

NATIONAL REGISTER OF HISTORIC PLACES
(NATIONAL HISTORIC LANDMARKS)
INVENTORY - NOMINATION FORM

(Type all entries complete applicable sections)

STATE: Vermont
COUNTY: Windsor
FOR NPS USE ONLY
ENTRY DATE

1. NAME

COMMON:	Robbins and Lawrence Armory and Machine Shop; American Precision Museum
AND/OR HISTORIC:	Robbins and Lawrence Armory and Machine Shop; Cotton Mill Building

2. LOCATION

STREET AND NUMBER: Main Street, corner of Maple Street			
CITY OR TOWN: Windsor		CONGRESSIONAL DISTRICT: at large	
STATE: Vermont	CODE: 050	COUNTY: Windsor	CODE: 027

3. CLASSIFICATION

CATEGORY (Check One)	OWNERSHIP	STATUS	ACCESSIBLE TO THE PUBLIC
<input type="checkbox"/> District <input type="checkbox"/> Site <input type="checkbox"/> Object <input checked="" type="checkbox"/> Building <input type="checkbox"/> Structure	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private <input type="checkbox"/> Both	<input checked="" type="checkbox"/> Occupied <input type="checkbox"/> Unoccupied <input type="checkbox"/> Preservation work in progress <input type="checkbox"/> In Process <input type="checkbox"/> Being Considered	Yes: <input checked="" type="checkbox"/> Restricted <input type="checkbox"/> Unrestricted <input type="checkbox"/> No
PRESENT USE (Check One or More as Appropriate)			
<input type="checkbox"/> Agricultural <input type="checkbox"/> Commercial <input type="checkbox"/> Educational <input type="checkbox"/> Entertainment	<input type="checkbox"/> Government <input type="checkbox"/> Industrial <input type="checkbox"/> Military <input checked="" type="checkbox"/> Museum	<input type="checkbox"/> Park <input type="checkbox"/> Private Residence <input type="checkbox"/> Religious <input type="checkbox"/> Scientific	<input type="checkbox"/> Transportation <input type="checkbox"/> Other (Specify) <input type="checkbox"/> Comments

4. OWNER OF PROPERTY

OWNER'S NAME: American Precision Museum, Inc. (contact: Mr. F. E. Kingsbury, Chairman, Board of Trustees)	STATE: Vermont
STREET AND NUMBER: Main Street	
CITY OR TOWN: Windsor 05089	
STATE: Vermont	CODE: 050

5. LOCATION OF LEGAL DESCRIPTION

COURTHOUSE, REGISTRY OF DEEDS, ETC: Town Clerk's Office (Windsor Land Records)	STATE: Vermont
STREET AND NUMBER:	
CITY OR TOWN: Windsor 05089	
STATE: Vermont	CODE: 050

6. REPRESENTATION IN EXISTING SURVEYS

TITLE OF SURVEY: None
DATE OF SURVEY: <input type="checkbox"/> Federal <input type="checkbox"/> State <input type="checkbox"/> County <input type="checkbox"/> Local
DEPOSITORY FOR SURVEY RECORDS:
STREET AND NUMBER:
CITY OR TOWN:
STATE:
CODE:

SEE INSTRUCTIONS

STATE: Vermont
COUNTY: Windsor
ENTRY NUMBER
DATE
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7. DESCRIPTION

CONDITION	(Check One)					
	<input type="checkbox"/> Excellent	<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Fair	<input type="checkbox"/> Deteriorated	<input type="checkbox"/> Ruins	<input type="checkbox"/> Unexposed
	(Check One)			(Check One)		
	<input checked="" type="checkbox"/> Altered	<input type="checkbox"/> Unaltered	<input type="checkbox"/> Moved	<input checked="" type="checkbox"/> Original Site		

DESCRIBE THE PRESENT AND ORIGINAL (if known) PHYSICAL APPEARANCE

The Robbins and Lawrence Armory and Machine Shop, erected in 1846, is an attractive example of nineteenth century American industrial architecture. The building, which faces southeast, stands on the south bank of Mill Brook, at the intersection of Main and Maple Streets in Windsor, Vermont. About ten feet northwest of the Armory is the dam across the brook which was its original power source.

The three-and-a-half story Armory is a rectangular building, approximately one hundred feet long and forty-five feet wide. It is constructed of hand-made brick on a coursed rubble cellar foundation. The original wooden beams and rafters remain in place. The building has a pitched roof of slate, broken by eyebrow dormers which light the attic story, and is topped by an open hexagonal cupola of wood. At the west corner of the Armory is a square brick tower with wooden loading doors at each floor level. Windows throughout the building are twelve-over-twelve sash and capped by stone lintels; those on the northwest elevation were bricked in when another building, since removed, was constructed abutting the Armory. The building is structurally sound and generally in good condition.

Though some changes have been made in the building in the course of its history, the original lines of its main block remain essentially unaltered. The only change affecting the size of the Armory has been the addition at its southern corner of a two-story brick office wing with gabled roof, approximately thirty-five by forty feet in size.

Other alterations were made by the Central Vermont Public Services Corporation, an electrical utility, which purchased the Armory in 1926; these include the installation of garage-type doors on the northwest and southwest elevations and of partitions and plumbing to create a caretaker's apartment on the second floor.

Adjacent to the Armory are three intrusive structures--an electrical sub-station just south of the building and a switching station and another sub-station north of it--all of which are owned and operated by the Central Vermont Public Services Corporation. Power lines connecting these structures and neighboring utility poles also detract from the Armory's immediate setting.

In 1966, the Armory and approximately three-quarters of an acre of land were given by the Corporation to the newly created American Precision Museum, Inc. As funds allow, this organization is rehabilitating the building and developing it as an industrial museum. Alterations such as the garage doors and the second floor apartment will be removed; the office wing, historically associated with the Armory, will be retained for museum offices and exhibit space. The Museum also hopes to improve the setting of the Armory and has opened negotiations with the Public Services Corporation for acquisition of additional property and the removal of the intrusive structures noted above.

(Continued)

SEE INSTRUCTIONS

SEE INSTRUCTIONS

3. SIGNIFICANCE

PERIOD (Check One or More as Appropriate)

- | | | | |
|--|---------------------------------------|--|---------------------------------------|
| <input type="checkbox"/> Pre-Columbian | <input type="checkbox"/> 16th Century | <input type="checkbox"/> 18th Century | <input type="checkbox"/> 20th Century |
| <input type="checkbox"/> 15th Century | <input type="checkbox"/> 17th Century | <input checked="" type="checkbox"/> 19th Century | |

SPECIFIC DATE(S) (If Applicable and Known) **1846**

AREAS OF SIGNIFICANCE (Check One or More as Appropriate)

- | | | | |
|--|---|--|--|
| <input type="checkbox"/> Aboriginal | <input type="checkbox"/> Education | <input type="checkbox"/> Political | <input type="checkbox"/> Urban Planning |
| <input type="checkbox"/> Prehistoric | <input type="checkbox"/> Engineering | <input type="checkbox"/> Religion/Philosophy | <input type="checkbox"/> Other (Specify) |
| <input type="checkbox"/> Historic | <input checked="" type="checkbox"/> Industry | <input type="checkbox"/> Science | _____ |
| <input type="checkbox"/> Agriculture | <input type="checkbox"/> Invention | <input type="checkbox"/> Sculpture | _____ |
| <input type="checkbox"/> Architecture | <input type="checkbox"/> Landscape Architecture | <input type="checkbox"/> Social/Humanitarian | _____ |
| <input type="checkbox"/> Art | <input type="checkbox"/> Literature | <input type="checkbox"/> Theater | _____ |
| <input checked="" type="checkbox"/> Commerce | <input type="checkbox"/> Military | <input type="checkbox"/> Transportation | _____ |
| <input type="checkbox"/> Communications | <input type="checkbox"/> Music | | _____ |
| <input type="checkbox"/> Conservation | | | _____ |

STATEMENT OF SIGNIFICANCE

During the 1840's and 1850's, the Robbins and Lawrence Company of Windsor, Vermont, designed and manufactured machine tools that accelerated the industrial revolution in America by improving the production of interchangeable parts and thus stimulating mass production. Many of those tools, or their basic designs, are used today.

The company's rise to prominence resulted primarily from the efforts of Richard S. Lawrence, Frederick Webster Howe, and Henry D. Stone. Joining the firm at different times, the three inventive men, either individually or jointly, contributed the profiling machine, a milling machine, and a universal milling machine, plus additional machine tools, while working for Robbins and Lawrence. After the failure of the firm in the early 1850's, the three contributed to the development of machine tools in various ways.

The three-and-a-half story brick Armory and Machine Shop which stands on Mill Brook in Windsor is all that remains of the once flourishing Robbins and Lawrence factory complex. Built in 1846, the structure has been little changed in the intervening years. The American Precision Museum, Inc. now owns the Armory and is developing it as an industrial museum illustrating the history of machine tools and the products which their development made possible.

The American Precision Museum is open to the public from noon to 5:00 p.m. daily, May 31 through October 13; an admission fee is charged.

Historical Background

Industry came early to Windsor, Vermont. The community was founded in August, 1764, and by 1769 had a gristmill and a sawmill, both located on Mill Brook. Some seventy years after the town's establishment, a number of custom gun shops existed in and around Windsor. One of these, N. Kendall and Company, produced guns at the town prison, using prison labor for all but the finest work.

(Continued)

9. MAJOR BIBLIOGRAPHICAL REFERENCES

Hubbard, Guy. "Development of Machine Tools in New England," American Machinist, 59 (July 5 and December 20, 1923) and 60 (January 24, 1924).
 Roe, Joseph W. "Early American Mechanics - Robbins and Lawrence Shop," American Machinist, 41 (October, 1914)
 Singer, Charles, et. al. A History of Technology (Oxford, 1958), Vol. IV.

10. GEOGRAPHICAL DATA

LATITUDE AND LONGITUDE COORDINATES DEFINING A RECTANGLE LOCATING THE PROPERTY			O R	LATITUDE AND LONGITUDE COORDINATES DEFINING THE CENTER POINT OF A PROPERTY OF LESS THAN TEN ACRES		
CORNER	LATITUDE	LONGITUDE		LATITUDE	LONGITUDE	
	Degrees Minutes Seconds	Degrees Minutes Seconds		Degrees Minutes Seconds	Degrees Minutes Seconds	
NW	0 ' "	0 ' "		0 ' "	0 ' "	
NE	0 ' "	0 ' "		0 ' "	0 ' "	
SE	0 ' "	0 ' "		0 ' "	0 ' "	
SW	0 ' "	0 ' "		0 ' "	0 ' "	

APPROXIMATE ACREAGE OF NOMINATED PROPERTY: 1.75

LIST ALL STATES AND COUNTIES FOR PROPERTIES OVERLAPPING STATE OR COUNTY BOUNDARIES

STATE:	CODE	COUNTY	CODE
STATE:	CODE	COUNTY:	CODE
STATE:	CODE	COUNTY:	CODE
STATE:	CODE	COUNTY:	CODE

11. FORM PREPARED BY

NAME AND TITLE: Polly M. Rettig, Historian, Landmark Review Project; original form prepared by Horace J. Sheely and S. S. Bradford, Historians, 5/18/66

ORGANIZATION: Historic Sites Survey, National Park Service DATE: 12/2/74

STREET AND NUMBER: 1100 L Street NW.

CITY OR TOWN: Washington STATE: D.C. CODE: 011

12. STATE LIAISON OFFICER CERTIFICATION NATIONAL REGISTER VERIFICATION

As the designated State Liaison Officer for the National Historic Preservation Act of 1966 (Public Law 89-665), I hereby nominate this property for inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures set forth by the National Park Service. The recommended level of significance of this nomination is:

National State Local

Name N/A

Title _____

(NATIONAL HISTORIC LANDMARKS)

Date _____

I hereby certify that this property is included in the National Register.

(NATIONAL HISTORIC LANDMARKS)

Landmark Nov 13 1966

Director, Office of Archeology and Designated Preservation _____ date _____

(NATIONAL HISTORIC LANDMARKS)

Boundary Certified: December 7-2-75

Date _____

ATTEST: Chief, Hist. & Arch. Surveys _____ date _____

Boundary Affirmed: 7/3/75

Keeper of The National Register _____

Date _____ Director, OAHIP _____ date _____

SEE INSTRUCTIONS

NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY - NOMINATION FORM

(NATIONAL HISTORIC
LANDMARKS)

(Continuation Sheet)

STATE	Vermont	
COUNTY	Windsor	
FOR NPS USE ONLY		
ENTRY NUMBER		DATE

(Number all entries)

7. Description: (1)

Robbins & Lawrence Armory and
Machine Shop; American Precision
Museum

Boundary

In addition to the property owned by the American Precision Museum, Inc., this designation also covers property owned by the Central Vermont Public Services Corporation but historically associated with the Robbins and Lawrence Company and its successor firms; this property is included to provide additional protection for the Armory and its setting. Located within the boundaries but specifically excluded from the landmark designation are the intrusive structures--the substations and switching stations--discussed above. The National Historic Landmark boundaries are defined as follows: beginning at the northeast corner of Main and Maple Streets, thence along the northeast sideline of Maple Street in sections of 25.1 feet, 153.8 feet, 89.1 feet, 55.2 feet, and 175 feet, more or less, to a point, thence turning at an angle of 112.5 degrees thence along a line 20 feet north of the north bank of Mill Brook to the north sideline of Main Street, thence along the north sideline of Main Street to the point of beginning.

*above statement revised per National
Register comments - see attached.
Gally M. Pettig 5/28/75*

Revision

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

FOR NPS USE ONLY

RECEIVED

DATE ENTERED

**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**

CONTINUATION SHEET

ITEM NUMBER 7

PAGE 2

7. Description

Robbins and Lawrence Armory and
Machine Shop; American Precision
Museum

Boundary

The boundaries of the National Historic Landmark designation for the Robbins and Lawrence Armory and Machine Shop include both the building and its immediate site, owned by the American Precision Museum, Inc., and additional property, now owned by the Central Vermont Public Services Corporation, which is historically associated with the Robbins and Lawrence Company and its successor firms. The latter property is the location of intrusive structures--the substations and switching station discussed above--which do not contribute to the national significance of the Landmark building.

The Landmark boundaries are described as follows: beginning at the north-east corner of Main and Maple Streets; thence along the northeast sideline of Maple Street in sections of 25.1 feet, 153.8 feet, 89.1 feet, 55.2 feet, and 175 feet, more or less, to a point; thence turning at an angle of 112.5 degrees and running in a line to a point 20 feet beyond the north bank of Mill Brook; thence along a line 20 feet north of the north bank of Mill Brook to the northeastern sideline of Main Street; thence along the northeastern sideline of Main Street to the point of beginning.

NATIONAL REGISTER OF HISTORIC PLACES

(NATIONAL HISTORIC LANDMARKS) INVENTORY - NOMINATION FORM

(Continuation Sheet)

STATE Vermont	
COUNTY Windsor	
FOR NPS USE ONLY	
ENTRY NUMBER	DATE

(Number all entries)

8. Statement of Significance: (1)

Robbins and Lawrence Armory and Machine Shop; American Precision Museum

Richard S. Lawrence, who was to help transform Kendall and Company into a major producer of machine tools, became an employee of the firm in 1838. Born in 1817, he had experienced a varied career by the time he arrived in Windsor. Shortly after his appearance there, his repair of a doctor's rifle so impressed its owner that he took Lawrence to Kendall and Company, who recognized in him a skillful and ingenious craftsman and hired him immediately.

Kendall and Company abandoned gun making in 1842, but the following year Lawrence and Kendall opened a small gun shop in Windsor. This business prospered and, in the winter of 1844, undertook a Herculean task. At that time, S. E. Robbins, a business man, joined the concern--which became Robbins, Kendall and Lawrence--and stimulated it to bid for a Federal Government order for 10,000 rifles. The new company's bid of \$10.90 per rifle was ten cents lower than any other, and a contract was signed on February 18, 1845, to be completed within three years.

The firm then had neither the men, the machines, nor the buildings required to meet this order, but Lawrence and his colleagues moved rapidly to overcome these obstacles. With only twenty-five workers in their plant, they began to recruit skilled laborers and subsequently formed a highly competent factory crew of some one hundred and fifty men. In April, 1846, laborers began the construction of a three-and-a-half story brick armory on the south side of Mill Brook, just across from the firm's original gun shop. Most important, Lawrence pushed the development of new machine tools to be installed in the factory.

Despite the long odds, the company fulfilled its contract--eighteen months ahead of the deadline--and made an excellent profit. Shortly thereafter, Kendall's partners purchased his interest in the firm, which then became the Robbins and Lawrence Company.

The firm now entered its most notable period. Three men supplied the genius that established the company as an innovator and developer in the field of machine tools. Lawrence, who had been with the firm for several years, continued to contribute mechanical inventiveness and business acumen. In 1847, Frederick Webster Howe joined the firm as Lawrence's assistant and the next year became the plant superintendent. A superlative machinist and an original thinker, Howe invented several machines that were used in industry for years after their development. He produced a profiling machine in 1848 that became widely used in gun factories. In 1849, Howe, in conjunction with Lawrence, developed a milling machine that remains basic to industry, and in 1850 made the first commercially successful universal milling machine. The final member of the Robbins and Lawrence triumverate was Henry D. Stone. In the 1850's he collaborated with Lawrence and Howe in devising improved machine tools, plus developing some on his own.

(Continued)

NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY - NOMINATION FORM

(NATIONAL HISTORIC
LANDMARKS)

(Continuation Sheet)

STATE	
Vermont	
COUNTY	
Windsor	
FOR NPS USE ONLY	
ENTRY NUMBER	DATE

(Number all entries)

8. Statement of Significance: (2) Robbins and Lawrence Armory and Machine Shop; American Precision Museum

The brilliance of the work at Robbins and Lawrence achieved international fame in 1851. Taking advantage of an opportunity to participate in the Crystal Palace Exhibition in London that year, the Windsor concern exhibited six of the United States Army rifles that it had made. The firearms intrigued the Exhibition's visitors because of their interchangeability of parts, made possible by the machines developed by Robbins and Lawrence. A medal awarded by the Exhibition formally notified the world of the British opinion of the firm's rifles. Practically, the success of Robbins and Lawrence led to a contract with the British Government in 1854 for one hundred and fifty machine tools for a new state armory.

Despite its growing reputation, however, the firm was over-extended financially and soon failed. It had erected a new plant in Hartford, Connecticut, in 1853 to expand its output. One contract was completed in the new factory and another order for 325,000 rifles was expected. When 25,000 rifles had been produced, it was discovered that there would be no order for the remaining 300,000. Robbins and Lawrence had invested too heavily in expanding its works and the incurred debts, plus old obligations, pushed the concern into bankruptcy.

Following this failure, the Robbins and Lawrence Armory at Windsor was occupied by a succession of new manufacturing firms. During the Civil War, 50,000 rifles were made there for the Union armies. After the War and until 1888, the building was used as a cotton mill. It was owned by an electrical utility, the Central Vermont Public Services Corporation, from 1926 until 1966, when it was turned over to the American Precision Museum, Inc. This organization is now developing the Armory as an industrial museum illustrating the history of machine tools and their products. In addition, the Museum actively collects drawings, photographs, correspondence, catalogues, periodicals, and biographical materials for its reference files, many of which are housed at the Armory.