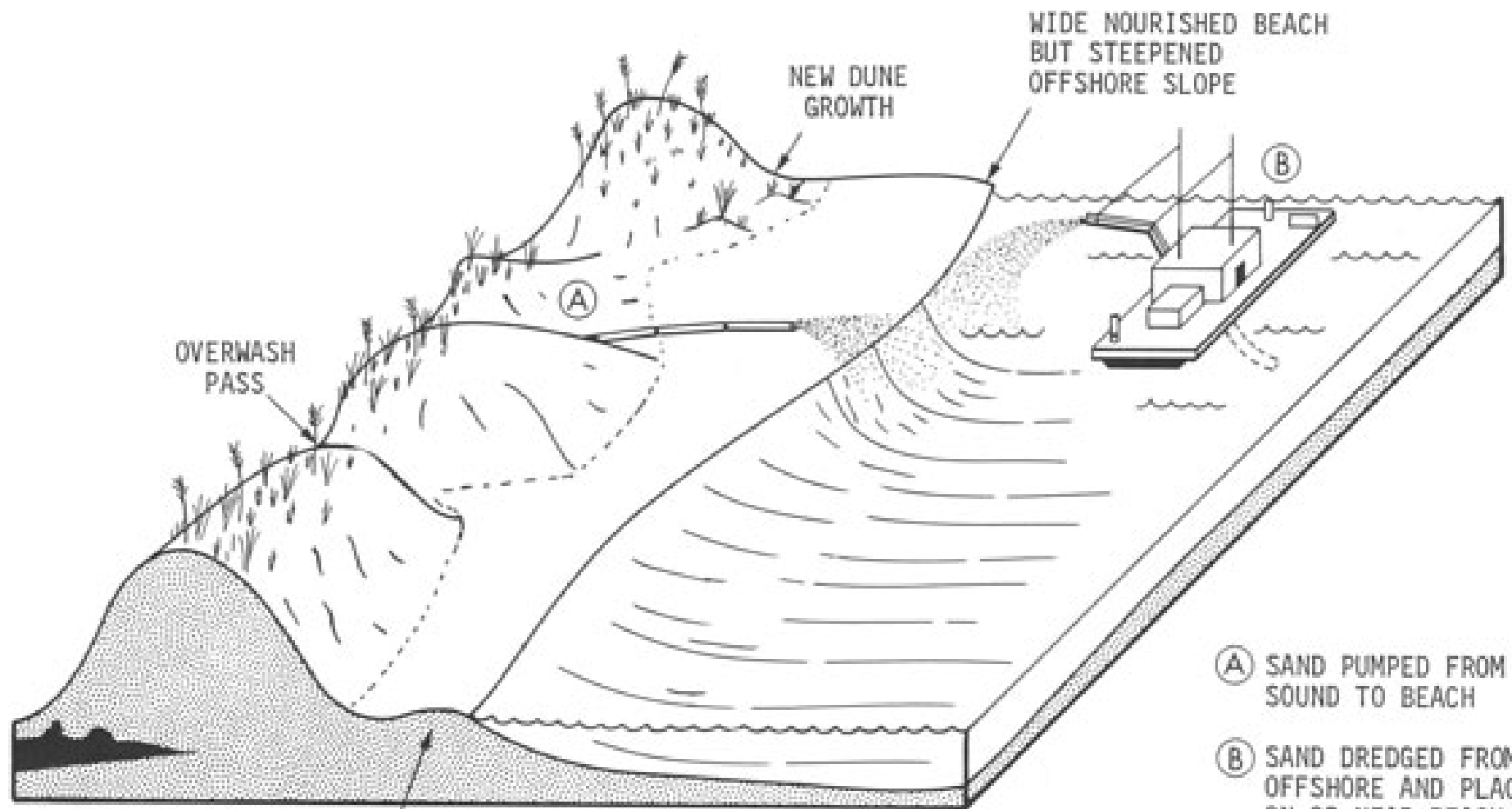
## Surf City, New Jersey

UXOINFO.com

Locations are approximate. For general reference only. Copyright 2019 UXOInfo.com. All rights reserved.  
Datum: WGS 1984 Projection: Geographic Data: UXOInfo.com, ESRI, NOAA

 Beach Replenishment and Borrow Areas





OVERWASH PASS

NEW DUNE GROWTH

WIDE NOURISHED BEACH BUT STEEPENED OFFSHORE SLOPE

(A)

(B)

(A) SAND PUMPED FROM SOUND TO BEACH

(B) SAND DREDGED FROM OFFSHORE AND PLACED ON OR NEAR BEACH

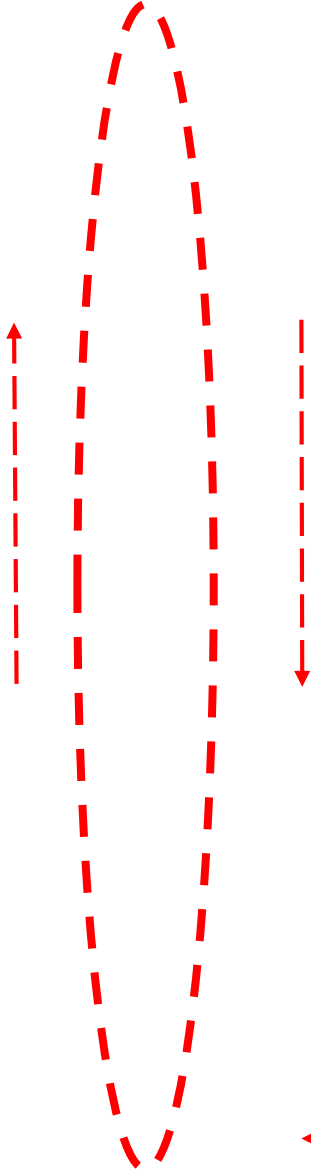
NARROW ERODING BEACH WITH GENTLE OFFSHORE SLOPE





RARITAN ARSENAL, NJ

1919 - 1925



RETROGRADE of ORDNANCE



CURTIS BAY ORDNANCE DEPOT,  
MD

EUROPEAN THEATER of OPERATIONS

RARITAN ARSENAL

METUCHEN, N. J.

JFG:jfg

July 3, 1923

FROM:

TO:

SUBJECT: Surveillance Report.

To: Ordnance Office, War Department, Washington, D.C. (Thru: Commanding Officer, Raritan Arsenal, Metuchen, N.J.)

1. In compliance with paragraph seven of Field Service letter dated April 3, 1920 (file O.O. 231.22/111 Raritan Arsenal), the following report is made of the activities of the Surveillance Inspector and his Assistant at this depot during the month of June, 1923:

a) All incoming explosive and ammunition was inspected as to serviceability and general condition, identification by manufacturer, lots, etc., and to the proper storage for future inspection.

b) All outgoing material was inspected as to serviceability and general condition.

c) Inspections were made of a big percentage of the explosives and ammunition in storage.

d) Inspections were made of the reconditioning of T.N.T. and Explosive "D" (Repacking into new boxes, proper stenciling of boxes, etc.)

e) Inspections were made of the dock activities, which were that of the proper handling and loading of explosives and ammunition shipped by lighters from this depot or the unloading of H.E. shell shipped to this depot from Curtis Bay by the Columbia Salvage Corporation for salvage.

f) Inspections were made of all activities throughout the Magazine Area, shipping and receiving material, repiling and segregation, etc.

g) Inspections were made of most magazines throughout the Magazine Area. Irregularities as found were reported to the Officer in Charge of Magazine Area for correction. The area in general is in a very good condition.

There is still some policing to be done in the Lower Area. With the heavy layoff at the end of the month this work must be done as labor and time permits.

h) He made daily inspections of all salvage operations, which were that of salvaging 75m/m shrapnel and H.E. shell, 155m/m H.E. shell, 8" H.E. shell (American and British), 0.2" H.E. shell, Adapters and Boosters American and British, fuses, propelling charges, and 37m/m cased shell.

Over 100 tons of 37m/m shell were loaded on a lighter and dumped at sea. This is the material that was buried on Arsenal ground a few years ago on an old contract.

i) He made inspection of all material salvaged by the Columbia Salvage Corporation.

j) He checked up on metal components and weights of material salvaged.

k) The 135° C. German Test was run on 59 lots of bulk smokeless powder for cannon. All lots of powder passed satisfactory tests.

l) He made special investigations and inspections of explosives and ammunition when required to answer special correspondence from the Ordnance Office or elsewhere.

m) Due to shortage of labor the past two or three months and the making of heavy shipments which had to be given first choice, there is still some repiling to be done in the Upper Area to conform to storage regulations, a special report of which was made to the Ordnance Office.

J. F. Green,  
Surveillance Inspector.

CLASSIFIED BY  
BRIEFED BY  
319.1  
JUN 5 1923  
Raritan Arsenal  
32



**IDENTIFICATION OF  
MUNITIONS  
CAN BE A PROBLEM!**



# 37mm Model 1916 HE Projectile

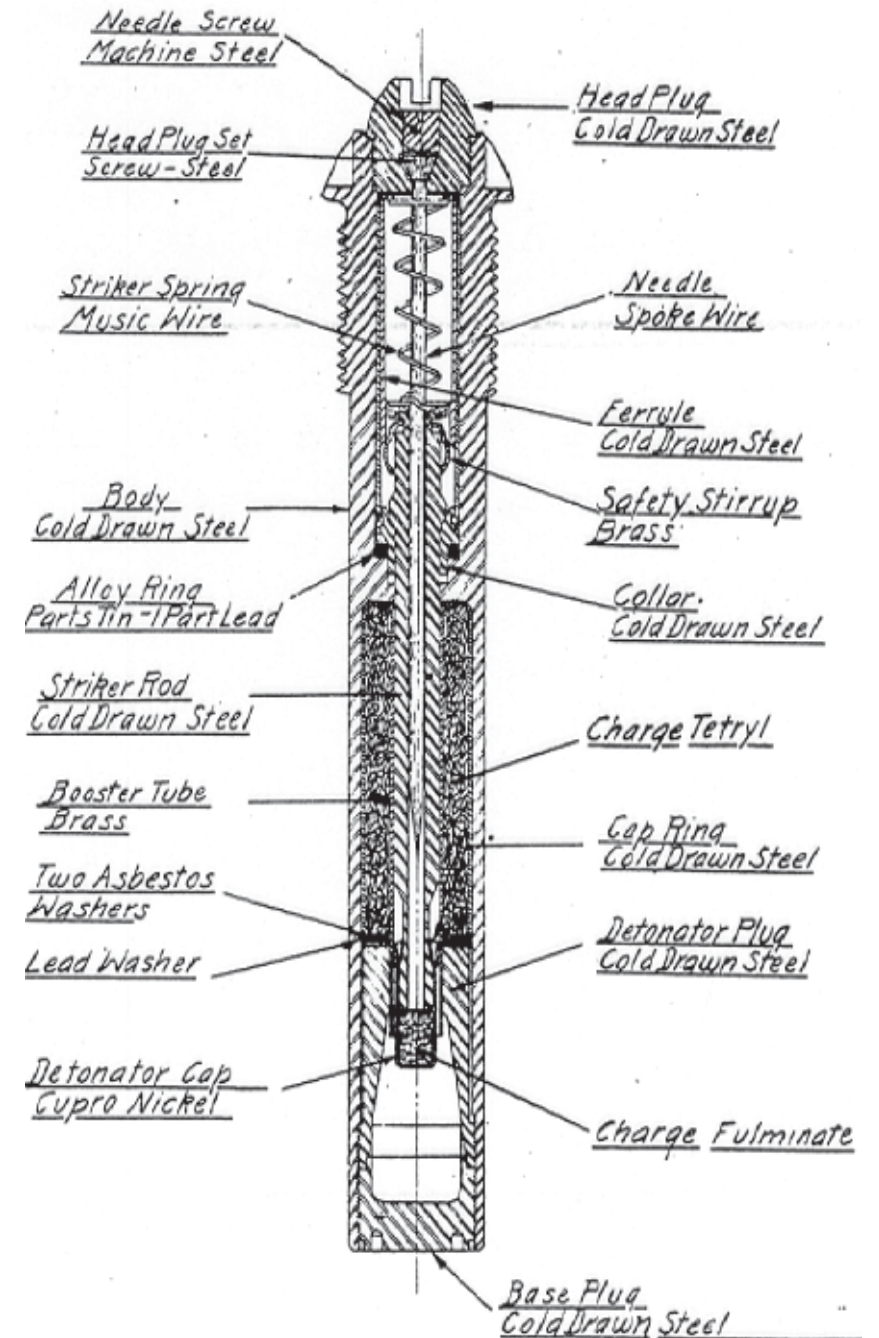




# Mk-I PD Fuze with Booster

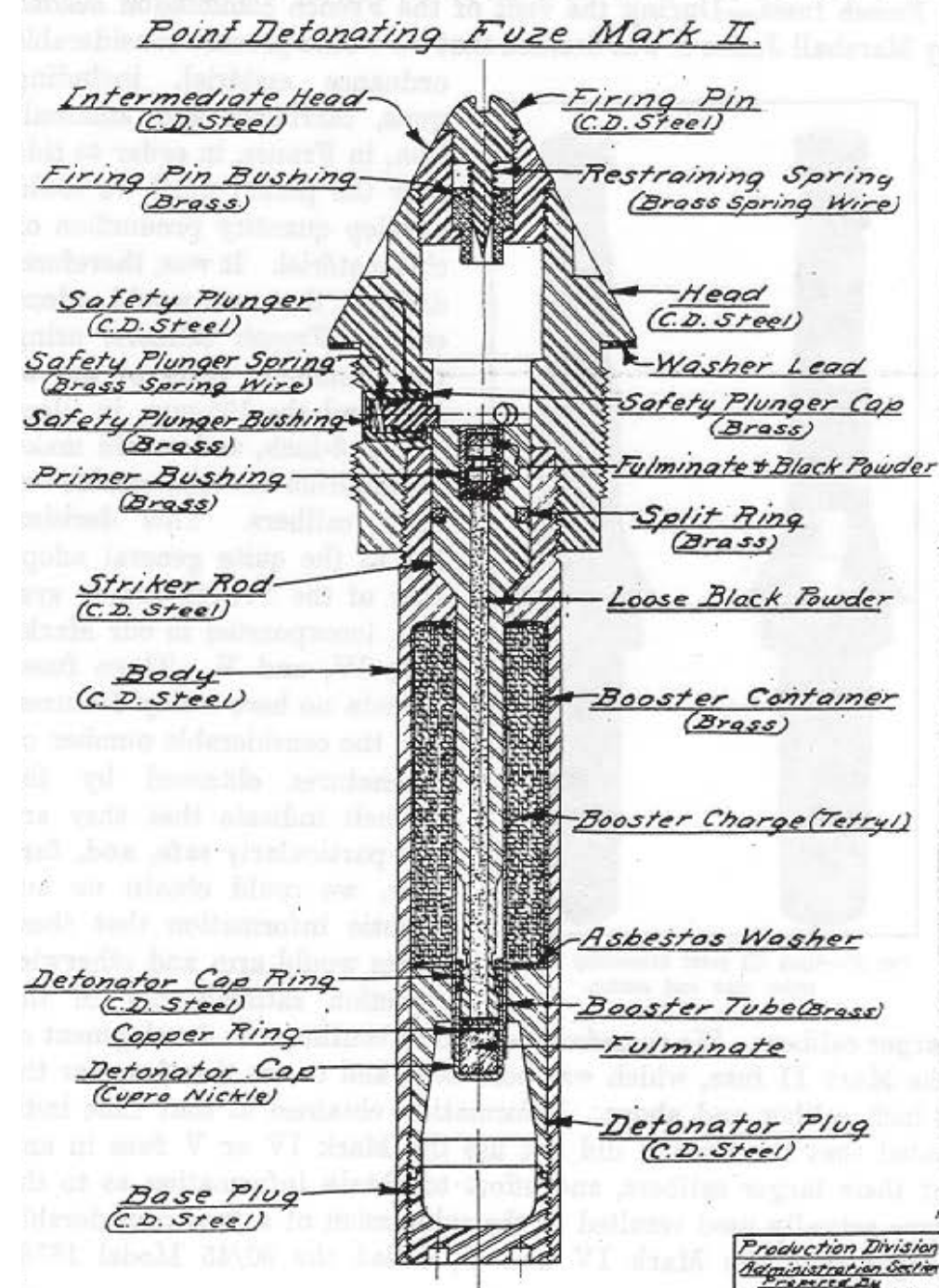


## POINT DETONATING FUZE. MARK I





# Mk-II PD FUZE with BOOSTER



Production Division  
Administration Section  
Prepared By  
James F. Lyon  
Lieut. and R.C.  
Drawn by Carlson, Dec 21, 13



FOURTH NAVAL DISTRICT  
DISTRICT STAFF HEADQUARTERS  
BUILDING NO. 1  
NAVY YARD, PHILADELPHIA, PA.  
22 November 1933.

Mr. Evert A. Axelson,  
Secretary, O K Fishermen's Association,  
Wildwood, N. J.

Dear Sir:

Your letter of October 17, 1933, addressed to the War Department, Washington, D.C., in regard to the locality where ammunition was dumped on September 7, 1933, has been referred to this office by the U. S. Engineer's Office of Philadelphia.

On 28 September, 1933, this office informed the District Engineer of Philadelphia that this ammunition was dumped in approximately Lat 74°10'N - Long 38°30'W and about 45 miles, 112° true from Overfalls Lightship, this information being furnished the District Engineer in reply to his letter of 23 September, 1933, enclosing your letter of 11 September, 1933, wherein it was stated that munition supplies had been dumped "near Overfalls Lightship, to the detriment of fishing conditions in that area."

A further investigation of this matter has been made and the log books of the U.S.S. KALMIA, which towed the barge containing the ammunition and dumped the latter into the ocean, establishes the fact that that vessel left Brown Shoals at about 5:00 a.m., on 7 September, 1933, and proceeded to a locality about 40 miles from Overfalls Lightship where, between 9:30 a.m. and 10:30 a.m., the ammunition was dumped in about 23 fathoms of water. Apparently due to errors in navigation, this ammunition was dumped in less than 30 fathoms of water - the depth ordered to be used. This locality is further verified by the fact that it required two and one-half hours for the U.S.S. KALMIA to steam from the point where the dumping was completed to the Overfalls Lightship at a speed of about eleven to twelve knots per hour - a distance of about thirty miles.

IN REPLY ADDRESS  
COMMANDANT  
FOURTH NAVAL DISTRICT  
AND REFER TO NO.

378-1  
11-22

FOURTH NAVAL DISTRICT BY DAUPLE  
DISTRICT STAFF HEADQUARTERS  
BUILDING NO. 1  
NAVY YARD, PHILADELPHIA, PA.

22 November 1933.

Your suggestion for using what is known locally as the "Old Ground" located about 12 or 13 miles southeast by south from Overfalls Lightship, where is found about 14 or 15 fathoms of water, is noted. This would not be a satisfactory locality as existing regulations of the Navy Department require that ammunition shall not be dumped in less than 30 fathoms of water.

I would be glad to have your further suggestion for a dumping ground for ammunition but which must be in not less than 30 fathoms of water, as above-mentioned. Your letter of October 17, 1933, addressed to the War Department, Washington, D.C., in regard to the locality where ammunition was dumped on September 7, 1933, has been referred to this office by the U. S. Engineer's Office of Philadelphia.

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NAVY DEPARTMENT  
RECEIVED  
NOV 24 1933

378-1 (33122)

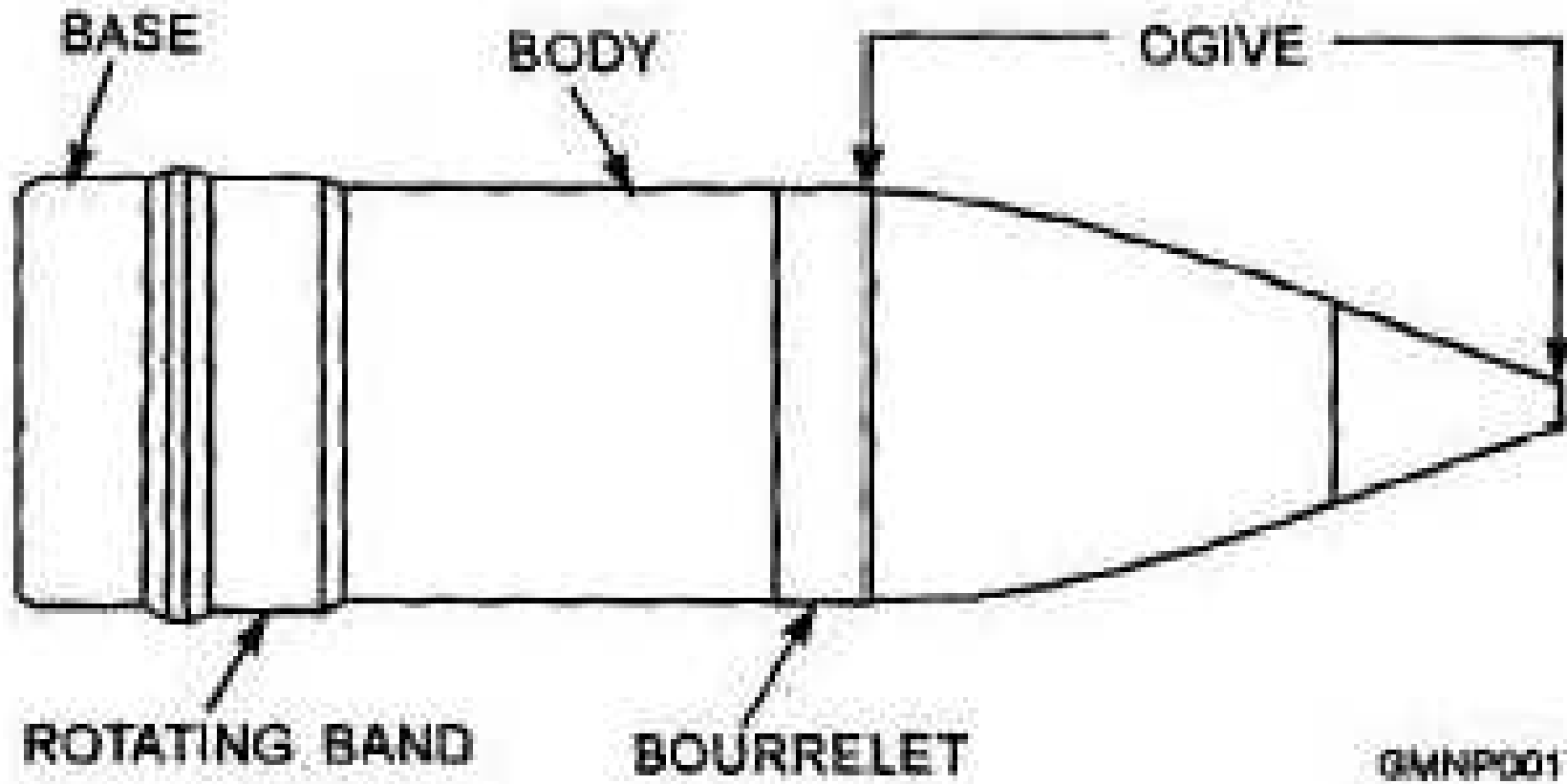
RECORD DIVISION  
NAVY DEPARTMENT

# CONVENTIONAL AMMUNITION









GMNPD017



2013/01/15 23:28



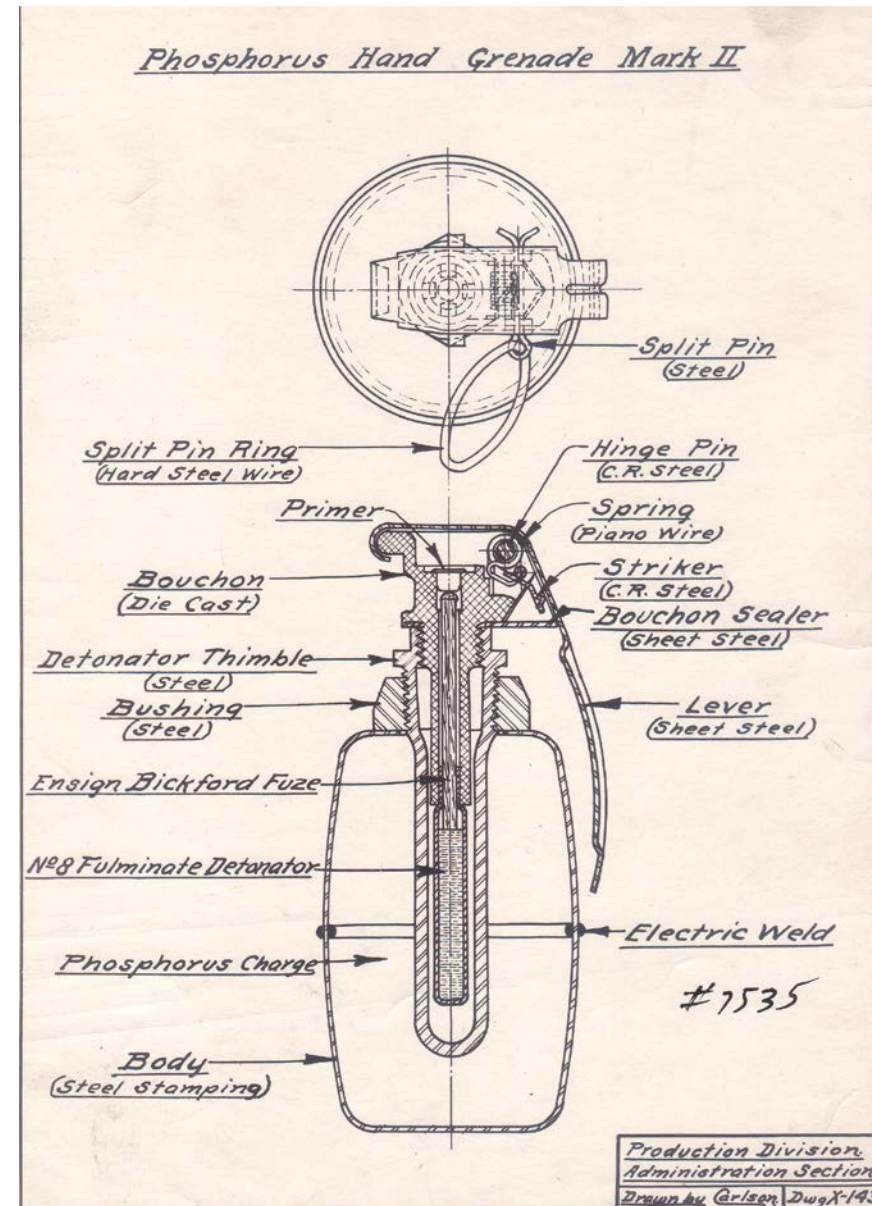




# WHITE PHOSPHOROUS (WP)



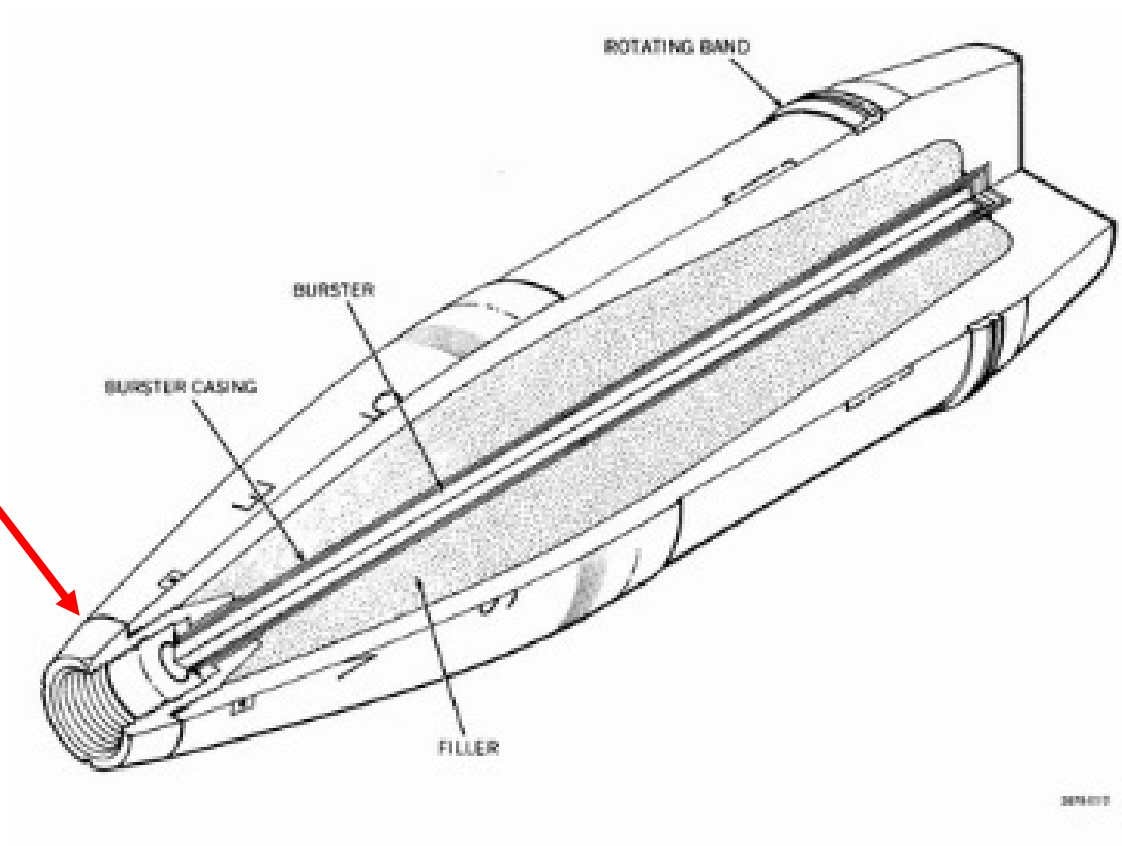
# WW I Mk- II WP Hand Grenade



# (World War I era) 4-inch "Stokes" WP Mortar



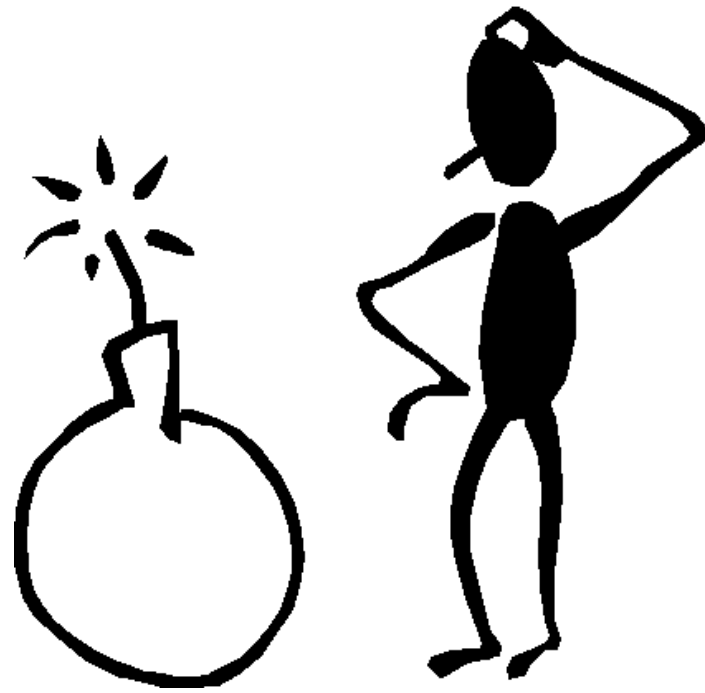
# MODERN ARTILLERY (WP) PROJECTILE



# **BASIC WP SAFETY PRECAUTIONS**

- 1. Submerge a smoking (leaking) WP munition in water or cover it with wet sand, mud, dirt or foam as quickly and gently as possible.**
- 2. Never approach a smoking WP munition unless absolutely necessary. Burning WP may detonate the burster or dispersal explosive at any time.**
- 3. Transport a smoking (leaking) WP munition totally immersed in water, wet sand or mud.**

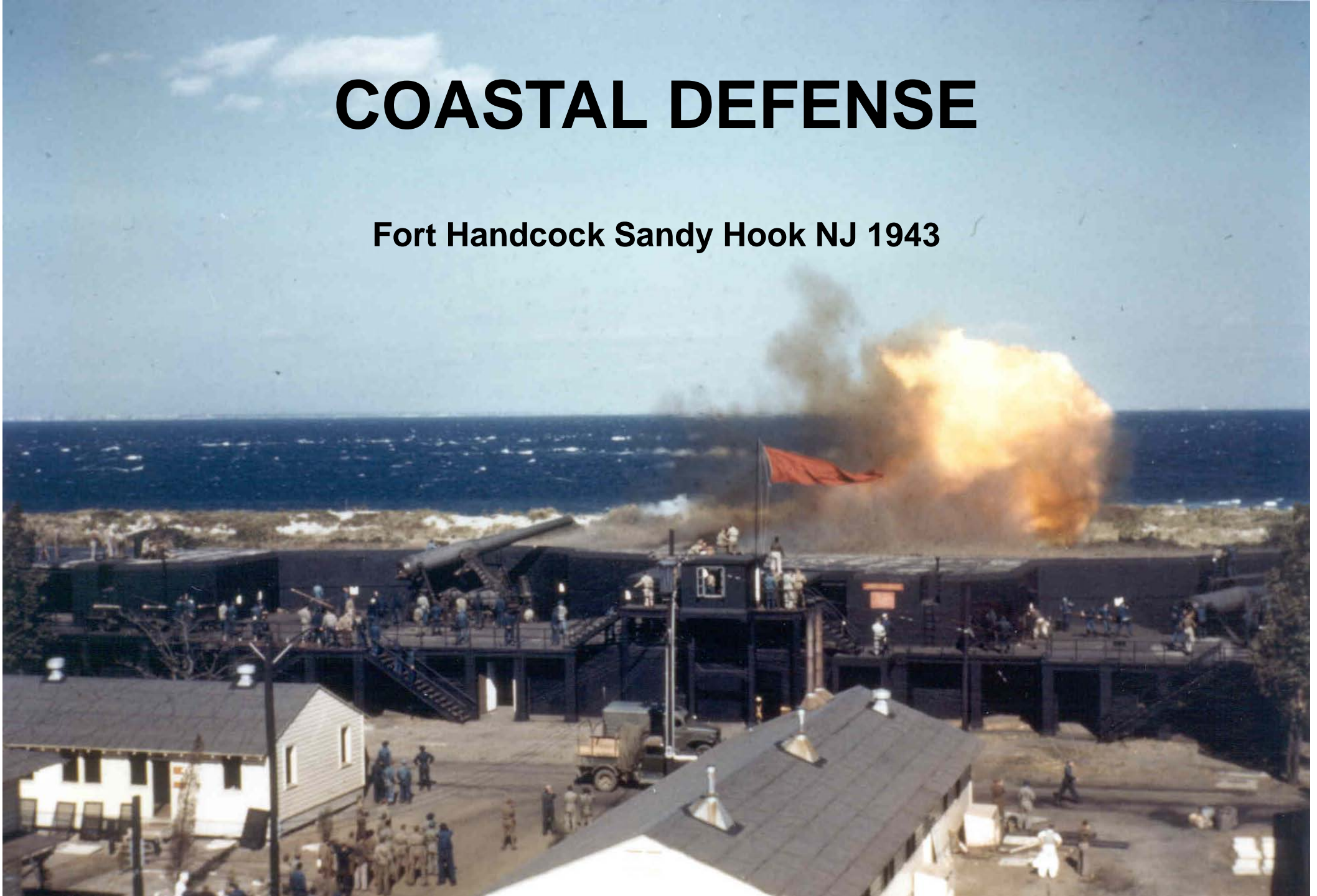
# QUESTIONS





# COASTAL DEFENSE

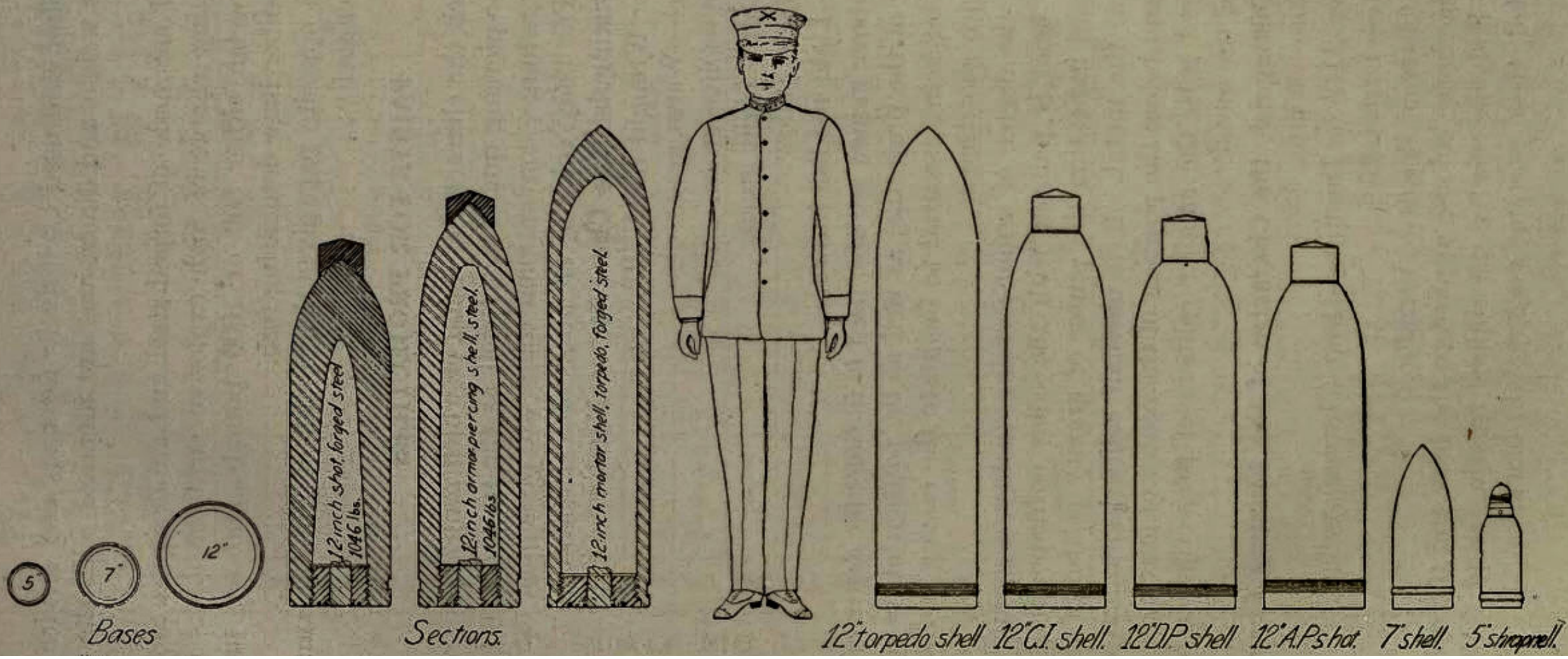
Fort Hancock Sandy Hook NJ 1943





# TYPES OF PROJECTILES FOR U.S. CANNON.

SCALE  
0 1 2 3 4 5 6 7 8 9 10 INCHES



5

7

12"

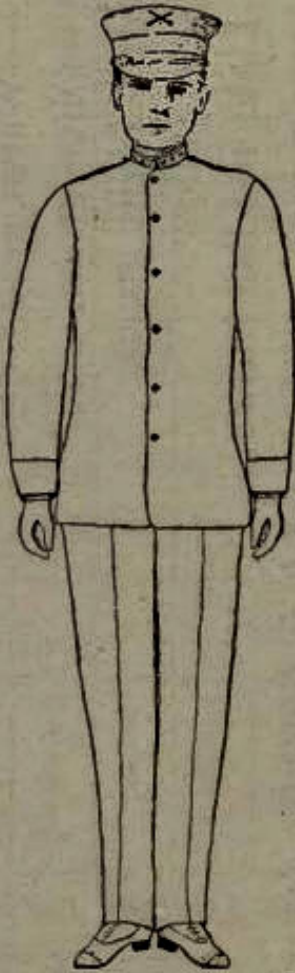
Bases

12 inch shot, forged steel  
1046 lbs.

12 inch armor piercing shell, steel.  
1046 lbs.

Sections.

12 inch mortar shell, torpedo, forged steel.



12" torpedo shell

12" C.I. shell.

12" D.P. shell

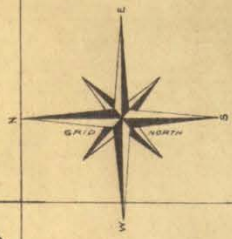
12" A.P. shot.

7" shell.

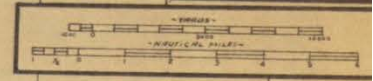
5" shrapnell.

12" torpedo shell 12" C.I. shell. 12" D.P. shell 12" A.P. shot. 7" shell. 5" shrapnell.

ATLANTIC OCEAN



AUG 44 A.E. OFFICE	
DATE	OFFICE
REVISIONS	



BTRY NO. 2 MAX. RANGE 44,680 YDS. 2-16" BC CASEMATED

BTRY NO. 3 MAX. RANGE 30,100 YDS. 2-12" BC CASEMATED

LEFT LIMIT AZ. 211.36°  
LEFT LIMIT AZ. 206.36°

RIGHT LIMIT AZ. 351.36°  
RIGHT LIMIT AZ. 356.36°

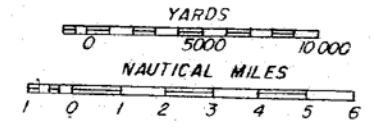
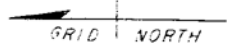


**HARBOR DEFENSES  
OF THE  
DELAWARE  
FIELDS OF FIRE  
Battery 2 and 3**

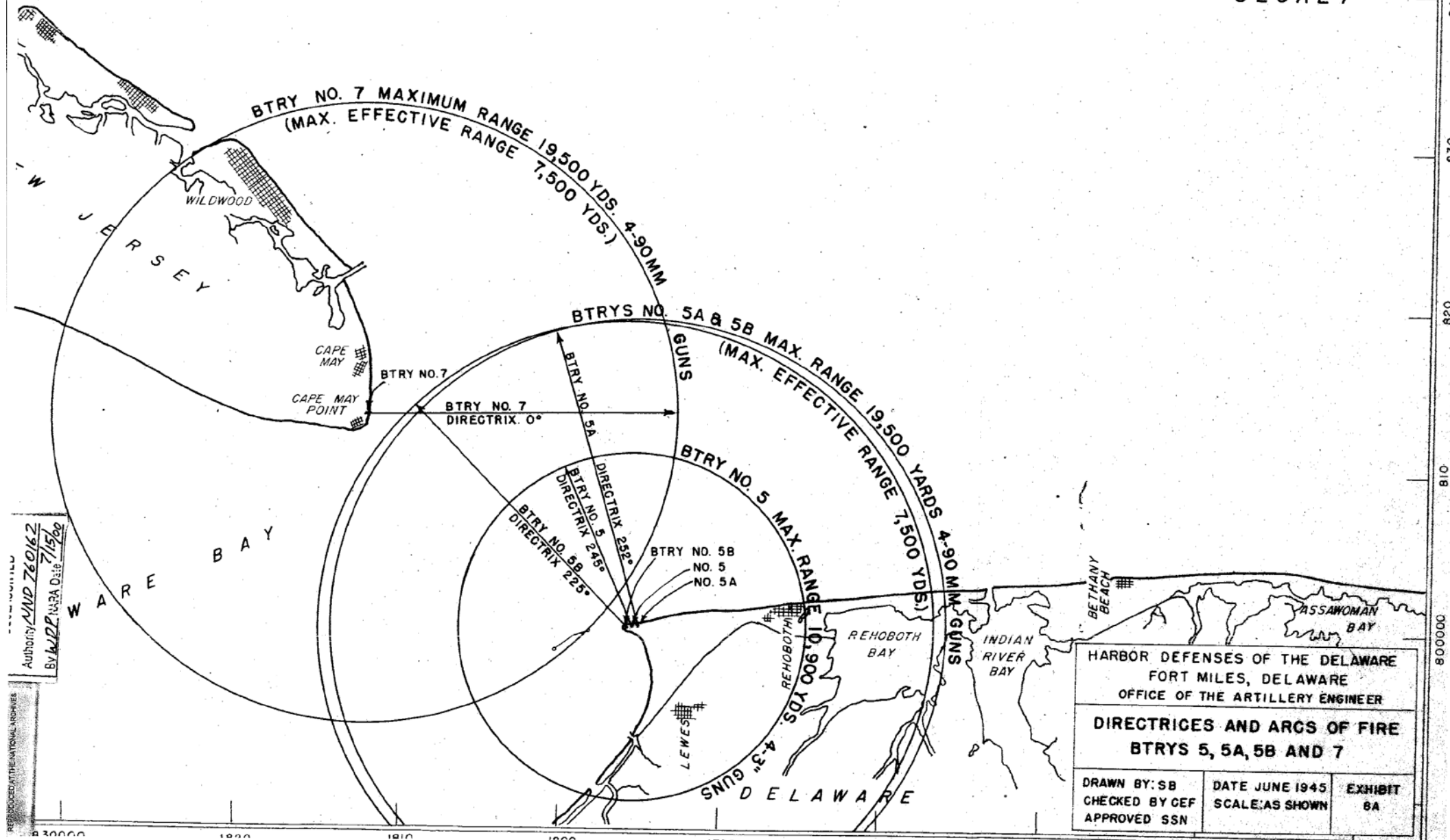
PREPARED BY PLANS PROJECTS OFFICE  
FT. MILES, DELAWARE

DRAWN BY: <i>EE</i>	DATE: MARCH 1943
CHECKED BY:	EXHIBIT NO.
H.D. COMMANDER:	

1830,000 1820 1810 1800 1790



SECRET



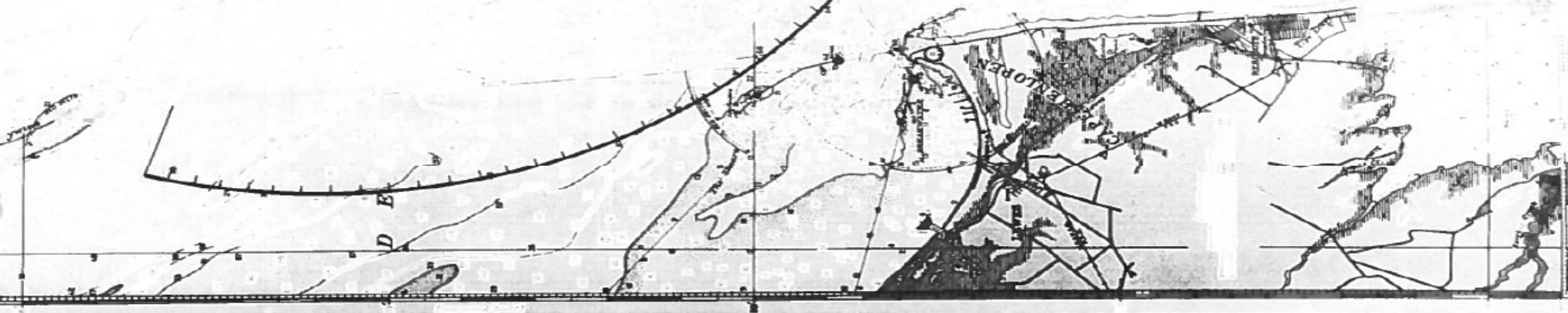
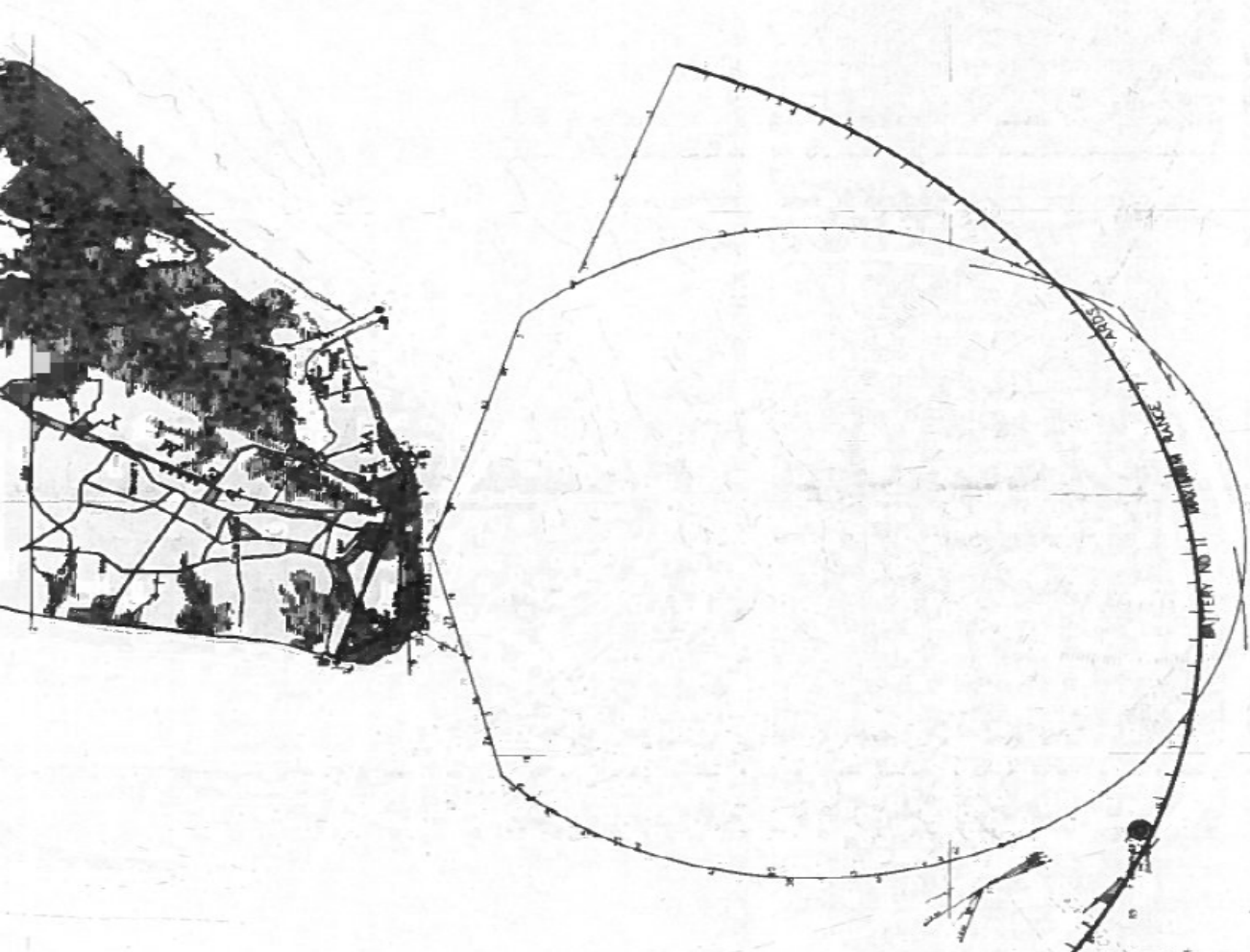
Authority: MND 760162  
By: WDR: LTRA Date: 7/15/00

REPRODUCED AT THE NATIONAL ARCHIVES

HARBOR DEFENSES OF THE DELAWARE FORT MILES, DELAWARE OFFICE OF THE ARTILLERY ENGINEER		
DIRECTRICES AND ARCS OF FIRE BTRYS 5, 5A, 5B AND 7		
DRAWN BY: SB	DATE: JUNE 1945	EXHIBIT
CHECKED BY: CEF	SCALE: AS SHOWN	8A
APPROVED: SSN		

800000  
810  
820  
830  
R400000

# (4) 155mm Guns



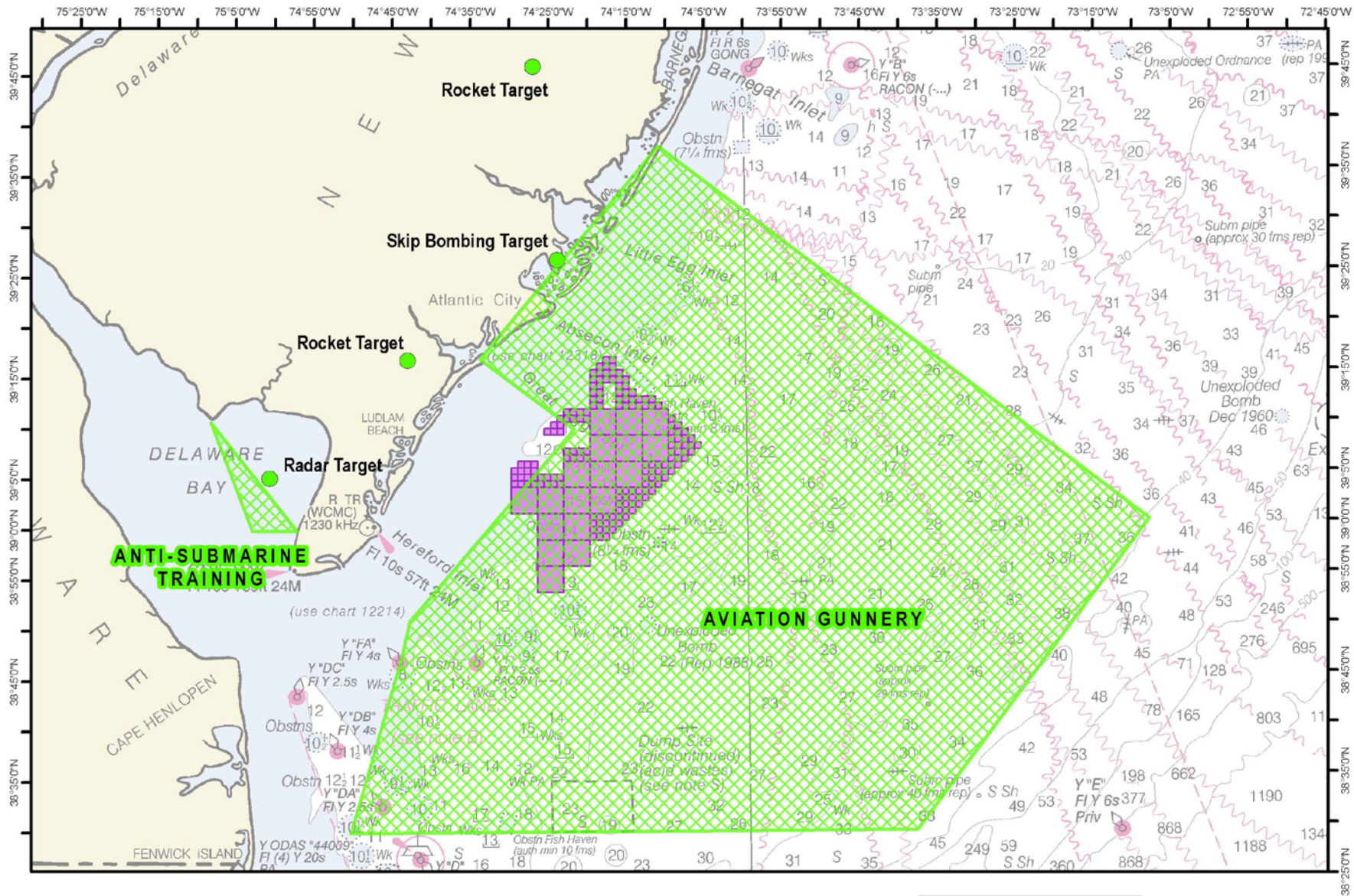
# STATUS 1945 DELAWARE RIVER COASTAL DEFENSES

<u>BTRY</u> <u>NO.</u>	<u>NAME AND</u> <u>CONST. NO.</u>	<u>NO. GUNS</u>	<u>CAL. AND</u> <u>MODEL</u>	<u>MODEL OF</u> <u>MOUNT</u>	<u>MAXIMUM</u> <u>RANGE YDS</u>	<u>LOCATION</u>	<u>EXISTING</u> <u>OR</u> <u>PROJECTED</u>	<u>ARMAMENT</u> <u>EMPLACED</u> <u>OR NOT</u>	<u>STATUS ON</u> <u>COMPLETION</u> <u>OF PROJECT</u>	<u>EXHIBIT NO.</u> <u>SHOWING DIR.</u> <u>AND F/F</u>
1	Herring 221	2	6" 1903A2	BC-M1	27,100	Miles	Existing	Yes	Retained	7A
<del>2</del>	<del>Smith 118</del>	<del>2</del>	<del>16" MK.II-Mod. 1942 1-1922-Navy</del>	<del>BC-M1</del>	<del>45,150</del>	<del>Miles</del>	<del>Existing</del>	<del>Yes</del>	<del>Retained</del>	<del>6A</del>
<del>3</del>	<del>519</del>	<del>2</del>	<del>12" 1895-M1A2</del>	<del>BC 1917</del>	<del>29,300</del>	<del>Miles</del>	<del>Existing</del>	<del>Yes</del>	<del>Retained</del>	<del>6A</del>
4	Hunter 222	2	6" 1903A2	BC-M1	27,100	Miles	Existing	Yes	Retained	7A
<del>5</del>	<del>None</del>	<del>4</del>	<del>3" M1903</del>	<del>BC M1903</del>	<del>11,300</del>	<del>Miles</del>	<del>Existing</del>	<del>Yes</del>	<del>Retained</del>	<del>8A</del>
5A	None	4	90mm M1	2-BC M3 2-M1A1	7,500*	Miles	Existing	Yes	Retained	8A
5B	None	4	90mm M1	2-BC M3 2-M1A1	7,500*	Miles	Existing	Yes	Retained	8A
6	223	2	6" M-1	BC-M3	27,100	Cape May	Existing	Yes	Retained	7A
7	None	4	90mm M1	2-BC M3 2-M1A1	7,500*	Cape May	Existing	Yes	Retained	8A
8	Mines	35 gps	M-4	-	-	Miles	Existing	**	Retained	3D

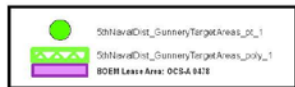
\* - Range given is maximum effective range. Firing table maximum range is 19,500 yds.

\*\* - Mine shore installations are complete. The mine field, which had been completely planted, was ordered picked up by 1st Indorsement, Hq. Southeastern Sector, file G3 476/15 (N), dated 24 March 1945 to letter, Hq. HD Delaware, file 660.3 x 476 dated 22 March 1945, subject: "Plan for Removal of Submarine Mine Defense, HD Del."





**HISTORIC DOCUMENT RESEARCH:  
4TH NAVAL DISTRICT POSTWAR  
GUNNERY AND TARGET AREAS**



Scale: 1:750,000  
NAD83 UTM Zone 18N



CinC Lant File  
A5-1(15)  
( 0856 )

UNITED STATES ATLANTIC FLEET

Care Postmaster, New York, N. Y.,

25 April 1942.

CONFIDENTIAL

From: Commander in Chief, United States Atlantic Fleet,  
To : ATLANTIC FLEET.

Subject: Use of Chesapeake Bay for Target Practice by Naval  
Vessels.

Reference: (a) LantFlt Conf. Memo. 25CM-42.

Enclosure: (A) Reproduction of chart showing firing areas.

1. Enclosure (A) is forwarded herewith for information in  
connection with reference (a).

*O. M. Hustvedt*  
O. M. HUSTVEDT,  
Chief of Staff.

DISTRIBUTION: (16CM-42)  
List I, Case 2, A, M, X.  
SPECIAL: ENL, EN6, ND5, NY6

*C. J. CATER*  
C. J. CATER,  
Flag Secretary.

Finished *W.B.B.* File

RECEIVED S-C FILES  
Room 2165

APR 28 1942

10:37

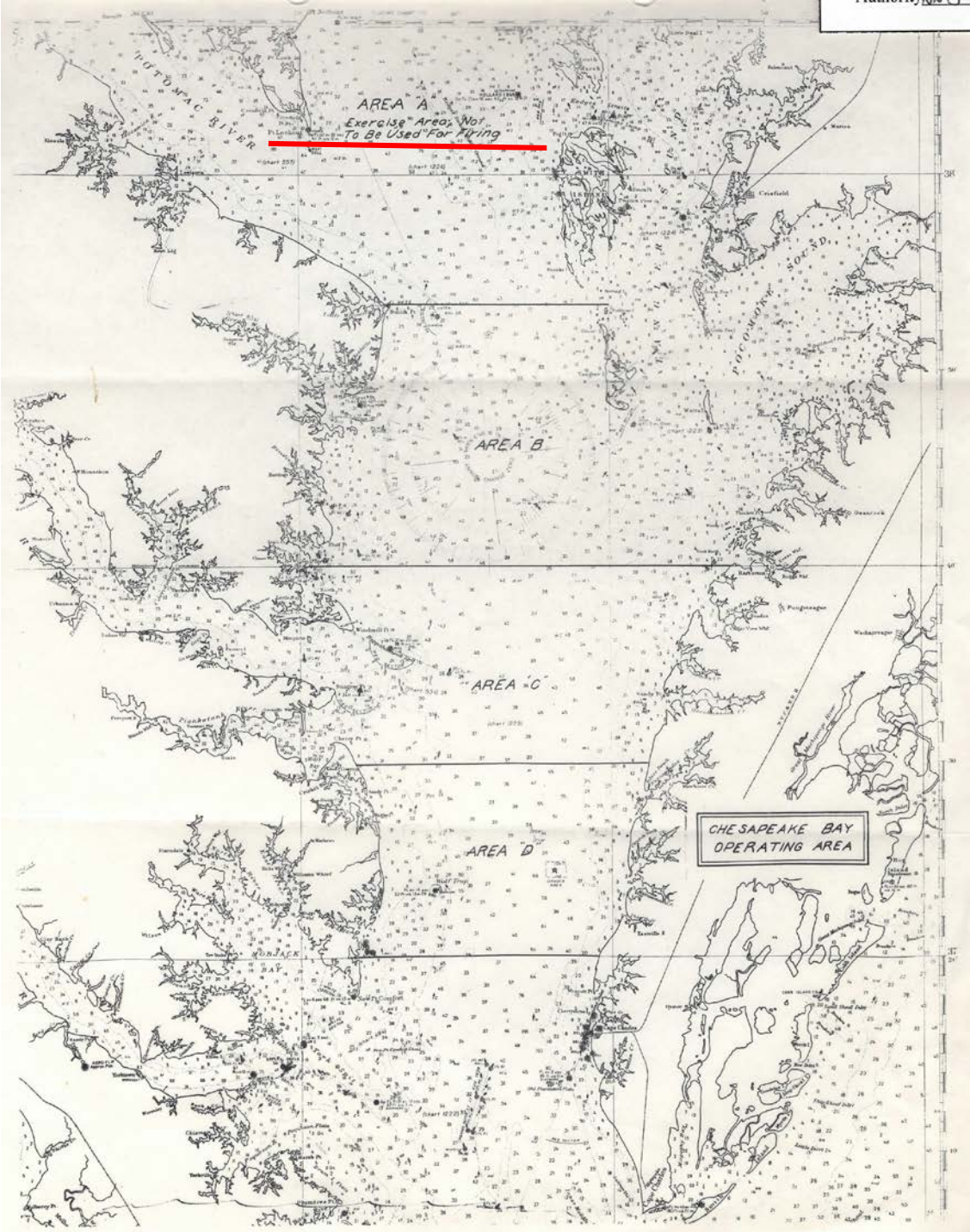
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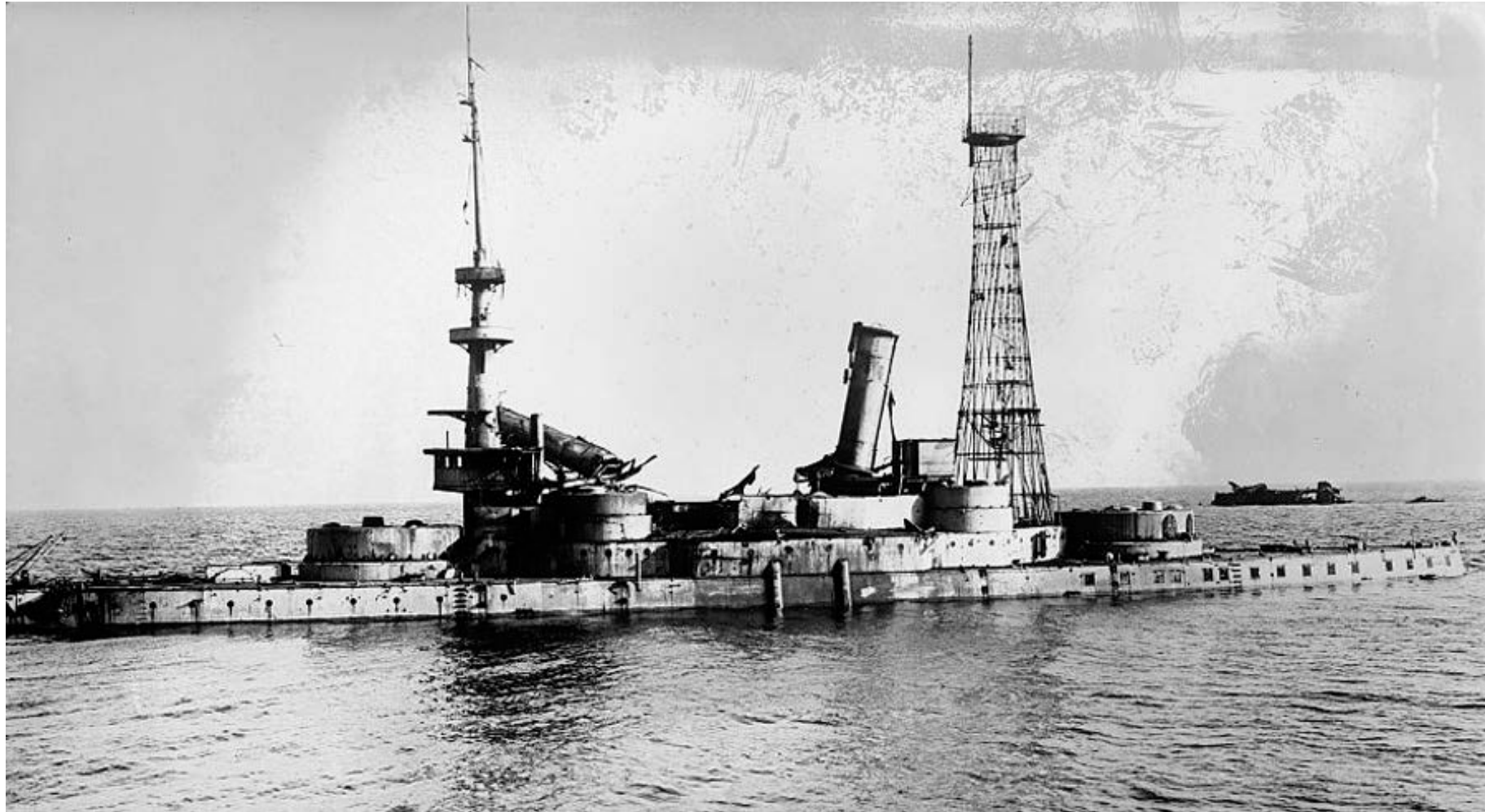
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URN *6313*

*(SC) H2-14/ND5*

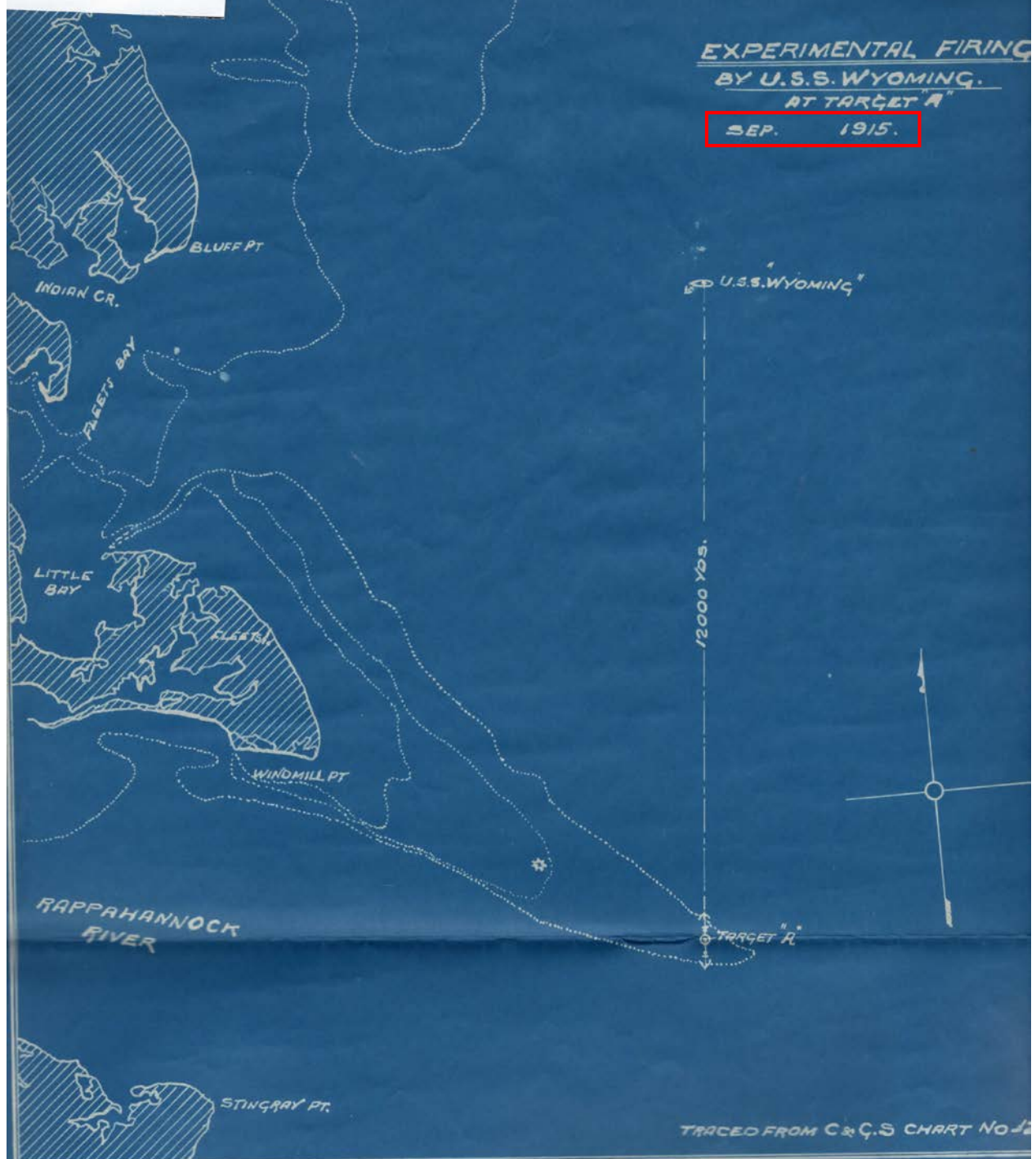
Finished *M.B.B.* File  
*5/20/42*





**November 1920, wreck of the *USS Indiana* in the shallow waters of the Chesapeake Bay near Tangier Island. Second target in the background is the remains of the *USS San Marcos*.**

EXPERIMENTAL FIRING  
BY U.S.S. WYOMING.  
AT TARGET "A"  
SEP. 1915.



TRACED FROM C & G.S. CHART No. 12

# QUESTIONS

