Survey No. HA-1960
Magi No.
DOE ___yes ___no

Maryland Historical Trust
State Historic Sites Inventory Form
Maryland Inventory of Historic Properties

1. Name

Historic Name Mobile Artillery Storehouse; Reviewing Stand

Common Name and Building Number Buildings 402, 408

2. Location

Street and Number Aberdeen Proving Ground - Aberdeen Area

City, Town Aberdeen

Congressional District

State and Zip Code MD 21005

County Harford

3. Classification

Category	Ownership	Status	Present use	
__ District	X Public	X Occupied	__ Agriculture	__ Museum
__ Building(s)	__ Private	__ Unoccupied	__ Commercial	__ Park
__ Structure	__ Both	__ Work in Progress	__ Educational	__ Private Residence
X Site	Public Acquisition	Accessible	__ Entertainment	__ Religious
__ Object	__ In Process	__ Yes: Restricted	__ Government	__ Scientific
	__ Being Considered	__ Yes: Unrestricted	__ Industrial	__ Transportation
	__ Not Applicable	X No	X Military	X Other: Storage

4. Owner of Property

Name U.S. Army Aberdeen Proving Ground Support Activity (STEAHP-DIC)

Street & Number Building 310

Telephone No.: (410) 278-6755

City, Town Aberdeen Proving Ground

State and Zip Code MD 21005-5001

5. Location of Legal Description

Courthouse, Registry of Deeds, etc.

Liber# _____ Folio# _____

Street & Number

City, Town

State and Zip Code

6. Representation in Existing Historic Survey

__ Yes __ No

Title Cultural Resource Management Plan - Aberdeen Proving Ground

Date July 1993

__ Federal __ State __ County __ Local

Depository for Survey Records

City, Town

State and Zip

7. Description

Survey No. HA-1960

Condition

__ Excellent
X Good
__ Fair

__ Deteriorated
__ Ruins
__ Unexposed

__ Unaltered
__ Altered

X Original Site
__ Moved

SEE CONTINUATION SHEETS

8. Significance

Survey No.

Period

__ Prehistoric
__ 1400-1499
__ 1500-1599
__ 1600-1699
__ 1700-1799
__ 1800-1899
X 1900-

Areas of Significance

__ Archeology-Prehistoric
__ Archeology-Historic
__ Agriculture
__ Architecture
__ Art
__ Commerce
__ Communications
__ Community Planning
__ Conservation
__ Economics
__ Education
__ Engineering
__ Exploration/Settlement
__ Industry
__ Invention
__ Landscape Architecture
__ Law
__ Literature
X Military
__ Music
__ Philosophy
__ Politics/Government
__ Religion
__ Science
__ Sculpture
__ Social/Humanit
__ Theater
__ Transportation
__ Other (specify)

Specific Dates **Architect** **Builder** **Area**

Applicable Criteria: __A __B __C __D

Applicable Exception __A __B __C __D __E __F __G

Level of Significance __National __State __Local

SEE CONTINUATION SHEETS

Overview

The Munson Test Course was established at Aberdeen Proving Ground (APG) in the 1930s and greatly expanded during the mobilization efforts of World War II. There are a number of buildings that support the Munson Test Course area, including Buildings 402 and 408. Building 402, the Mobile Artillery Storehouse and adjoining Auto Headhouse, was constructed during the World War II buildup at APG. Building 408 was constructed after the end of World War II as a reviewing stand. It was used throughout much of the Cold War for demonstrations at the course. The buildings are located in the northern section of APG, to the east of the Main Front.

Architectural Descriptions

Building 402: Mobile Artillery Storehouse

Constructed in 1942, this building was designed as an storage and maintenance building. It housed 88 automobiles. It is built of brick, concrete block, and transite, upon a concrete foundation, with an end gable roof. One end gable is a simple brick wall with one oculus window and no other perforations or fenestration. The other gable has an oculus window, serving as a vent, and three pairs of tall, multipane windows. Along the length of the building are large garage-door size openings, with metal screens that close down over the doors. The doors are wooden, with smaller pedestrian doors inset into them and banks of nine-pane windows along the top third of the doors. Along the length of the gable roof are several curved vent pipes.

The Auto Headhouse, which was added to the structure in 1943, a year after its construction, is markedly different in appearance. The building has a monitor roof, consisting almost entirely of industrial sash windows. Likewise, the main first story walls are also almost entirely industrial sash windows. At the center of the end facade is a garage door, flanked on either side by vertical rows of windows.

Building 408: Reviewing Stand

Building 408 was constructed in 1955 as a reviewing stand for the Munson Test Course. Designed as a temporary structure, this building is associated with Cold War activities on the test course. Building 408 is a low-lying, one-story building of transite siding atop a concrete foundation. Three sides of the structure, facing out towards the course, consist of casement windows. Mounted atop the building was a light, which would flash red or green to the drivers out on the course, indicating when the viewers inside were ready to witness the tests. The rear facade contains a central door, with two signs reading "T-408" and "Aberdeen Proving Ground MD," and no other apertures. The interior contains a speaker's podium, a number of wooden chairs oriented towards the course, and standing ashtrays. The reviewing stand would have been used by visiting dignitaries and Army generals to observe demonstrations on the course. Underneath the windows are several flat-top surfaces supported by brackets. The building is no longer in use.

Buildings 402 and 408 were erected at the Munson Test Course in support of the testing activities being carried out there. Established during the 1930s, and greatly expanded during World War II, the Munson Test Course set the standards internationally for tactical vehicle testing. Building 402 was built during this World War II expansion to provide additional space for general maintenance work on the test vehicles. Building 408 was erected after the end of World War II as a reviewing stand for visiting dignitaries and military officials witnessing tests on the course.

Automotive Testing at Aberdeen During World War I

Automotive testing at Aberdeen actually began during World War I; the original program for the proving ground included one Tank Field, with varied terrain.[1] Testing covered primarily English tanks and possibly some captured German tanks. The site where the current Munson Test Course facilities are located was not developed at the time of the 1918 APG map. It is not clear where this original Tank Field was situated at Aberdeen.

The Interwar Years: The Establishment of the Munson Test Course

In the years immediately following the war, during demobilization, automotive tests continued. The division was charged primarily with the testing and development of automotive material such as self-propelled mounts or gun carriages; tanks, tractors, trailers, transport wagons; special items in automotive equipment; and all work involving road tests. In 1922 alone, in addition to tests of self-propelled mounts, four types of tractors, six types of caterpillar trailers, and six types of trucks underwent extensive testing. The findings of these kinds of tests helped improve the vehicles as well as their equipment; a gyroscopic compass was refined for satisfactory use in tanks, and a stroboscope was proven a valuable addition to the Mark VIII tank. It was also noted that "a standard Ford chassis could be converted into a reconnaissance vehicle by substituting airplane wheels for the standard equipment."[2] The Automotive Testing Division was also responsible for maintaining the tractors and trailers that were in use at the proving ground.

In addition to the inspection and maintenance of vehicles, the modification of existing or older model equipment was one of the typical activities during these interwar years. Tests during 1928 included extensive alterations on the medium tank TI and medium tank Model 1925, as well as on Mark IX motor gun carriages and Mark VII 75mm motor gun carriages. The Ford tank engine installation was modified to operate as an 8-cylinder power rather than two 4-cylinder units; the brake system of two 6-wheel, four-wheel-drive Chevrolet cross-country trucks was modified; and twenty 3" field gun trailers Model 17 were adapted for issue as trailers or tractor transport. During 1928, the division also constructed six cross-country cars, one for the Coast Artillery and five for the Signal Corps.

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[1]Ordnance Department, *The Big Gun*, Aberdeen Proving Ground, MD, 1919.

[2]Slator, Capt. W.J., *Historical Data: Aberdeen Proving Ground, 1917-1939*, pp. 28-30.

During fiscal year 1933, the automotive testing branch was greatly expanded, with the construction of some of the elements that we recognize today as part of the Munson Test Course. A water tank, mud course, and a circular cobblestone course were all constructed. Other grades were achieved through the construction of a new permanent washboard. During 1934 (April to December) a Storehouse for Mobile Artillery (Building 370) was constructed along the Main Front. Part of a contract for three buildings that included an ordnance warehouse at the Main Front and an ordnance warehouse for heavy supplies elsewhere on the base, the Storehouse was constructed by Seymour Ruff & Sons, a contractor in Baltimore. The new brick building was one-story high, with a giant interior space divided across the middle by steel columns and cross bracing. In each gable were screened metal louvers, behind which were sliding doors operated from the floor. The building remains much the same today in its external appearance, including the original wooden garage doors.

The expansion of the automotive testing facilities, which included the installation of proof facilities and the building of test courses, was accomplished through the use of Public Works Administration labor.[3] Between 1934 and 1935, the new automotive laboratory was completed, in a part of the machine shop (its location is unclear at this time). Here, new track-testing equipment and an engine-testing dynanometer enabled researchers to test the losses in the tracks of fighting vehicles, and to determine the power input and output, and the life and strength of a track. This new track-testing machine was relied upon heavily in various comparative track tests. Also constructed during this time was a machine for testing different types of track bearings and closures for track pins, which enabled operators to obtain data without the expense of running the vehicle in the field.

A typical example of the important testing and development work being conducted within the Automotive Testing Division during these interwar years involves the combat car T4. This vehicle was designed at the proving ground and built at Rock Island Arsenal. Brought to the proving ground, it underwent a thorough proof test, during which time the design was further enhanced as weaknesses that were discovered were corrected. The vehicle was sent to Fort Knox and later to Fort Riley, and was finally recommended as a standard combat car for the Cavalry.[4] The Division was also assigned to research problems such as improving the vision of tanks through the development of periscopes.

The value of automotive testing proven, it was recommended that the automotive laboratory be made

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[3]National Archives, Record Group 77, Box 3, Book 7, p. 52. Regarding public relief work at Aberdeen, Slator states that WPA and CWA laborers had begun working since 1932 at Aberdeen Proving Ground, constructing permanent buildings, clearing recovery and bombing fields, and building roads and bridges. A Civilian Conservation Corps Company (No. 3320) was organized at APG in July 1935. They worked at three things primarily: the correction of drainage and erosion problems, construction of firebreaks, and clearing and construction of roadways. The company was active at APG until June 1938, when it was transferred to Tobyhanna, PA. At the newly expanded automotive test course, the work that the CCC unit completed may only have included a drainage project. Slator, *APG*, p. 16.

[4]Slator, *APG*, p. 39.

permanent and given additional staff. It was further suggested that one type of every vehicle manufactured for issue to the military be assigned permanently to Aberdeen for continous tests.

New, sophisticated test equipment was built during 1938-39, including a device for the testing of tracks under different conditions, a machine to test bullet-resisting tubes and tires, and equipment to test air, oil, and fuel filter efficiency. By 1939, with war beginning in Europe, there was a large increase in the acceptance testing of commercially-produced powders for the 155mm howitzer and 155mm gun.

Testing During World War II

In 1939, the Automotive Division consisted of five officers, three enlisted men, and 27 civilians. At D-Day, the division boasted 67 officers, 423 enlisted men, 299 civilians, and 60 WACs. The facilities were enormously expanded at the course, as was the course itself.

It was during this expansion that Building 402, a Mobile Artillery Storehouse, was constructed on the site for conducting of routine operator-type maintenance on the test vehicles. A necessary part of the support of the Munson Test Course operations, this building was enlarged within the first year of its operation by the addition of an Auto Headhouse. Capable of housing up to 88 vehicles, this building provided an area for basic auto work such as tire changes, oil changes, transmission work, etc. on the test vehicles. This Storehouse was one of a number of similar structures erected to support the testing activities of the course. Building 370, along the Main Front, had been built in the 1930s, and Building 339 was constructed at the Munson Test Course nearby Building 402 in the same year, 1942. At APG's other automobile courses, the endurance cross-country courses at Perrman and Churchville, Maryland, there were also facilities similar to Building 402 erected to provide maintenance areas for those courses.

An incredible range of testing was conducted at APG during World War II, from research on synthetic rubber tires and tracks, to the development testing of a torsion-bar suspension system, inspection tests of M4 tanks, waterproof testing of jeeps, lab analysis of paints, dynamometer tests of new test engines, road tests of 105mm howitzer carriages, comparative tests of engine oils, and fordability tests of M5 tanks. In addition, many tests were conducted on enemy materiel which had been seized during battle and then shipped to APG for evaluation. For example, from May 1943 to August 1945, APG was the site of numerous tests on captured combat vehicles including a Russian T34 tank; a Japanese 4x4, Model M2595 passenger vehicle; a German "Schwinkraft," amphibious personnel carrier; and several German, PzKw "Panther" tanks.[5]

Post War Testing at Munson: Building 408

Automotive testing continued at the Munson Test Course after the conclusion of World War II.

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[5]Records of the Chief of Ordnance, RG 156, Monthly Progress Reports of Aberdeen Proving Ground and Arsenals, 1942-46. (Entry 903, Box J-737V).

During 1955, a reviewing stand was constructed along the course. Demonstrations of vehicle testing have provided opportunities throughout the history of Aberdeen Proving Ground to display automotive developments. On June 24, 1931, the *Baltimore Sun* covered a test exhibiting the superiority of the caterpillar tread in mechanized vehicles, by comparing an improved British Vickers six-ton tank with muffled engine and rubber-tired wheels on a portable track to light eight-and-a-half-ton and medium 15-ton American tanks.[6] Other demonstrations have been performed for important government officials, visiting dignitaries, or other military units. At the 20th Annual Meeting of the Army Ordnance Association, on October 12, 1939, some 6,000 people witnessed demonstrations of the 37mm anti-tank gun, demolition bombs, the firing of a 16" seacoast rifle, and anti-tank guns used against an actual tank. The riderless tank was destroyed by the first three shells, before three other guns even had a chance to fire. In attendance were George C. Marshall, members of the President's Cabinet, members of Congress, and military and naval heads.[7]

Building 408 would also have been used by visiting dignitaries and military officials to view many of the tests of the Cold War era. The building retains its original speaker's podium, chairs, and standing ashtrays. Mounted atop the building was a light that flashed red or green to alert the drivers on the course when the viewers were ready to witness a test. This reviewing stand was eventually abandoned, and the function transferred to Barricade Two of the Main Front (now demolished).

Conclusion

Still in active use today, the Munson Test Course was established to test both American equipment and captured foreign vehicles. The course was originally established in 1933, expanded in 1934 and 1937, and then enlarged extensively at the outset of American involvement in World War II. The vehicle testing program at Aberdeen established standard patterns that then became the model for tactical vehicle testing throughout the world.

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[6]Slator, *APG*, p. 37. Quotes the *Baltimore Sun*, June 28, 1931.

[7]Slator, *APG*, pp. 63-64.

9. Major Bibliographical References

Survey No. HA-1960

SEE CONTINUATION SHEETS

10. Geographical Data

Verbal Boundary Description

11. Form Prepared by

Name/Title Heather Ewing and Judith Robinson, Architectural Historians

Organization Robinson & Associates, Inc. Date March 22, 1996

Street & Number 1909 Q Street, NW Telephone (202) 234-2333

City or Town Washington State DC 20009

Concurrence of State Preservation Officer

The Maryland Historic Sites Inventory was officially created by an Act of the Maryland Legislature to be found in the Annotated Code of Maryland, Article 41, Section 181 KA, 1974 supplement.

The survey and inventory are being prepared for information and record purposes only and do not constitute any infringement of individual property rights.

Return to: Maryland Historical Trust
DHCP/DHCD
100 Community Place
Crownsville, Maryland 21032-2023
(410) 514-7600

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AA-1760

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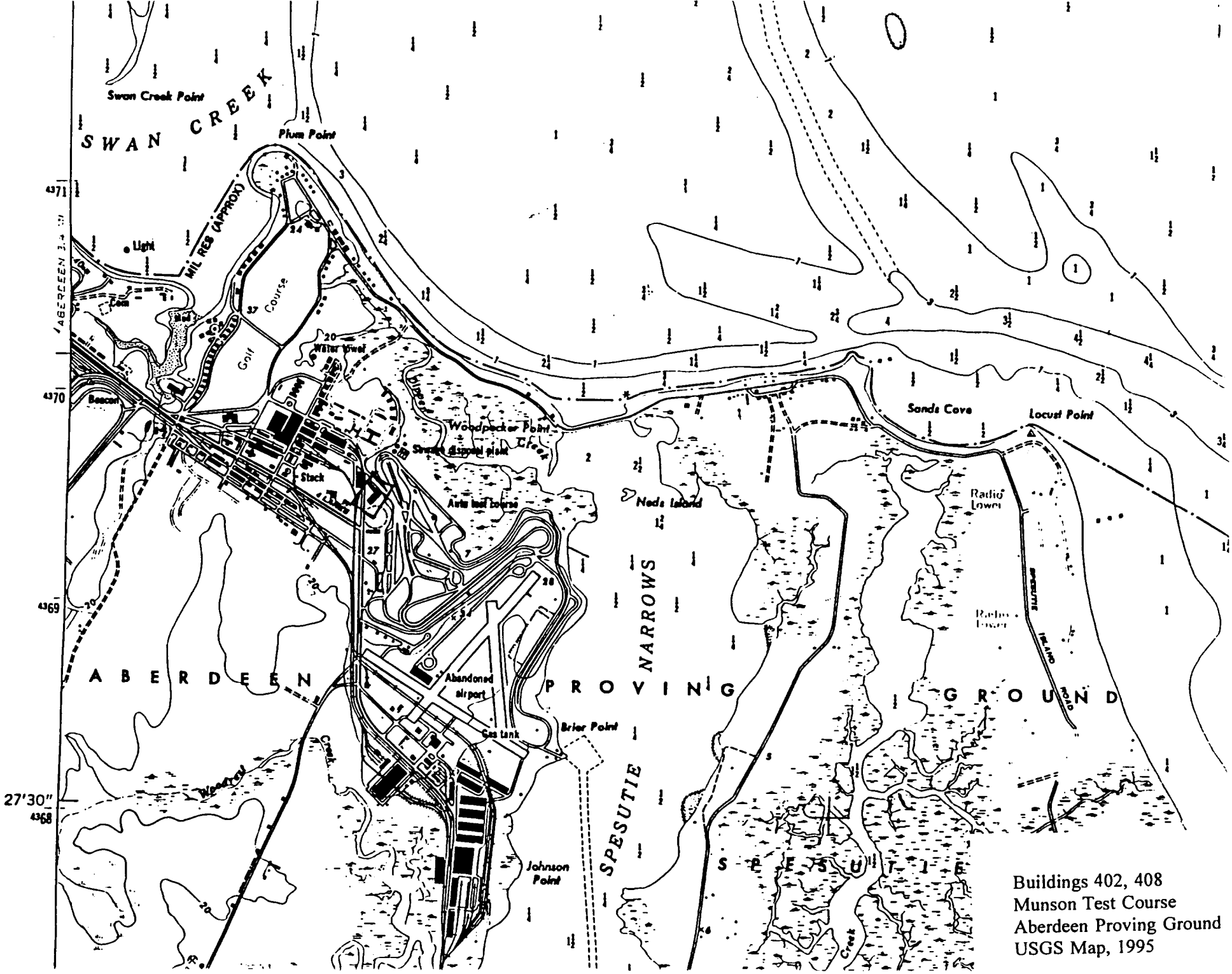
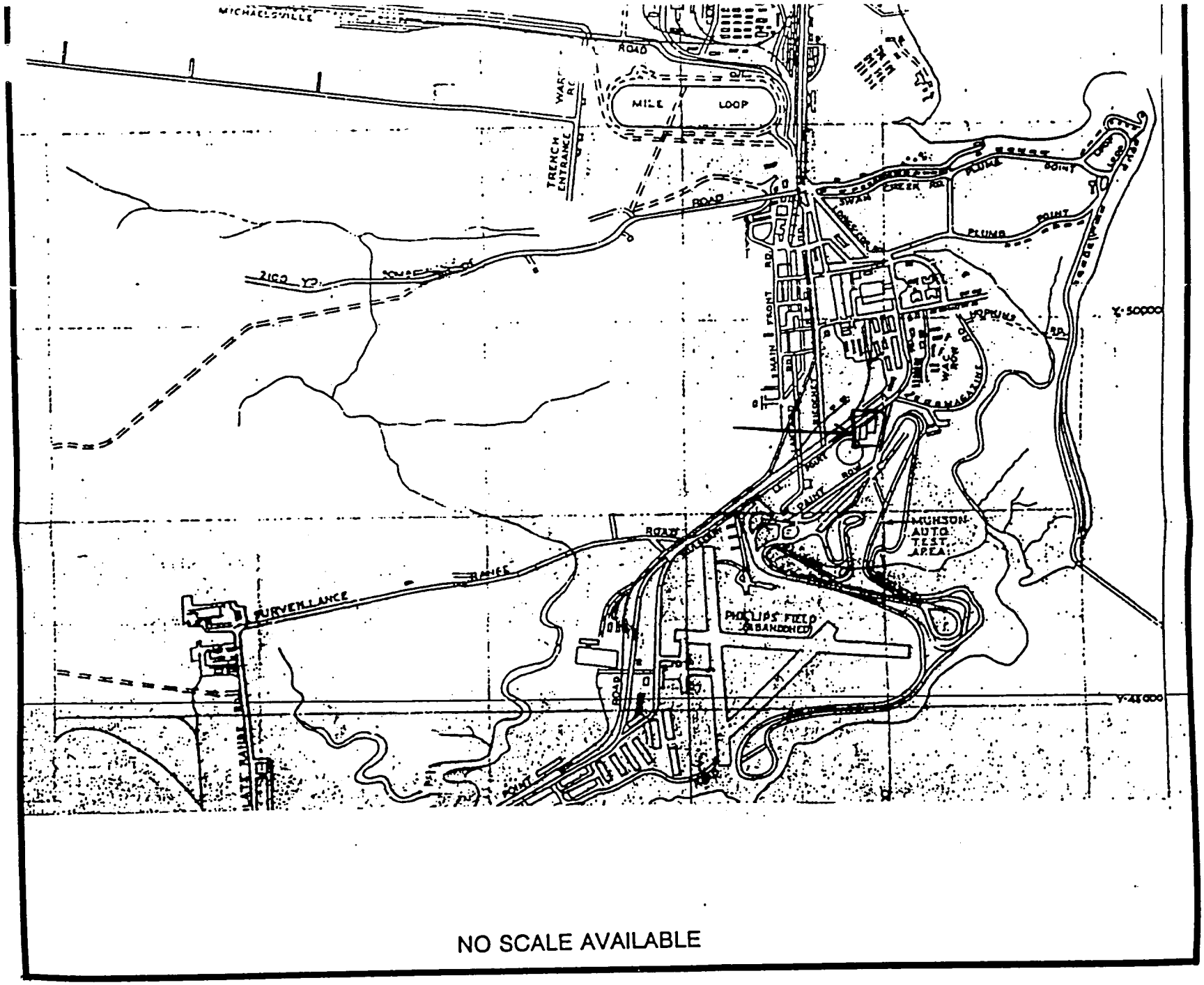


Buildings 402, 408
Munson Test Course
Aberdeen Proving Ground
USGS Map, 1995

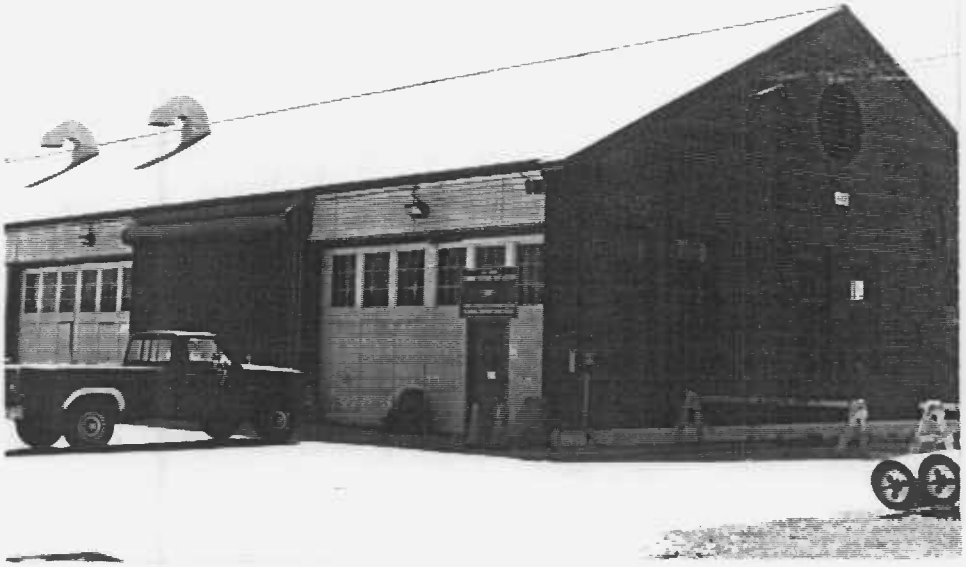


NO SCALE AVAILABLE

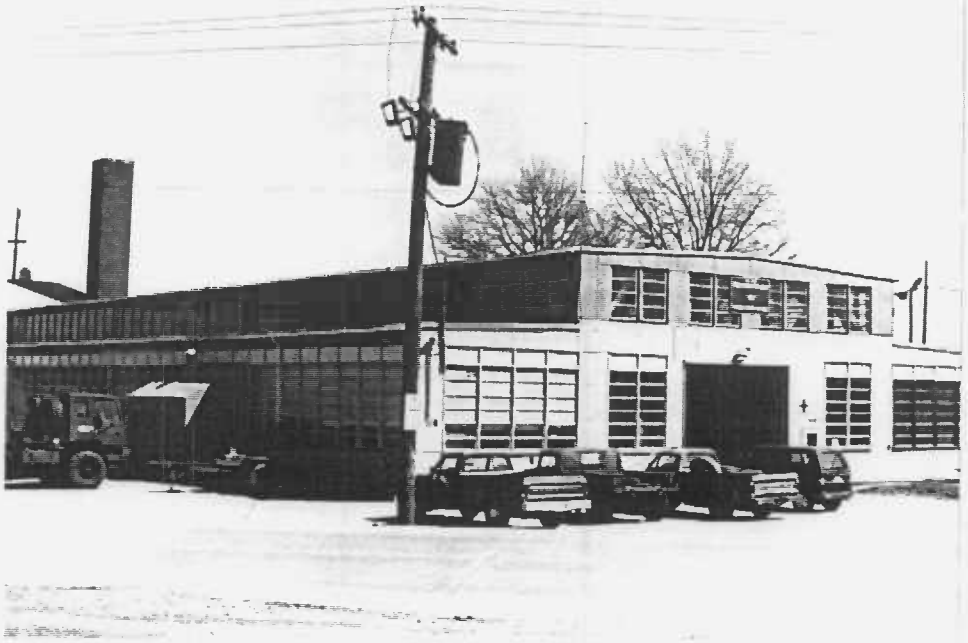
Figure 12. Engineers Department Map of the Northern Portion of Aberdeen Proving Ground (1944).

Munson Test Course
Building 402
Aberdeen Proving Ground, MD
Plan, 1944

HA-1960



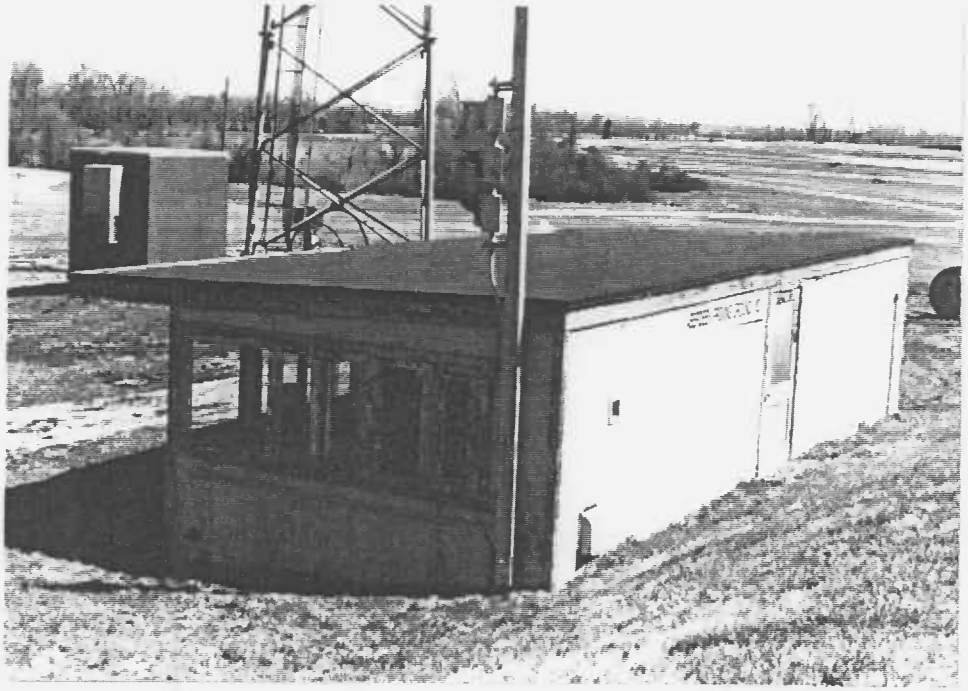
Building 402,
Artillery Storehouse Portion



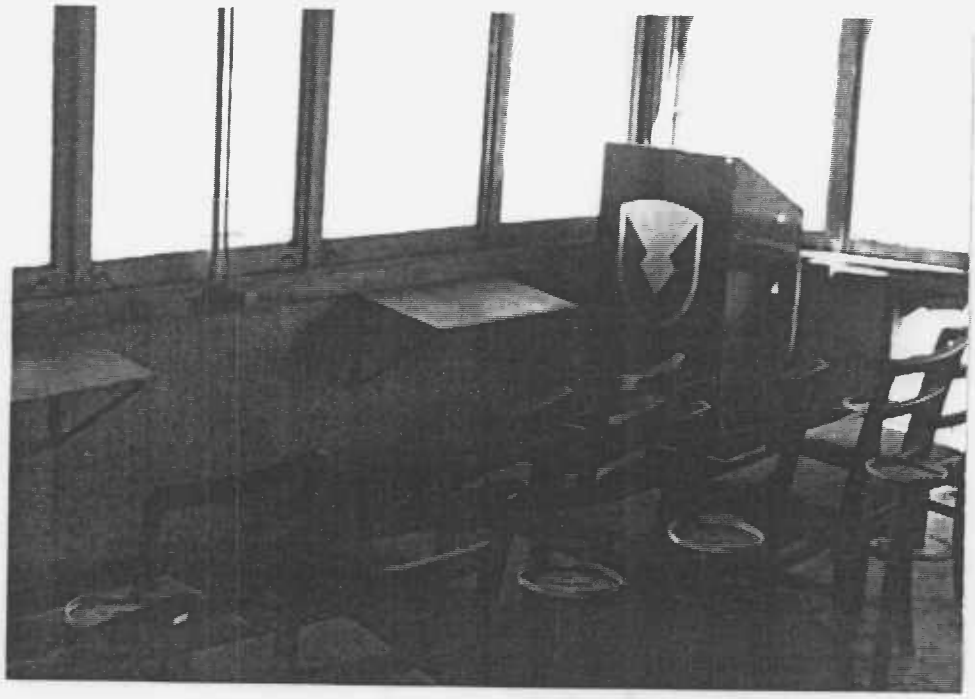
Building 402,
Auto Headhouse Portion

Building 402
Mobile Artillery Storehouse (1942)
Munson Test Course
Aberdeen Proving Ground, MD
April 1995

HA-1960



Building 408,
Exterior



Building 408,
Interior

Building 408
Test Course Reviewing Stand (1955)
Munson Test Course
Aberdeen Proving Ground, MD
April 1995