

PH 0503185

DATA SHEET

UNITED STATES DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES  
INVENTORY -- NOMINATION FORM**  
FOR FEDERAL PROPERTIES

FOR NPS USE ONLY  
RECEIVED AUG 29 1977  
DATE ENTERED JAN 30 1978

SEE INSTRUCTIONS IN HOW TO COMPLETE NATIONAL REGISTER FORMS  
TYPE ALL ENTRIES -- COMPLETE APPLICABLE SECTIONS

**1 NAME**

HISTORIC (Engine (Locomotive) No. 6, of the Hetch Hetchy Railroad) later of the  
Pickering Lumber Company Railroad  
AND/OR COMMON  
Shay No. 6

**2 LOCATION**

STREET & NUMBER CA 140  
Not applicable  
CITY, TOWN El Portal VICINITY OF Fifteenth  
STATE California CODE 06 COUNTY Mariposa CODE 043

**2 CLASSIFICATION**

CATEGORY	OWNERSHIP	STATUS	PRESENT USE
<input checked="" type="checkbox"/> DISTRICT	<input checked="" type="checkbox"/> PUBLIC	<input type="checkbox"/> OCCUPIED	<input type="checkbox"/> AGRICULTURE <input checked="" type="checkbox"/> MUSEUM
<input type="checkbox"/> BUILDING(S)	<input type="checkbox"/> PRIVATE	<input checked="" type="checkbox"/> UNOCCUPIED	<input type="checkbox"/> COMMERCIAL <input type="checkbox"/> PARK
<input type="checkbox"/> STRUCTURE	<input type="checkbox"/> BOTH	<input type="checkbox"/> WORK IN PROGRESS	<input type="checkbox"/> EDUCATIONAL <input type="checkbox"/> PRIVATE RESIDENCE
<input type="checkbox"/> SITE	<b>PUBLIC ACQUISITION</b>	<b>ACCESSIBLE</b>	<input type="checkbox"/> ENTERTAINMENT <input type="checkbox"/> RELIGIOUS
<input checked="" type="checkbox"/> OBJECT	<input type="checkbox"/> IN PROCESS	<input checked="" type="checkbox"/> YES: RESTRICTED	<input type="checkbox"/> GOVERNMENT <input type="checkbox"/> SCIENTIFIC
	<input type="checkbox"/> BEING CONSIDERED	<input type="checkbox"/> YES: UNRESTRICTED	<input type="checkbox"/> INDUSTRIAL <input type="checkbox"/> TRANSPORTATION
		<input type="checkbox"/> NO	<input type="checkbox"/> MILITARY <input type="checkbox"/> OTHER:

**4 AGENCY**

REGIONAL HEADQUARTERS: (If applicable)  
National Park Service - Western Regional Office  
STREET & NUMBER  
450 Golden Gate Avenue - Box 36063  
CITY, TOWN San Francisco VICINITY OF STATE California

**5 LOCATION OF LEGAL DESCRIPTION**

COURTHOUSE, REGISTRY OF DEEDS, ETC. Administration Building (Park Headquarters)  
STREET & NUMBER  
450 Golden Gate Avenue - Box 36063  
CITY, TOWN San Francisco STATE California

**6 REPRESENTATION IN EXISTING SURVEYS**

TITLE  
None  
DATE  
\_FEDERAL \_STATE \_COUNTY \_LOCAL

DEPOSITORY FOR SURVEY RECORDS  
CITY, TOWN STATE

## 7 DESCRIPTION

CONDITION		CHECK ONE	CHECK ONE
<input type="checkbox"/> EXCELLENT	<input type="checkbox"/> DETERIORATED	<input checked="" type="checkbox"/> UNALTERED	<input type="checkbox"/> ORIGINAL SITE
<input checked="" type="checkbox"/> GOOD	<input type="checkbox"/> RUINS	<input type="checkbox"/> ALTERED	<input checked="" type="checkbox"/> MOVED DATE <u>1960</u>
<input type="checkbox"/> FAIR	<input type="checkbox"/> UNEXPOSED		

### DESCRIBE THE PRESENT AND ORIGINAL (IF KNOWN) PHYSICAL APPEARANCE

This locomotive is technically a three truck (3T) Shay locomotive, built by the Lima Locomotive Works in 1921 and given builder's number 3170. Based on a 19th Century invention of Ephriam Shay, this engine was designed to negotiate steeper grades and sharper curves than is possible with a conventional or "rod" design of steam railroad locomotive. Power is transferred to the wheels from three vertical steam pistons rather than two horizontal steam pistons, and by means of a crank shaft beneath the pistons connected with a drive shaft running the length of the right side of the locomotive and connected to each of its axles by a bevel gear on the right side wheel on each axle. The engine has three "trucks" consisting of a framework with two axles and four wheels each, one truck under the smokebox at the front end, one truck beneath the tank immediately behind the cab, and a third truck beneath an independently mounted tender. Universal joints between the front truck and the crankshaft, between the crankshaft and the second truck, and between the second truck and the third truck, permit the engine to negotiate curves and grades more readily than a "rod" locomotive with long rigid frame and drive mechanism, but this design limits the locomotive to a top speed of about 12 miles per hour.

The boiler is of more-or-less conventional oil-burning steam locomotive design, except that to counterbalance the weight of the pistons and driving mechanism which are placed only on the right side, the boiler is offset to the left (as viewed by the engineer in the cab looking forward), giving the locomotive a strange, unbalanced appearance, typical of almost all Shay locomotives.

The engine is built largely of steel, with a few wooden components such as the pilot beam. Above the wheels and driving mechanism it has, over a frame, (from front to rear), a smokebox and smokestack, a boiler over which are mounted a sand dome and a steam dome, the latter surmounted by safety valve and whistle, and beneath the rear of the boiler is a firebox. Behind the cab is a tank for fuel oil, and mounted independently of the frame which carries all of these components over two trucks or wheel sets, there is a water tank carried by a third truck, connected to the main portion of the engine by hoses, brake lines, couplings, and drive shaft with universal joint. On top of the boiler between the sand dome and steam dome is a bell in a cast iron hanger. Beneath the running board ahead of the pistons is an air reservoir for the brake system. The air pump for the brake system is mounted on the left side of the boiler ahead of the cab. The engine has a headlight mounted at the top front of the smokebox, ahead of the smokestack, and a backup light to the rear of the water tank at the back end. A steam-driven generator to power these and the interior cab lights is mounted on the boiler behind the steam dome and immediately ahead of the cab.

As originally designed, the locomotive had a wooden "pilot" or cowcatcher of conventional design, but this feature was replaced at an unknown date with the present "switching stepboard" or footboard for the convenience of brakemen. Originally the locomotive had two single cylinder air pumps mounted on the right side between the air reservoir and pistons instead of the single double-cylinder pump now on the left side. These changes were probably made during its historic use on the Pickering Lumber Company railroad, perhaps as early as 1926, they are minor changes, and do not diminish the engine's significance. The road number plate in the center of the boiler front is missing; a brass reproduction should be cast and mounted in place.

The engine is approximately ten feet high and 40 feet long and seven feet wide. It has 12½ by 15 inch cylinders, 36 inch diameter drive wheels, carried a boiler pressure when steamed up of 200 pounds per square inch, and weighs 198,000 pounds, with a net tractive force of 35,100 pounds.

# 8 SIGNIFICANCE

PERIOD		AREAS OF SIGNIFICANCE -- CHECK AND JUSTIFY BELOW				
<input type="checkbox"/> PREHISTORIC	<input type="checkbox"/> ARCHEOLOGY-PREHISTORIC	<input type="checkbox"/> COMMUNITY PLANNING	<input type="checkbox"/> LANDSCAPE ARCHITECTURE	<input type="checkbox"/> RELIGION		
<input type="checkbox"/> 1400-1499	<input type="checkbox"/> ARCHEOLOGY-HISTORIC	<input type="checkbox"/> CONSERVATION	<input type="checkbox"/> LAW	<input type="checkbox"/> SCIENCE		
<input type="checkbox"/> 1500-1599	<input type="checkbox"/> AGRICULTURE	<input type="checkbox"/> ECONOMICS	<input type="checkbox"/> LITERATURE	<input type="checkbox"/> SCULPTURE		
<input type="checkbox"/> 1600-1699	<input type="checkbox"/> ARCHITECTURE	<input type="checkbox"/> EDUCATION	<input type="checkbox"/> MILITARY	<input type="checkbox"/> SOCIAL/HUMANITARIAN		
<input type="checkbox"/> 1700-1799	<input type="checkbox"/> ART	<input type="checkbox"/> ENGINEERING	<input type="checkbox"/> MUSIC	<input type="checkbox"/> THEATER		
<input type="checkbox"/> 1800-1899	<input type="checkbox"/> COMMERCE	<input type="checkbox"/> EXPLORATION/SETTLEMENT	<input type="checkbox"/> PHILOSOPHY	<input checked="" type="checkbox"/> TRANSPORTATION		
<input checked="" type="checkbox"/> 1900-	<input type="checkbox"/> COMMUNICATIONS	<input type="checkbox"/> INDUSTRY	<input type="checkbox"/> POLITICS/GOVERNMENT	<input type="checkbox"/> OTHER (SPECIFY)		
		<input type="checkbox"/> INVENTION				

SPECIFIC DATES

1921-1960

BUILDER/ARCHITECT

Lima Locomotive Company

STATEMENT OF SIGNIFICANCE

Hetch Hetchy Railroad Engine No. 6 is of local historical significance in the category of transportation as the last and heaviest locomotive, and the only one of Shay design, purchased by the Hetch Hetchy Railroad. It contributed in an important way to the history of a railroad of regional significance which was part of a regionally significant engineering project, and later as part of a locally significant lumber industry logging railroad. It is one of three surviving Hetch Hetchy R.R. locomotives (Number 2, a 3-truck Heisler, and Number 4, a 2-8-2 Mikado, being preserved in the railroad museum at Traveltown, Griffiths Park, Los Angeles, California). It is considered eligible for nomination to the National Register as an object which is in fact larger than some buildings which have been nominated. As the railroad for which it was built was torn up for scrap a quarter of a century ago, and the logging railroad more recently, integrity of site is not considered requisite for its significance, nor is its present location requisite; its significance is independent of site or location.

This locomotive was the last and largest purchased by the Hetch Hetchy Railroad, and the only Shay locomotive it owned, although a number of leased Shay locomotives were used on the line at different times. The engine was built in 1921 by the Lima Locomotive Works and went to work in the spring of 1922 on the slow haul of cement trains up the steep grade known as "Priest Hill" during construction of the Hetch Hetchy Project. It was the best suited of Hetch Hetchy Railroad locomotives for that particular work. Upon completion of that phase of the Hetch Hetchy project, the locomotive was put up for sale in 1925 and purchased by the Pickering Lumber Company over whose standard gauge logging railroad it operated sporadically for many years until retired from service in 1958. It was subsequently moved to a National Park Service transportation exhibit at El Portal.

The Hetch Hetchy Railroad for which this locomotive was built and on which it first operated was a regionally significant railroad built in the Sierra Nevada Mountains and owned and operated by the City of San Francisco. It extended 68 miles from Hetch Hetchy Junction on the Sierra Railroad through Groveland to the site of construction of O'Shaughnessy Dam in the Hetch Hetchy Valley in Yosemite National Park. The railroad was built for the purpose of hauling construction materials for the dam and other portions of the Hetch Hetchy Project, an engineering project of regional historical significance designed to impound water in the Sierra Nevada and transport it across the Central Valley of California and the Coast Range to the city of San Francisco as needed, and to produce hydroelectric power in the transportation of the water. Construction of the dam itself proceeded from 1915 to 1922, and its height was raised between 1934 and 1938. The railroad was begun in 1914 and scrapped in 1950.

The Pickering Lumber Company Railroad on which this locomotive operated after its sale by the Hetch Hetchy Railroad was a locally historically significant Mother Lode Country logging railroad which began operation as the Sugar Pine Railway, Pickering being its later name. It was headquartered at the lumber company town of Standard, California, some distance north of Yosemite National Park but in the same general region, and not far from the Hetch Hetchy Railroad.

# 9 MAJOR BIBLIOGRAPHICAL REFERENCES

Ted Wurm, Hetch Hetchy and its Dam Railroad. (Berkeley: Howell-North Books, 1973); see index under "HHRR locomotives", and especially see pages 133, 139, 141, 143, 167, 175, 196, 273 and 276.

Adolf Gutohrlein, Rails in the Mother Lode. (Omaha: Kratville Publications, 1969)  
See Chap. III, "The Pickering Lumber Co.", pp. 110-167, especially pp. 132, 140, 142, 156, 159, and Chap. IV, "The Hetch Hetchy Railway."

# 10 GEOGRAPHICAL DATA *less than 1 (one) m. Shesfy 12.2.77*

ACREAGE OF NOMINATED PROPERTY Not relevant

UTM REFERENCES

A	1   1	2   5   4   8   7   5	4   1   7   3   2   0   0	B			
	ZONE	EASTING	NORTHING		ZONE	EASTING	NORTHING
C				D			

### VERBAL BOUNDARY DESCRIPTION

As an object, this locomotive has significance independent of site; the above UTM reference identifies the present location of this object, but its significance is not dependent upon this location and it may be moved without affecting its significance or National Register listing, although if moved a correction of location in the form of a new UTM reference must be filed with the National Register.

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

STATE	CODE	COUNTY	CODE
STATE	CODE	COUNTY	CODE

# 11 FORM PREPARED BY

NAME / TITLE

Gordon Chappell, NPS Western Regional Historian, Western Regional Office

ORGANIZATION

National Park Service, Western Regional Office

DATE

January 27, 1976

STREET & NUMBER

450 Golden Gate Avenue - Box 36063

TELEPHONE

(415) 556-4165

CITY OR TOWN

San Francisco

STATE

California

# 12 CERTIFICATION OF NOMINATION

STATE HISTORIC PRESERVATION OFFICER RECOMMENDATION

YES

NO

NONE

JUN 22 1977

STATE HISTORIC PRESERVATION OFFICER SIGNATURE

In compliance with Executive Order 11593, I hereby nominate this property to the National Register, certifying that the State Historic Preservation Officer has been allowed 90 days in which to present the nomination to the State Review Board and to evaluate its significance. The evaluated level of significance is National  State  Local.

FEDERAL REPRESENTATIVE SIGNATURE

*[Signature]*

TITLE

Deputy Assistant Secretary

DATE

AUG 19 1977

FOR NPS USE ONLY

I HEREBY CERTIFY THAT THIS PROPERTY IS INCLUDED IN THE NATIONAL REGISTER

*[Signature]*

DATE

1-20-78

DIRECTOR, OFFICE OF ARCHAEOLOGY AND HISTORIC PRESERVATION

KEEPER OF THE NATIONAL REGISTER

ATTEST:

*[Signature]*

DATE

1-24-78

KEEPER OF THE NATIONAL REGISTER