

United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in *How to Complete the National Register of Historic Places Registration Form* (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer, to complete all items.

1. Name of Property

historic name Southwestern Proving Ground Building #129

other names/site number Smokeless Powder Magazine/Site #HE0753

2. Location

street & number 195 Hempstead County Road 279

not for publication

city or town Hope

vicinity

state Arkansas code AR county Hempstead code 057 zip code 71801

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended, I hereby certify that this nomination request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set for in 36 CFR Part 60. In my opinion, the property meets does not meet the National Register criteria. I recommend that this property be considered significant nationally statewide locally. (See continuation sheet for additional comments.)

Catherine Marshall
Signature of certifying official/Title

8/19/08
Date

Arkansas Historic Preservation Program
State or Federal agency and bureau

In my opinion, the property meets does not meet the National Register criteria. (See Continuation sheet for additional comments.)

Signature of certifying official/Title

Date

State or Federal agency and bureau

4. National Park Service Certification

- I hereby certify that the property is
- entered in the National Register.
 See continuation sheet
 - determined eligible for the National Register.
 See continuation sheet
 - determined not eligible for the National Register.
 - removed from the National Register.
 - other, (explain:) _____

Signature of the Keeper

Date of Action

5. Classification

Ownership of Property
(Check as many boxes as apply)

- private
- public-local
- public-State
- public-Federal

Category of Property
(Check only one box)

- building(s)
- district
- site
- structure
- object

Number of Resources within Property
(Do not include previously listed resources in count.)

Contributing	Noncontributing	
1	0	buildings
		sites
		structures
		objects
1	0	Total

Name of related multiple property listing
(Enter "N/A" if property is not part of a multiple property listing.)

We've Gotta Get Tough: History of WWII Homefront Efforts in Arkansas, 1941-1945

Number of Contributing resources previously listed in the National Register

N/A

6. Function or Use

Historic Functions
(Enter categories from instructions)

DEFENSE/arms storage

Current Functions
(Enter categories from instructions)

VACANT/NOT IN USE

7. Description

Architectural Classification
(Enter categories from instructions)

OTHER/Plain Traditional

Materials
(Enter categories from instructions)

foundation CONCRETE

walls BRICK

CERAMIC TILE

roof ASBESTOS

other

Narrative Description

(Describe the historic and current condition of the property on one or more continuation sheets.)

8. Statement of Significance

Applicable National Register Criteria

(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing.)

- Criteria A, B, C, D with checkboxes and descriptions.

Criteria Considerations

(Mark "x" in all the boxes that apply.)

Property is:

- Criteria A through G with checkboxes and descriptions.

Levels of Significance (local, state, national)

Local

Areas of Significance (Enter categories from instructions)

MILITARY
ARCHITECTURE

Period of Significance

1941-1945

Significant Dates

1941

Significant Person (Complete if Criterion B is marked)

Cultural Affiliation (Complete if Criterion D is marked)

Architect/Builder

Howard, Needles, Tammen & Bergendorff, architect
W. E. Callahan Construction Company, builder

Narrative Statement of Significance

(Explain the significance of the property on one or more continuation sheets.)

9. Major Bibliographical References

Bibliography

(Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

Previous documentation on file (NPS):

- Documentation checkboxes: preliminary determination, previously listed, National Register, National Historic Landmark, Historic American Buildings Survey, Historic American Engineering Record.

Primary location of additional data:

- Location checkboxes: State Historic Preservation Office, Other State Agency, Federal Agency, Local Government, University, Other.

Name of repository:

Southwestern Proving Ground Building #129

Hempstead County, Arkansas

Name of Property

County and State

10. Geographical Data

Acreege of Property Less than one

UTM References

(Place additional UTM references on a continuation sheet.)

1	<u>15</u>	<u>443836</u>	<u>3733248</u>	3	<u> </u>	<u> </u>	<u> </u>
	Zone	Easting	Northing		Zone	Easting	Northing
2	<u> </u>	<u> </u>	<u> </u>	4	<u> </u>	<u> </u>	<u> </u>

See continuation sheet

Verbal Boundary Description

(Describe the boundaries of the property on a continuation sheet.)

Boundary Justification

(Explain why the boundaries were selected on a continuation sheet.)

11. Form Prepared By

name/title Rachel Silva, Preservation Outreach Coordinator
organization Arkansas Historic Preservation Program date June 10, 2008
street & number 1500 Tower Building, 323 Center Street telephone (501) 324-9788
city or town Little Rock state AR zip code 72201

Additional Documentation

Submit the following items with the completed form:

Continuation Sheets

Maps

- A USGS map (7.5 or 15 minute series) indicating the property's location
- A Sketch map for historic districts and properties having large acreage or numerous resources.

Photographs

Representative black and white photographs of the property.

Additional items

(Check with the SHPO or FPO for any additional items.)

Property Owner

(Complete this item at the request of SHPO or FPO.)

name Shirley S. Ward
street & number P.O. Box 2411 telephone (870) 722-5421
city or town Hope state AR zip code 71802

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listing. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C. 470 et seq.)

Estimated Burden Statement: Public reporting burden for this form is estimated to average 18.1 hours per response including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Chief, Administrative Services Division, National Park Service, P. O. Box 37127, Washington, DC 20013-7127; and the Office of Management and Budget, Paperwork Reductions Projects (1024-0018), Washington, DC 20303.

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Summary

Southwestern Proving Ground Building #129 is located to the north of Hempstead County Road 279 along the former course of Industrial Road. This building, constructed in 1941, was used as a smokeless powder magazine on the northeast end of the Southwestern Proving Ground from 1941-1945. The building is laid out in a simple rectangular plan, one bay wide and two bays deep. The front-gabled one-story building has a low pitched roof with two metal vents situated along the ridge. The red brick and beige tile walls lack fenestration on the building's northeast and southwest (side) elevations, but there are identical red steel double doors on the building's northwest and southeast (front and rear) elevations. The front and rear entrances feature concrete loading docks, each supported by four concrete piers.

Elaboration

Constructed in 1941, Building #129 served as a smokeless powder magazine on the Southwestern Proving Ground, a World War II-era military facility located approximately five miles northwest of Hope, the county seat of Hempstead County. The building is located in a field to the north of Hempstead County Road 279 (Hudson Road). While the Southwestern Proving Ground was in operation from 1941-1945, the northwest entrance of Building #129 faced Industrial Road, and the southeast entrance faced a spur of the Missouri Pacific Railroad. Building #129 is one of two of this type remaining on the northeast end of the Southwestern Proving Ground.

Building #129 is laid out in a simple rectangular plan, one bay wide and two bays deep. It is one story in height and has a front-gabled roof with a low pitch. There are two metal vents evenly spaced along the ridge of the roof. The roof is covered with corrugated asbestos sheets because they provided a boost in fire resistance and durability. The building's side elevations have close eaves, while the gable ends feature an open rake with eight exposed purlins. Building #129 has a lightning protection system with four lightning rods—one on each end of the ridge, and one on each metal vent. A heavy gauge copper conductor connects the four lightning rods and runs along the edge of the roof. An extension of the main conductor, known as the "downcomer," runs down the northeast corner of the building to a nearby ground rod.

The walls are made of red brick and beige ceramic tile. The square tiles are laid in regular courses with every other row offset by one-half tile. The only areas of the building clad in red brick are the corners, the door surrounds on each gable end, and a narrow vertical strip in the center of each side elevation. The alternating arrangement of tile and brick creates the appearance of quoins.

The side walls are completely void of fenestration, but the front and rear elevations each have a central set of red steel double doors. Each door is secured by three external barrel hinges with support bars partially extending across the door. The double doors open onto concrete loading docks on either end of the building. Each loading dock is supported by four square concrete piers. A narrow set of concrete steps provides access

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to each loading dock. The building rests on a continuous concrete foundation, which is raised about four feet above ground level. Four evenly spaced air vents are situated along the foundation on the building's northeast and southwest sides.

Northwest Façade/Front

The building's northwest façade (front) is one bay wide and is situated on a gable end with eight exposed purlins. This elevation is faced with beige tile, with the exception of the corners and the area immediately surrounding the doorway, which is faced in red brick. The arrangement of tile and brick creates the appearance of quoins. This elevation features a central set of red steel double doors with a cast concrete doorframe. The top of the doorframe is accented by another band of concrete and two rows of red brick. The bricks along the sides of the doorframe are arranged with the tile to create quoins. The double doors open to the outside and each is held in place by three external barrel hinges with support bars partially extending across the door. Each door features a metal handle. The double doors open onto a concrete loading dock supported by four square concrete piers. The front of the building faced Industrial Road, while the rear faced a spur of the Missouri Pacific Railroad, necessitating the construction of loading docks on these elevations. Because the loading dock is about four feet above ground level, it is accessed by a narrow set of concrete steps at the northeastern-most corner of the building.

Northeast Façade/Side

The northeast façade (side) is two bays wide and has a close eave. The wall is clad in beige tile and red brick. The thin vertical strip of red brick in the center of the façade clearly delineates the two building units. The brick and tile are arranged to create quoins. This side wall is completely void of fenestration. The building rests on a continuous cast concrete foundation, which is elevated about four feet above ground level. There are four air vents evenly spaced along the foundation on this side of the building.

Southeast Façade/Rear

The southeast façade (rear) mirrors the northwest façade (front). It is one bay wide and is situated on a gable end with eight exposed purlins. This elevation is faced with beige tile, with the exception of the corners and the area immediately surrounding the doorway, which is faced in red brick. The arrangement of tile and brick creates the appearance of quoins. This elevation features a central set of red steel double doors with a cast concrete doorframe. The top of the doorframe is accented by another band of concrete and two rows of red brick. The bricks along the sides of the doorframe are arranged with the tile to create quoins. The double doors open to the outside and each is held in place by three external barrel hinges with support bars partially extending across the door. Each door features a metal handle. The double doors open onto a concrete loading dock supported by four square concrete piers. The front of the building faced Industrial Road, while

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the rear faced a spur of the Missouri Pacific Railroad, necessitating the construction of loading docks on these elevations. Because the loading dock is about four feet above ground level, it is accessed by a narrow set of concrete steps at the southwestern-most corner of the building.

Southwest Façade/Side

The southwest façade (side) of the building is identical to the northeast façade (side). It is also two bays wide and has a close eave. The wall is clad in beige tile and red brick. The thin vertical strip of red brick in the center of the façade clearly delineates the two building units. The brick and tile are arranged to create quoins. This side wall is completely void of fenestration. The building rests on a continuous cast concrete foundation, which is elevated about four feet above ground level. There are four air vents evenly spaced along the foundation on this side of the building.

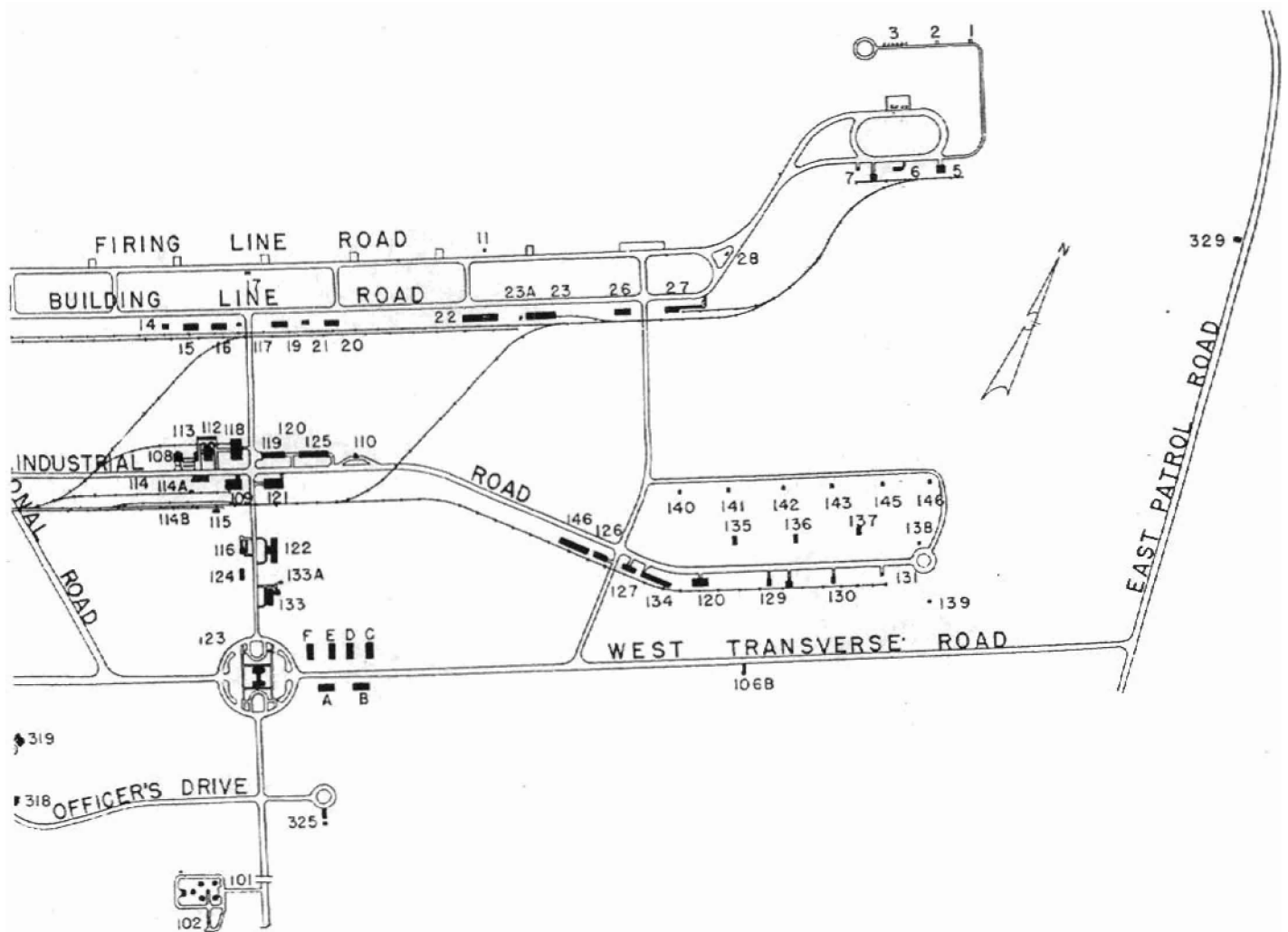
Integrity

Southwestern Proving Ground Building #129 retains excellent integrity of location, design, materials, and workmanship. The building still stands on its original location on the eastern side of the old Southwestern Proving Ground. The exterior of the building has not been altered; and although a few tiles are missing on the walls, the building is in good condition. The building is located in a rural area similar to its surroundings in the 1940s. Despite the fact that the Southwestern Proving Ground is no longer in operation, this building's utilitarian design gives observers the feeling of its historic use. Many of the buildings on the Southwestern Proving Ground have been destroyed over the years, but there are still a few nearby. In addition, the Southwestern Proving Ground Officers' Quarters Historic District, which consists of twenty homes built in 1941 as officers' quarters, and the Southwestern Proving Ground Airport Historic District, which consists of several airplane hangars, are nearby. Although Industrial Road is no longer open, it is clearly visible from aerial maps of the area.

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Historic site plan of the eastern portion of the Southwestern Proving Ground showing Building #129 in the center between Industrial Road and the Missouri Pacific Railroad spur.

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Summary

Southwestern Proving Ground Building #129, which was constructed in 1941 to store smokeless gunpowder, is important for its association with World War II-era military activity in southwestern Arkansas. The Southwestern Proving Ground was an important World War II military facility used as an airfield for bombers and a testing ground for artillery shells and air bombs. (The Southwestern Proving Ground Airport Historic District was NR-listed on June 10, 1999, and the Southwestern Proving Ground Officers' Quarters Historic District is pending NR-listing.) Because Building #129 was constructed to serve as a smokeless powder magazine, it features a unique design and atypical construction materials. The building is designed with a strong foundation and wall structure so that an explosion would cause the roof to pop off without scattering debris from the walls. The majority of the buildings on the Southwestern Proving Ground were of wood frame construction, while Building #129 was constructed with concrete, brick, and tile. Building #129 is one of two of this type remaining from the Southwestern Proving Ground and is being nominated to the National Register of Historic Places with **local significance** under **Criterion A** for its association with World War II-era military activity in Hempstead County and **Criterion C** for its unique design, which guarded against an outward explosion. Southwestern Proving Ground Building #129 is also being nominated to the National Register of Historic Places under the multiple property context "We've Gotta Get Tough: The History of World War II Homefront Efforts in Arkansas, 1941-1946."

Elaboration

European settlement in what became Hempstead County began in the early 1810s with the arrival of John Campbell from Tennessee, Benjamin Clark from Kentucky, and William Yates and his son, George, from Missouri, in 1812. The number of settlers in the area continued to grow during the 1810s, and Hempstead County was officially organized in 1819 under the provisions of an act of the Missouri Territory legislature approved on December 15, 1818. The county was named after Edward Hempstead, the first Congressional delegate from the Missouri Territory. Originally, it encompassed the land southwest of the Little Missouri River extending south to the Louisiana state line and west to Indian Territory.¹

Initially, Hempstead County's county seat was located in Washington, but once the Cairo & Fulton Railroad's line was constructed through the county, the center of the county's commerce and business moved to the rail corridor. The community grew out of a workmen's camp for the railroad and was named Hope after the daughter of James Loughborough, the railroad's land commissioner. The first passenger train came

¹ *Biographical and Historical Memoirs of Southern Arkansas*. Chicago: The Goodspeed Publishing Company, 1890, p. 379; Wilcox, Ralph. "Southwestern Proving Ground Officers' Quarters Historic District, Oakhaven, Hempstead County, Arkansas." National Register of Historic Places Registration Form. From the files of the Arkansas Historic Preservation Program, 2007, pp. 9-12

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to the community on February 1, 1872, and the railroad drew the town's plat and began selling lots on August 28, 1873. Hope was officially incorporated on April 8, 1875, and by 1880 Hope's population was 1,233. Throughout the first part of the twentieth century, the community kept growing, reaching a population of 6,008 by 1930. Eventually, after several controversial elections, in 1939 the Arkansas Supreme Court declared Hope Hempstead County's new county seat.²

The onset of World War II brought big changes to the Hope area, especially when the June 7, 1941, edition of the *Hope Star* announced on the front page that "Hope Obtains Big War Plant." The magnitude of what it meant for Hope was apparent in the telegram that Senator George Lloyd Spencer sent the *Star* from St. Louis on June 5, 1941, which said:

I have communicated with the War Department several times yesterday and today. They now authorize me to announce that a site north of Hope has definitely been selected for the proving ground.

The area will be five miles wide and 15 miles long and will cover approximately 37,000 acres.

The contract will be let as quickly as possible with the hope that work may be started by July 15.

The project will represent an expenditure of approximately 15 million dollars and construction will employ 4,000 or 5,000 persons. It will permanently employ 500 or more.

I am gratified that Arkansas has received this additional plant and am particularly pleased that my home county was selected. Governor [Homer] Adkins should be given full credit for his help in this matter.³

The Southwestern Proving Ground and its sister facility, the Jefferson Proving Ground in Indiana, were important components of America's World War II efforts on the homefront. As tensions escalated in Europe in the late 1930s, it became more and more apparent that the United States would likely enter the conflict.

² Turner, Mary Nell. Information on Hope, Arkansas, found at: <http://encyclopediaofarkansas.net/encyclopedia/entry-detail.aspx?search=1&entryID=895>; Wilcox, Ralph. "Southwestern Proving Ground Officers' Quarters Historic District, Oakhaven, Hempstead County, Arkansas." National Register of Historic Places Registration Form. From the files of the Arkansas Historic Preservation Program, 2007, pp. 9-12..

³ Turner, Mary Nell. "Southwestern Proving Ground 1941-1945." *Journal of the Hempstead County Historical Society*. Volume X, Spring 1986, p. 3. Wilcox, Ralph. "Southwestern Proving Ground Officers' Quarters Historic District, Oakhaven, Hempstead County, Arkansas." National Register of Historic Places Registration Form. From the files of the Arkansas Historic Preservation Program, 2007, pp. 9-12. The Southwestern Proving Ground supplemented the Jefferson Proving Ground located about 5 miles north of Madison, Indiana.

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During the escalation of tensions, even though the United States was not actually at war, it was still involved in the war effort by providing war materials to its Allies. In preparation for such an event the U.S. Government instituted the National Defense Program, which provided factories for the manufacture of munitions, airplanes, and tanks. The National Defense Program is what directly led to the construction of the Southwestern Proving Ground in Hope, as it was used to test those products for the war effort.⁴

After the news of the construction of the proving ground was released in June 1941, a map of the proposed facility was published showing that it would cover 37,650 acres of land encompassing private landholdings of 244 individuals and firms and 937 acres of state-held property. The reservation was bounded on the south by a line four and a half miles north of Hope, which ran about three and a half miles east and west. The area widened at its northern extension by about 15 miles, brushing the towns of Washington and Ozan. The northern boundary line from east to west was about five and a half miles wide, leaving Belton a half mile north of the northern boundary line, McCaskill one and a half miles east from the line and DeAnn two and a half miles east of the line. (After the initial evacuation order, the War Department decided that there was not a proper site for an airport so they surveyed 4,000 more acres southwest of the reservation. After the addition of the airport complex, several more acres were seized bringing the total to 50,780.27 acres.)⁵

The land needed for the development of the Southwestern Proving Ground would be acquired by the Real Estate Department of the War Department through condemnation proceedings for those sections that were needed to do immediate work. Each person's land was appraised, and then negotiations were undertaken with the land owner to determine the amount of compensation that they would receive for the land, any improvements, and for the crops that were growing. Evacuation of the residents began in July 1941, and a total of 404 families were eventually relocated by the July 24 deadline.⁶

The tight time schedule did cause a few problems. Because there was not enough time to build temporary housing, the National Guard had to provide 45 tents and running water on 20 acres of land in Washington for families who could not find another place to live. In August 1941 there were half a dozen families living in the 1874 courthouse in Washington.⁷

However, relocating families was not the government's only problem. There were seven cemeteries in the area that the government had to relocate. Licensed undertakers bid on the job of removing and reintering the

⁴ Hope, Holly. "Southwestern Proving Ground Airport Historic District, Hope, Hempstead County, Arkansas." National Register of Historic Places Registration Form. From the files of the Arkansas Historic Preservation Program, 1998, pp. 8-9; Wilcox, Ralph. "Southwestern Proving Ground Officers' Quarters Historic District, Oakhaven, Hempstead County, Arkansas." National Register of Historic Places Registration Form. From the files of the Arkansas Historic Preservation Program, 2007, pp. 9-12.

⁵ Hope, p. 9; Wilcox, p. 9-12.

⁶ *Ibid.*

⁷ *Ibid.*

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bodies at new cemetery sites approved by the Constructing Quartermaster and the State Board of Health. The original tombstones were required to be reinstalled in concrete as they were on the old grave, on a site that was to be equal or better than the former, and graves would be placed in their original alignment. All of the relocations had to be completed by June 1, 1942, since firing in the area was supposed to begin at that time.⁸

The development of the Southwestern Proving Ground was initially greeted with tremendous enthusiasm by the local community due to the economic stimulus that it would bring to the area. However, criticism did arise from the area's residents, especially during the confusion associated with relocation. In addition, it was also rumored that Senator Spencer had encouraged government officials to include his farm in the area claimed for the proving ground. The editor of the *Hope Star* at the time, Alex Washburn, understood the need for the facility in terms of United States defense, but also understood the plight of the people who were displaced by the construction. He wrote, "... anybody can see things about the Proving Ground to break your heart - but it is admittedly the biggest thing in South Arkansas since the El Dorado oil boom in 1921 ..."⁹

The construction of the proving ground was awarded to the W. E. Callahan Construction Company, which began hiring 4,000 construction workers on July 15, 1941. The architects and engineers for the project were Howard, Needles, Tammen & Bergendorff of Indianapolis, and among their employees were Herb Blemker, chief engineer in building the Jefferson Proving Ground, and one of his assistants, Harry Fritchie. The project director was W. K. Mellyor, and he worked out an agreement with Senator Spencer to guarantee preferential treatment of local citizens in consideration for jobs.¹⁰

Testing began in January 1941. Troops explored the capabilities of LeBolenge chronographs and solenoid chronographs for accuracy and reliability. 105 mm shells that had fired prematurely in battle were determined by research at the Southwestern Proving Ground to have faulty rotating bands, thus saving the lives of American troops. B-25s were sent from the airport in Hope to the Gulf of Mexico with truckloads of bombs to observe them for tumbling and proper ballistics after being fired. Top secret tests were carried out on proximity fuses with radio transmitters and receivers that can withstand the acceleration of being fired from a gun. The proof division tested ammunition from 20 mm cannon to 155 mm long tom.¹¹

⁸ *Ibid.*

⁹ *Ibid.*

¹⁰ Hope, p. 10, and Turner, Mary Nell. "Southwestern Proving Ground 1941-1945." *Journal of the Hempstead County Historical Society*. Volume X, Spring 1986, p. 10; Wilcox, Ralph. "Southwestern Proving Ground Officers' Quarters Historic District, Oakhaven, Hempstead County, Arkansas." National Register of Historic Places Registration Form. From the files of the Arkansas Historic Preservation Program, 2007, pp. 9-12. .

¹¹ Hope, p. 10.

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When testing gunpowder at the Southwestern Proving Ground, "the 155 mm tom was used—you ran a shell up into the chamber of the gun and then loaded in bags of powder and then a detonator, then closed the breech and shot. The same thing was true in the case of the 105 Howitzer. We used standard weight projectiles, then measured powder by bags, measured velocity of projectiles and that tested the uniformity of the powder."¹²

The number and variety of buildings necessary to operate the facility was mind-boggling. Hundreds of buildings ranging from powder magazines and turret houses to shop buildings and a hospital were constructed to carry out the various missions and operations at the installation. In addition, residential buildings were needed, which included at least one barracks building and officers' quarters.¹³

Due to the December 7, 1941, bombing of Pearl Harbor, the opening festivities at the Proving Ground were delayed, and it was not until April 5, 1942, that Hempstead County residents were able to pass through the gates. In a two-hour period, 1,250 cars carrying 6,250 people passed through the gates, although nobody was allowed to leave their cars. Washburn wrote in the *Hope Star* that "Sunday's visitors who, celebrating Army Day, were permitted to go through the completed SPG saw there a graphic example of American efficiency and speed - for what was rolling prairie and timberland only last August is today a functioning war plant. ...But the record will show that the SPG location here was announced May 1941; executive officers began arriving in July; workers were hired in August and the first gun fired January 1, 1942. ...Like our Anglo brothers over in England, we Americans languish slow in the arms of peace - rise slowly to the act of war. But brother when we get going!"¹⁴

Building #129 was constructed during 1941 as the Southwestern Proving Ground was taking shape. The northwest façade (front) faced Industrial Road, while the southeast façade (rear) faced a spur of the Missouri Pacific Railroad. This storage building was strategically located between two transportation routes in order to make it easier to move supplies needed for assembling ammunition and bombs. A row of buildings were constructed adjacent to Building #129 between Industrial Road and the railroad spur. These buildings served as storage facilities for different ammunition components—Buildings #129 and 130 were smokeless powder

¹² Turner, Mary Nell. "Southwestern Proving Ground 1941-1945." *Journal of the Hempstead County Historical Society*. Volume X, Spring 1986, pp. 21.

¹³ Turner, Mary Nell. "Southwestern Proving Ground 1941-1945." *Journal of the Hempstead County Historical Society*. Volume X, Spring 1986, pp. 16-17; Wilcox, Ralph. "Southwestern Proving Ground Officers' Quarters Historic District, Oakhaven, Hempstead County, Arkansas." National Register of Historic Places Registration Form. From the files of the Arkansas Historic Preservation Program, 2007, pp. 9-12.

¹⁴ Turner, Mary Nell. "Southwestern Proving Ground 1941-1945." *Journal of the Hempstead County Historical Society*. Volume X, Spring 1986, p. 14; Wilcox, Ralph. "Southwestern Proving Ground Officers' Quarters Historic District, Oakhaven, Hempstead County, Arkansas." National Register of Historic Places Registration Form. From the files of the Arkansas Historic Preservation Program, 2007, pp. 9-12.

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magazines, Buildings #131 and 139 were black powder magazines, Buildings #146 and 134 were inert storage facilities, and Buildings #126 and 127 were ammunition storage facilities.¹⁵

Guncotton, a precursor to smokeless gunpowder, was a nitrocellulose-based material introduced by Christian Friedrich Schonbein in 1846. It was more powerful than gunpowder, but it was also more unstable, making it unsafe for use in small firearms. After several explosions occurred in guncotton factories, the sensitive material went out of use until it could be controlled in the early 1880s. Smokeless gunpowder was invented in the late nineteenth century by Paul Vieille when he mixed gelatinized guncotton with ether and alcohol. The new substance, called Poudre B, produced little smoke and was three times stronger than black powder. Smokeless powder produces little smoke because its combustion products are mainly gaseous, whereas the combustion products of black powder are about 55% solid, chiefly consisting of potassium carbonate and potassium sulfate.¹⁶

Smokeless gunpowder had several advantages over black gunpowder. Smokeless gunpowder did not obscure the shooter's view after firing a gun, allowing him or her to clearly see the target after several shots. Because it did not produce a cloud of smoke, smokeless powder did not give away the location of troops and hidden shooters. Since smokeless powder was three times more powerful than black powder, less powder was needed to propel a bullet, allowing cartridges to be smaller and lighter. This allowed troops to carry more ammunition for the same weight. The higher muzzle velocity obtained from smokeless powder meant a flatter trajectory, increasing the accuracy of long range fire. Finally, smokeless powder burned even when wet, whereas black powder had to be kept dry inside watertight cartridges.¹⁷

Smokeless powder allowed the development of modern semi- and fully automatic firearms. Black powder burns essentially at the same rate out in the open (unconfined) as it does inside a gun. Black powder leaves a thick, heavy residue when it burns. This residue is corrosive, making an autoloading firearm jam or seize under heavy black powder firing. Smokeless powder, when burned under pressure as in a cartridge fired in a gun, produces very little smoke, a small glow, and very little or no residue. This is because the burning rate of smokeless powder increases with increased pressure. When burning smokeless powder is confined, gas pressure will rise and eventually cause the container to explode. Therefore, very energetic materials (like smokeless powder) are usually stored in buildings that are designed, in the event of an explosion, to direct the force of that explosion upward. This result would be achieved by constructing a building with fortified walls and a "removable" roof. If the smokeless powder was ignited in such a storage building, it would release

¹⁵ Turner, Mary Nell. "Southwestern Proving Ground 1941-1945." *Journal of the Hempstead County Historical Society*. Volume X, Spring 1986, p. 17.

¹⁶ "Smokeless Gunpowder." *Outdoor Life* 212, no. 8 (September 2005): 25; "Smokeless Powder." Internet. Accessed 30 May 2008. Available from http://en.wikipedia.org/wiki/Smokeless_powder.

¹⁷ "Smokeless Gunpowder." *Outdoor Life* 212, no. 8 (September 2005): 25; "Smokeless Powder." Internet. Accessed 30 May 2008. Available from http://en.wikipedia.org/wiki/Smokeless_powder.

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gaseous combustion products, ultimately causing the roof to pop off. This building design would prevent an outward explosion with the potential to destroy nearby structures.¹⁸

Only 42 of the 108 buildings on the Southwestern Proving Ground were made of masonry, concrete, or brick. The remaining buildings were constructed with "bull" pine, prompting N. P. O'Neal, the owner of the Hope Brick Company, to question the permanency of the Southwestern Proving Ground. Obviously, part of his concern for the permanency of the facility had to do with his company's failure to receive a contract to provide the brick for the buildings.¹⁹

Building #129 was made out of brick, concrete, and tile because it was designed to store smokeless gunpowder. It is extremely important to construct gunpowder storage buildings out of fire-resistant and heat-insulating materials to protect the contents from external heat because once smokeless powder begins to burn, it usually continues to burn until it is consumed. The two air vents on the building's roof were installed to allow gaseous combustion products to escape if smokeless powder accidentally ignited, preventing a quick explosion. Furthermore, Building #129 featured a lightning protection system with four lightning rods along its ridge, heavy gauge copper wire around the roof's edge, and a nearby grounding rod. Lightning strikes were a legitimate concern for workers on the Southwestern Proving Ground. While recounting his days as a member of the night firing artillery repair team, Fred Mouser mentioned the difficulty they had with lightning ruining their photographs. "About that time there was a streak of lightning which would fall, hit the ground, and ruin the picture. They had the camera open and all lights out when they were firing, and it ruined about three of four pictures. He [Major Paul W. Klipsch] threw his hat down and stomped it. He didn't cuss any, but he called Arkansas weather every name I ever heard of and said anyone who would live in this state ought to have his head examined."²⁰

Germany surrendered on May 7, 1945, and Japan followed suit on August 14, 1945, bringing a close to the war and to operations at the Southwestern Proving Ground. By August 20, the proving ground was ordered to close within 30 days. By September, the only staff present would be a skeleton crew to write up final reports. The Army declared the proving ground surplus, but in December 1945, the sale of the facility was stopped as the City of Hope was told it would receive the Southwestern Proving Ground airport. The

¹⁸ "Smokeless Powder." Internet. Accessed 30 May 2008. Available from http://en.wikipedia.org/wiki/Smokeless_powder; Alliant Powder, "Reloading Safety: Storage and Properties of Smokeless Powders." Internet. Accessed 29 May 2008. Available from <http://www.alliantpowder.com/safety/storage.htm>.

¹⁹ Turner, Mary Nell. "Southwestern Proving Ground 1941-1945." *Journal of the Hempstead County Historical Society*. Volume X, Spring 1986, p. 11.

²⁰ Turner, Mary Nell. "Southwestern Proving Ground 1941-1945." *Journal of the Hempstead County Historical Society*. Volume X, Spring 1986, p. 19; Alliant Powder. "Reloading Safety: Considerations for Storage of Smokeless Powder." Internet. Accessed 29 May 2008. Available from <http://www.alliantpowder.com/safety/storage.htm>.

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remaining acreage would fall under the policies of the Reconstruction Finance Corporation and the Surplus Property Corporation.²¹ Currently, Building #129 is privately owned and used for storage.

Statement of Significance

Southwestern Proving Ground Building #129, which was constructed in 1941 to store smokeless gunpowder, is important for its association with World War II-era military activity in southwestern Arkansas. The Southwestern Proving Ground was an important World War II military facility used as an airfield for bombers and a testing ground for artillery shells and air bombs. (The Southwestern Proving Ground Airport Historic District was NR-listed on June 10, 1999, and the Southwestern Proving Ground Officers' Quarters Historic District is pending NR-listing.) Because Building #129 was constructed to serve as a smokeless powder magazine, it features a unique design and atypical construction materials. The building is designed with a strong foundation and wall structure so that an explosion would cause the roof to pop off without scattering debris from the walls. The majority of the buildings on the Southwestern Proving Ground were of wood frame construction, while Building #129 was constructed with concrete, brick, and tile. Building #129 is one of two of this type remaining from the Southwestern Proving Ground and is being nominated to the National Register of Historic Places with **local significance** under **Criterion A** for its association with World War II-era military activity in Hempstead County and **Criterion C** for its unique design, which guarded against an outward explosion. Southwestern Proving Ground Building #129 is also being nominated to the National Register of Historic Places under the multiple property context "We've Gotta Get Tough: The History of World War II Homefront Efforts in Arkansas, 1941-1946."

²¹ Hope, Holly. "Southwestern Proving Ground Airport Historic District, Hope, Hempstead County, Arkansas." National Register of Historic Places Registration Form. From the files of the Arkansas Historic Preservation Program, 1998, pp. 10-11.

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Verbal Boundary Description

From the intersection of Hempstead County Road 279 and the driveway for the property at 195 Hempstead County Road 279, proceed east and northeast for 975 feet along the centerline of the driveway for the property at 195 Hempstead County Road 279 and the right-of-way for the former Industrial Road to the point of beginning. From the point of beginning proceed northeasterly for 125 feet along the centerline of the former Industrial Road, thence proceed southeasterly for 165 feet perpendicular to the former Industrial Road, thence proceed southwesterly for 125 feet parallel to the former Industrial Road, thence proceed northwesterly for 165 feet perpendicular to the former Industrial Road to the point of beginning.

Boundary Justification

The boundary contains the land around Southwestern Proving Ground Building #129 that retains integrity.

