NPS Form 10-900
(Oct. 1990)

OMB No. 10024-0018

36

United States Department of the Interior
National Park Service

JAN 13 1993

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 Crowell Sawmill Historic District

other names/site number

2. Location

street & number 11789 U. S. 165 South N/A not for publication

city or town Long Leaf N/A vicinity

state Louisiana code LA county Rapides code 079 zip code 71448

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended, I hereby certify that this [X] 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 forth in 36 CFR Part 60. In my opinion, the property [X] meets [ ] does not meet the National Register criteria. I recommend that this property be considered significant [ ] nationally [X] statewide [ ] locally. ([ ] See continuation sheet for additional comments.)

Gerri Hobdy 1/7/93

Signature of certifying official/Title Gerri Hobdy, LA Date

SHPO, Dept. of Culture, Recreation & Tourism

State of 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:

Signature of the Keeper — Date of Action

[X] entered in the National Register. — Entered in the National Register — Delores Byers — 2/11/93
[ ] 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:)

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 the count.)

Contributing	Noncontributing	
20	7	buildings
		sites
13	2	structures
		objects
33	9	Total

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

N/A

Number of contributing resources previously listed in the National Register

0

6. Function or Use

Historic Functions
(Enter categories from instructions)

INDUSTRY/manufacturing facility

Current Functions
(Enter categories from instructions)

VACANT/not in use

7. Description

Architectural Classification
(Enter categories from instructions)

other: sawmill complex

Materials
(Enter categories from instructions)

foundation concrete, brick
walls metal, weatherboards
roof metal, asphalt
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.)

- [X] **A** Property is associated with events that have made a significant contribution to the broad patterns of our history.
- [ ] **B** Property is associated with the lives of persons significant in our past.
- [ ] **C** Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- [ ] **D** Property has yielded, or is likely to yield, information important in prehistory or history.

Criteria Considerations N/A
(Mark "x" in all the boxes that apply.)

Property is:

- [ ] **A** owned by a religious institution or used for religious purposes.
- [ ] **B** removed from its original location.
- [ ] **C** a birthplace or grave.
- [ ] **D** a cemetery.
- [ ] **E** a reconstructed building, object, or structure.
- [ ] **F** a commemorative property.
- [ ] **G** less than 50 years of age or achieved significance within the past 50 years.

Areas of Significance
(Enter categories from instructions)

industry

Period of Significance

1892-1942

Significant Dates

n/a

Significant Person
(Complete if Criterion B is marked above)

N/A

Cultural Affiliation

N/A

Architect/Builder

unknown

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):

- [ ] preliminary determination of individual listing (36 CFR 67) has been requested
- [ ] previously listed in the National Register
- [ ] previously determined eligible by the National Register
- [ ] designated a National Historic Landmark
- [X] recorded by Historic American Buildings Survey # not yet available
- [ ] recorded by Historic American Engineering Record # _____

Primary location of additional data:

- [X] State Historic Preservation Office
- [ ] Other State agency
- [ ] Federal agency
- [ ] Local government
- [ ] University
- [ ] Other

Name of repository:

_____

Crowell Sawmill Historic District
Name of Property

Rapides Parish, LA
County and State

10. Geographical Data

Acreage of Property @ 90 acres

UTM References
(Place additional UTM references on a continuation sheet.)

	Zone	Easting	Northing
1	15	541650	3430250
2	15	542400	3430400
3	15	542450	3429800
4	15	541850	3429750

☐ See continuation sheet

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

See attached sketch map.

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

11. Form Prepared By

name/title National Register Staff

organization Division of Historic Preservation date October 1992

street & number P. O. Box 44247 telephone (504) 342-8160

city or town Baton Rouge state LA zip code 70804

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 Crowell Lumber Industries

street & number 11789 Hwy 165 South telephone (318) 748-8141

city or town Long Leaf state LA zip code 71448

The boundaries of the Crowell Sawmill Historic District encompass forty-two resources: twenty contributing buildings, thirteen contributing structures, seven non-contributing buildings, and 2 non-contributing structures. Contributing elements range in date from an 1892 sawmill remodeled in about 1910 to 1930s buildings. Overall, the district has a twenty-one percent non-contributing rate, which is well within the normally acceptable range. The Crowell historic industrial complex is fairly widely spread out on a gently rolling site in the long leaf pine forests of southern Rapides Parish. Except for the sawmill, the district's contributing elements are almost unaltered since the historic period. The sawmill, the centerpiece of the district, retains its integrity despite a remodeling in the mid-1950s.

There are essentially two parts to the district: 1) an industrial zone with the sawmill, planing mill, train shed, lumber sheds, etc. and 2) a non-industrial area of residences, the company office, the commissary, a church, etc. Despite the loss of buildings and an overgrowth of trees and vines in some areas, both zones contain important cultural resources.

The Industrial Zone

The industrial zone is, on the whole, more concentrated than the non-industrial area. The industrial complex received a major overhaul in the mid-1950s, but a 1952 map of the area survives to show its prior appearance, which is believed to be its historic appearance. This map shows the industrial zone anchored by a mill pond of approximately five acres which was used for storage, cleaning and handling of logs. Immediately south of the pond was the sawmill with its railroad timber dock, boiler houses, lumber sorting and storage sheds and "hog house," a building used to store "hogs," or small carts used to transport logs and lumber around the industrial zone. Further to the south were the lumber dry kiln and the cooling shed. Southwest of the pond were a series of huge frame sheds for storing rough lumber. Northwest of the pond the principal buildings consisted of the planing mill and its power plant, a rough lumber shed and a dressed lumber shed. Finally, east of the pond were a train shed, a machine shop, a railroad log car repair shop and two storage sheds. These ranges of buildings were connected by a system of elevated plank thoroughfares, resembling wharfs, over which "hogs" filled with logs and lumber were pulled, first by mules and later by diesel tractors.

Some of these features do not survive, and although the historical record is not yet complete, it seems a fair assumption that most of the losses took place as a result of the mid-1950s overhaul. Historic resources which survive in the

Continued

industrial zone include the boiler houses, the sawmill, two supply sheds, the yard foreman's office for the rough lumber sheds, the dry kiln, a shipping clerk's office, the planer mill and its power plant, the train shed, the machine shop, the railroad log car repair shop, a central elevated water tank, three locomotives, a diesel fuel railroad car, a skidder, a log car and two log loaders. The pond has been filled in, and the system of wooden thoroughfares has been removed. Other major losses include five large rough lumber sheds and the cooling shed. Nineteen-fifties additions to the complex include four large lumber sheds of standing seam metal on steel frame, a new concrete dry kiln and a small turbine building for the sawmill. The latter was needed because the operation of the mill changed from steam to electric power. It should be noted that the location of the new lumber sheds and dry kiln approximates the location of the large frame rough lumber sheds shown on the 1952 map. Thus the original configuration of the complex, while not completely intact, is recognizable. The only other noteworthy feature of the industrial complex is an aerial pipe which conveyed sawdust for burning between the sawmill complex and the planing mill.

The Sawmill

The historical record indicates that the sawmill was built in 1892 and remodeled in 1910. It is probably impossible to determine which features date from the original period and which from 1910. Like most historic industrial buildings, the present sawmill is the product of several renovations. Currently the sawmill consists of four buildings -- the sawing building itself, two boiler houses which provided steam power and a 1950s turbine building which provided electric power.

The sawing building is a long relatively narrow structure of very heavy timber frame. There are two principal stories plus a very small single room third story which was used for sharpening saw blades. The bottom story contains a complex system of shafts and wheels for operating the mill's belt driven machinery. At one time it also contained two steam engines, although one of these was removed as part of the mid-1950s remodeling.

The second floor was where the sawing took place. The narrow northern end of the building faced the mill pond. Logs were conveyed from the pond up to the sawing floor via an inclined "V" shaped trough with a powered conveyor chain inside. The concrete and steel trough, which appears to show in a 1913 photograph of the mill, still survives although it is overgrown and the chain is rusted and immovable. Once inside the mill logs progressed from north to south, becoming planks in the process. The first operation involved the "cut off" saw, a three foot in diameter circular saw blade mounted on a huge wand which was lowered to cut the logs off to the desired length. This feature survives complete with its wooden housing and drive belt. Once cut to length, logs were

Continued

placed upon wooden carts for sawing into planks. There were two carts, one each side of the sawing room, which were mounted on steel tracks running parallel to the building. The carts were propelled back and forth in front of a second set of large circular saws by steam pistons called "shotguns." With each pass another plank was cut off. The carts, tracks and "shotguns" survive as do the platform structures encompassing them. The plank cutting circular saws were replaced with a single huge band saw in the mid-1950s. South of the plank cutter saws were two long wooden platforms fitted with large steel rollers. These conveyed the planks to edger saws which cut the bark from the edges of the newly cut planks. The platforms, rollers and edger saws are original. During the historic period planks left the mill after the edging operation to be stacked according to length and then dried in the kiln.

The historic boiler complex is the product of three periods. Power for the sawing operation was originally provided by a two story steel frame and metal sided boiler house set just west of the northern end of the mill. It originally contained two pairs of boilers, each pair with an individual smokestack. The boiler plates have a date of 1910. Further west was a brick building for storing sawdust. In 1920 a third pair of boilers, with a third smokestack, was added to the boiler house. In the early 1930s the brick sawdust storage building was enlarged with a brick addition which contained a new larger boiler with its own somewhat taller smokestack. In effect, the building became a second boiler house. Between the early boiler house and the mill is a substantial brick fire wall.

Penetrating the mill, the boiler houses and the sawdust storage area is a system of steel ducts designed to convey sawdust from the sawing operation to the boilers and the sawdust storage area. Sawdust was moved along in the ducts by a double conveyor chain powered by its own steam engine. The chain, the gear system to which it is connected, the steam engine and the drive belt all survive.

In addition to the previously mentioned changes which occurred in the boiler house and sawdust storage area, the mill itself has been altered. A 1913 photograph shows the sawing area open to the air. The mill is now entirely sheathed in corrugated metal with steel windows. The lower story was probably always sheathed in. According to Allen Crowell, who has been active on the property since the 1920s, the sawing area was sheathed in during the 1930s. In addition to this, the 1952 map of the complex shows a small wing on the west side of the mill labeled "Engine Room." This feature was probably an addition because it does not appear to show in the previously mentioned 1913 photograph. The engine room addition was removed as part of the mid-1950s remodeling. At that time a two story turbine house was built, essentially on the site of the addition, but not connected to the sawmill itself. Also, a plank trimmer shed, a dipping vat shed and a long shed for sorting and stacking freshly cut lumber were

Continued

added to the west elevation of the mill at the south end. These corrugated metal over steel frame buildings were appended to the mill and are collectively considered an addition.

The Old Dry Kiln

Built in the 1930s, this plain brick building consists of three long kiln chambers surmounted by a concrete beam roof. It was used to steam-dry freshly cut lumber. Some of the steam pipes and fan ventilation equipment remains.

The Planing Mill

The purpose of the planing mill was to plane the surfaces of rough sawn planks to produce smooth "dressed" lumber. The planing mill operation consists of two buildings: the mill itself and the engine house.

The historical record indicates that the planing mill building was built in the late nineteenth century and remodeled in the early years of this century. It is not possible to determine which features are original and which date from the remodeling. The mill has a concrete basement which contains a small shop for sharpening blades. The basement's only other noteworthy feature is the lineshaft from the engine house. Originally this was connected to the planers. The mill's principal story, which is where the planing operation took place, features very heavy timber framing and some plank sheathing, although it is still largely open to the air. The planing space culminates in a monitor roof with corrugated metal roofing. There is also a small second story whose purpose is to provide access to the system of steel ducts designed to convey wood shavings to the engine house for burning and storage. The mill received a small side addition during the mid-1950s. Also at that time most of the planing equipment was replaced.

The corrugated metal over steel frame engine house was constructed during the 1930s. It is set just northeast of the planing mill. The building contains four boilers, a brick chamber for storing wood shavings, a Corliss steam engine, a fly wheel, and a drive belt which is connected to the aforementioned lineshaft. The smokestacks above the boilers have been lost.

Other Industrial Resources of Note

Both the machine shop and the log car repair building date from around the turn-of-the-century. Both are constructed of timber frame with corrugated metal siding and roofing. The train shed (constructed before 1910) is corrugated

Continued

metal over steel frame with a monitor roof. It was used to repair railroad locomotives used to haul logs from the forest along dummy limes. A pit in the shop floor allowed workers access to the undercarriages of locomotives.

Other industrial resources include three locomotives, a diesel fuel railroad car, a log skidder, a log car, and two log loaders. Two of these, a locomotive and a log car, are located within the log car repair building. Otherwise, these resources are not within buildings.

The most significant of the foregoing resources is the skidder, which was used to haul freshly cut logs to dummy rail lines for loading onto log cars. Manufactured by the Clyde Iron Works of Duluth, Minnesota (patent date 1911), the skidder consists of a steel frame on a railroad carriage with a central boiler and a steam winch at each end. The winches were used to drag cut logs across the forest floor towards the log loaders.

Two log loaders survive at Crowell, one of which bears a patent date of 1912. (The other has no date.) The loaders consist of large steel frames mounted on railroad carriages. When a loader was hauled into place, the carriage wheels were retracted, allowing the frame to rest on the ground. This allowed log cars to pass through the frame. As they passed they were loaded with logs using a boom attached to the loader.

The three locomotives are a 1913 Baldwin 4-6-0 pine knot burning locomotive with a "cabbage head" stack, a c. 1920 Baldwin 4-6-0 with tender, and Locomotive #106, a c.1920 Baldwin 2-6-0 with tender. The diesel fuel tank car (patent date 1917) was used to carry diesel fuel to tractors in the forest.

The Non-Industrial Zone

The non-industrial zone is set to the west of the industrial area. At one time there were numerous houses and streets in the area -- a virtual town. But the Crowell company town lost most of its population, long abandoned houses have disappeared, and even the roads are overgrown. Part of one residential street remains, containing two frame cottages, one bungalow and a frame garage, all dating from about 1925. The grandest residence at Crowell is the 1935 Allen Crowell House, a rambling one story Colonial Revival house with nine rooms, a garage wing and a square columnar front gallery. Another building of note is the old post office, a small gabled frame building with narrow gauge clapboarding. The large, single story, "T" shaped commissary, with its three porches, has every appearance of a historic building. Unfortunately, it was built to replace a previous one that burned in 1947, so it must be considered a non-contributing element. Near the commissary are two historic corrugated metal storage sheds and

Continued

a small frame modern post office. The company built Long Leaf Baptist Church (c.1920) is a plain narrow gauge clapboard building with a front facing gable. Next to the church is a single story auxiliary building built in the 1960s. The present company office building was built in the 1930s as a residence for Draughton Crowell and his family. It was a story and a half Colonial Revival house with a partial front porch and a front facing gable containing a Palladian window. The family moved out in 1944 and the house was enlarged with a huge rear wing to become the company office. It is considered a contributing element. Next door to the house\office is a frame garage with rooms above.

Integrity

Alterations to historic buildings, losses of historic buildings and construction of new buildings have already been detailed in full. It should be emphasized that despite these changes, the Crowell Sawmill Historic District still easily conveys its identity as a historic industrial complex. In any case, resources of the type exemplified by Crowell are so rare that even a compromised example is still very significant.

Continued

The following breakdown by types is based on the examples given on page 15 of Bulletin 16A:

Contributing Buildings (20)

Allen Crowell House
Company Office Bldg.
Garage Dependency to Co. Office Bldg.
Old Post Office
Sheds (4)
Worker's Houses (3)
Garage to Worker's House
Long Leaf Baptist Church
Rough Lumber Yard Foreman's Office
Sawmill
Shipping Clerk's Office
Planing Mill
Train Shed
Machine Shop
Log Car Repair Shop

Non-contributing Buildings (7)

Commissary
Non-historic Post Office
Auxiliary Bldg. to Long Leaf Church
Lumber Sheds (4)

Contributing Structures (13)

Old Dry Kiln
Boiler Houses to Sawmill (2)
Water Tower
Planing Mill Engine House
Log Car (located within log car repair shop)
Locomotive #106 (located within log car repair shop)
Log Loaders (2)
1913 Baldwin Locomotive
Diesel Fuel Railroad Car
c.1920 Baldwin Locomotive
Skidder

CONTINUED

Non-contributing Structures (2)

Non-historic Dry Kiln
Non-historic Turbine Bldg. for Mill

The Crowell Historic District is of state significance in the area of industry as an immensely important example of a historic sawmill community. It is one of a limited number of resources left to directly represent the great Louisiana lumber boom and is believed to contain the only surviving industrial component. The period of significance spans from 1892, the earliest building date, to 1942, the fifty year cutoff for significance. The sawmill remained in operation until 1969, and the lumber industry remained an important force past the fifty year cutoff.

Industrial lumbering was one of the major historic forces in the development of Louisiana, and indeed the entire South. In fact, it was about the only bright spot in an otherwise weak post-Civil War economy. Until the 1880s, Louisiana's vast pine forests were largely untouched. It was then that large-scale industrial lumbering began in earnest. During the so-called "Golden Years" of the Louisiana lumber boom (c.1905-c.1925), 4.3 million acres of virgin timberland were cut. Virtually all of the lumber companies had the same policy -- i.e., "cut out and get out." Reforestation was largely unheard of, and as a result, much of Louisiana was reduced to a stump-covered wasteland of "worthless" cut-over timberland.

With the lumber, and the money made from lumbering, Louisianians embarked upon a furious pace of building. Indeed, much of the state's building stock dates from the heyday of lumbering. Thus, in a general sense, the Queen Anne Revival cottages and bungalows found in many towns represent the lumber boom and what it did to the state. These are its largest, although not its most important legacy. More important are the small number of cultural resources directly associated with the industrial production of lumber. These include lumber company towns, company commissaries, owners' and managers' houses, and company built public buildings such as schools and churches.

Unfortunately, very few lumber boom related resources survive compared to the number that once existed. In many cases lumber company buildings were dismantled and moved out of the state when the timber played out. In other cases buildings in abandoned lumber communities simply collapsed after years of neglect. It should be emphasized that at one time there were literally dozens upon dozens of lumber communities. Indeed, there were over seventy sawmills within a forty mile radius of Alexandria alone. As far as the State Historic Preservation Office is aware, approximately twenty-five lumber boom related resources survive in the state. Most of these are individual buildings built by this or that particular lumber company. In addition, there are seven lumber company communities which survive in varying degrees of integrity. Crowell is conspicuous because it is thought to be the only lumber community which still contains its industrial component. Indeed, the Crowell sawmill, planing mill, train shed, machine shop, and log car repair shop represent a unique collection

Continued

in the state.

In addition, resources such as the locomotives, log car, loaders, etc. are extremely rare. This is especially true of the log loaders and the skidder, which are probably the only surviving examples of their type in the state.

Although the relevant research has not been compiled, it is likely that a case could be made for Crowell as a nationally significant resource. Eric Deloney, Director of the Historic American Engineering Record, indicated, in a conversation with the SHPO staff, that Crowell is the only surviving historic sawmill that he knows of in the country, although he admitted that his knowledge was not exhaustive. Probably other historic sawmills exist, but they are undoubtedly quite rare.

Historical Note

The Crowell Lumber Company was founded in 1892, and the mill ceased operations in 1969. The property is still owned by the Crowell family. Today's company, Crowell Lumber Industries, is in the timber management business. Negotiations and planning are currently in progress to restore and open the facility to the public as a museum.

Bibliography

1952 map of Crowell Sawmill Complex, in possession of Crowell Lumber Industries.

Indepth tours of the facility with Allen C. Crowell, who began working at the mill in the 1920s. He oversaw the 1950s remodeling.

Interview with Cecil Gill, Crowell Lumber Industries. Mr. Gill began working at the mill in the late 1940s.

DeRamus, Troy L. Up and Down the Red River and Gulf Railroad. Alexandria, Louisiana: MPress Printing and Publishing Company, 1989. This book contains two 1913 photos of the mill.

The Master Plan for a Forestry Museum. Prepared for the Louisiana Forestry Association by Southwest Museum Services, Houston, Texas, 1992.

Boundary Justification

Boundaries were drawn to encompass the surviving historic resources at Crowell. To have followed property lines would have meant including thousands of acres of timberland.

NPS Form 10-900
(Rev. Aug. 2002)

OMB No. 1024-0018
(Expires 1-31-2009)

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
REGISTRATION FORM

1. Name of Property

historic name Crowell Sawmill Historic District (additional documentation)

other names/site number _____

2. Location

street & number 11789 US 165 South not for publication N/A
city or town Long Leaf vicinity ___
state Louisiana code LA county Rapides code 079
zip code 71444

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 forth 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. (_x__See continuation sheet for additional comments.)

See Continuation Sheet, Additional Documentation 1

_____ _____
Signature of certifying official Date

_____
State or Federal Agency or Tribal government

4. National Park Service Certification

I, hereby certify that this 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): _____

Accept Additional Documentation Patrick Andrus 8/22/2008
Signature of Keeper Date of Action

Part 1: Crowell Sawmill Historic District Additional Documentation

Part 3: State Certification

As the designated authority under the National Historic Preservation Act, as amended, I hereby certify that this nomination meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 26 CFR Part 60. In my opinion, the property meets the National Register criteria. I recommend that this property be considered significant nationally.

7-22-08

Signature of Certifying Official **Date**
Phil Boggan, Deputy SHPO
Dept. of Culture, Recreation and Tourism

Introduction:

The Crowell Sawmill Complex (1901-1945) in Rapides Parish, Louisiana originally achieved National Register status on February 11, 1993. Listed as the Crowell Sawmill Historic District, it was recognized due to its state-level industrial significance as a rare and immensely important example of a historic sawmill complex within Louisiana. The purpose of this additional documentation for that nomination is fourfold: 1) to upgrade the level of significance for the district (which is today known as the Southern Forest Heritage Museum) to the national level, 2) to add architecture as an area of significance, 3) to add to the physical description more accurate and more complete information than was available in 1993, and 4) to correct the period of significance's beginning date and expand its ending date. While researching information for this update, the Louisiana State Historic Preservation Office learned of a mistake in the period of significance as recorded in the 1993 nomination. That document gives the beginning date as 1892. Although the first sawmill built by the company at Long Leaf did date to 1892, that facility burned in 1900; rebuilding was completed in 1901. Thus, for the record, 1901 serves as the beginning date for the period of significance. Additionally, the period of significance should be expanded to 1945 because, as will be explained below, the Crowell sawmill played an indirect but very significant role in the Allied victory over the Axis powers in World War II.

Part 5: Resource Count

Research for this update and consultation with Louisiana's National Register reviewer in Washington revealed that the evaluation of resource types submitted as part of the 1993 original nomination is partially inaccurate. Furthermore, this update will add to the count an important resource – the district's surviving railroad track – mentioned in 1993 but not specifically included as a resource at that time. Thus, the total resource count will rise from 42 to 43, 34 of which are contributing elements. Below is a table presenting the resource count as previously submitted and showing changes to some of the type and status determinations. Additionally, this table contains information about the newly added resource. A second table, listing each resource by name and providing previous and new type and status information will be found at the end of Part 7 of this document.

RESOURCE TYPE AND STATUS

Previous Resource Count			Updated Resource Count		
	Contributing	Non-contributing		Contributing	Non-contributing
Buildings	20	7	Buildings	21	6
Sites			Sites		
Structures	13	2	Structures	6	2
Objects			Objects	8	
Total	33	9	Total	35	8
Total Contributing + Non-Contributing		42	Total Contributing + Non-contributing		43

Part 7: Physical Description and Integrity

Located on a 90-acre site at Long Leaf, Louisiana, just south of Forest Hill in southwest Rapides Parish, the Crowell Sawmill Historic District is fairly widely spread out on a gently rolling site in the long leaf pine forests. It contains forty-two resources: twenty contributing buildings, six contributing structures, eight contributing objects, seven non-contributing buildings, and 2 non-contributing structures. Contributing elements range in date from a sawmill begun in 1901 and significantly remodeled in 1910 to 1930s buildings.

There are essentially two parts to the Crowell district: 1) an industrial zone with the sawmill, planing mill, a railroad system, the latter's support buildings, incredibly rare Clyde Log Skidder, and two also rare McGiffert Log Loaders; and 2) a non-industrial area of residences, the company office, the commissary, a church, etc. This update will focus upon the district's industrial area; the non-industrial area will be discussed only briefly.

The Industrial Area

Crowell's founders constructed the facility in the vernacular tradition, without benefit of formal plans and reflecting what they believed to be the most efficient design for its purpose and location. Purely functional and utilitarian, the buildings cannot be described in terms of any specific architectural style. They are primarily of wood frame and some non-combustible construction, one and two stories in height, with wood or concrete floors, metal or in some cases open sides, and wood-and-metal covered roofs. Despite some remodeling, the complex retains integrity of location, design, setting, workmanship, feeling, and association.

The Sawmill Building

The historic portion of the sawing area actually consists of one building (that containing the saws) and two structures (called boiler houses) that provided steam for powering the saws.

The sawing building was built using a method called "mill construction." This means that the building's framing consisted of very heavy timbers that would survive a fire unless it burned for a long time. Additionally, large and thick roof trusses were used to form and support the roof. They minimized the number of interior posts, which got in the way of lumber handling. The building was long and relatively narrow and had two

principal stories plus a very small single room third story that was used for sharpening saw blades. The enclosed bottom story contained a complex system of shafts and wheels for operating the mill's belt driven machinery as well as two steam engines.

The open-air (i.e., wall-less) second floor was where the sawing took place. The narrow northern end of the building faced the millpond. Logs were conveyed from the pond up to the second-level sawing floor via an inclined "V" shaped wooden trough with a powered conveyor chain inside. Once inside the mill, logs progressed from north to south, becoming planks in the process. The first operation involved the "cut off" saw, a three-foot in diameter circular saw blade complete with wooden housing and drive belt. Once cut to the chosen length, short logs were sent to one side of the sawing room while long logs were sent to the other. On each side they were placed upon wooden carriages for sawing into planks. The carriages were mounted on steel tracks running parallel to the building. The carriages holding short logs were propelled back and forth in front of a second set of large circular saws by steam pistons called "shotguns." With each pass another plank was cut off. The carriage for the long logs carried them past a band saw (the mill's first use of this technology) for cutting.

South of the plank cutter saws were two long wooden platforms fitted with large steel rollers. These conveyed the planks to edger saws that cut the bark from the edges of the newly cut planks and sawed boards into narrower ones. It contained eight saw blades, of which six were adjustable to allow the cutting of different width boards. During the historic period planks left the mill after the edging operation to be stacked according to length and then dried in the kiln.

The two historic boiler houses are the product of three periods. A two-story, steel frame and metal-sided boiler house set just west of the northern end of the mill originally provided power for the sawing operation. This building contained two pairs of boilers, each pair with an individual smokestack. The boilerplates on these machines have a date of 1910. In 1920 the company added a third pair of boilers, with a third smokestack, to the boiler house. Power from the additional boilers ran a dynamo that supplied DC power for lights within the mill and some of the homes in the adjacent company town. A substantial brick firewall separated the early boiler house from the mill. All the boilers used sawdust, shavings from the planer mill, and chipped-up scrap materials from the sawing area as fuel. A brick fuel house for storing these materials stood west of the boiler house. A double conveyer chain enclosed within a system of steel ducts carried the fuel from the sawing room to the fuel house and, eventually, into the boiler house. The chain was powered by its own steam engine.

Like most historic industrial buildings, the sawing building, boiler house, and fuel house experienced alterations and the replacement of some machinery over the years. For example, one side of the mill is now sheathed in corrugated metal with steel windows. The other side has sliding wood sash windows. According to Allen Crowell, a now-deceased family member who was active on the property from the 1920s onward and who provided information for the 1993 nomination, the second floor sawing area was enclosed during the 1930s. In addition to this, a 1952 map of the complex used as a resource for preparing the original nomination shows a small wing on the west side of the sawing building labeled "Engine Room." This feature was probably an addition because it does not appear to show in a historic 1913 photograph.

Further changes to the sawing building, and changes to the boiler house, took place in 1936. The plank cutting circular saws were replaced with a single huge band saw because the latter wasted less wood. Additionally, a larger carriage replaced the original one on this side of the building. A wall had to be bumped out at this location to make room for the larger band saw and carriage. The company also enlarged the fuel house, constructing a brick addition containing a larger, second-hand boiler with its own somewhat taller smokestack. In effect, the fuel house became a second boiler house.

After the mill was closed in 1954 (see below), the sawing area and boiler houses experienced some renovation and modernization in 1956. This work was completed so that the sawmill complex could process smaller logs coming from second-growth trees. On the sawing area's exterior, workers drained and then paved over the millpond. Additionally, they replaced the wooden trough carrying logs into the mill with a concrete and steel trough. Although its chain is now rusted and immovable, the trough is the same general design as its original wooden predecessor. Inside the mill, the older (1910) band saw was replaced. Also in 1956, a plank trimmer shed, a dipping vat shed, and a long shed for sorting and stacking freshly cut lumber were added to the west elevation of the mill at the south end. These corrugated metal over steel frame buildings are collectively considered an addition. The previously mentioned engine room addition was removed as part of the 1956 remodeling. On its site a two-story turbine house containing a steam turbine-driven generator was built to provide electricity for equipment motors and other parts of the newly electrified mill. Other important components of this renovation included upgrading the sawmill carriages to hydraulic operation, adding a new boiler, and replacing the steam engines in the sawmill and boiler houses with electric motors.

The Planing Mill

The purpose of the planing mill was to smooth the surfaces of rough sawn planks to produce "dressed" lumber. At Crowell, the planing mill operation consisted of two resources: the planer mill building itself and a structure, known as the engine house, that generated power to run the mill. The planer mill remains almost totally as built.

Construction of the planing mill also occurred in 1910. About 100 feet square, it was also built using "mill construction." Surprisingly, some of the building's fire-susceptible board-and-batten siding remains. However, much of the building is open to the air. Very large roof trusses were also part of this design. Two reasons determined the main floor's placement several feet above ground. First, this allowed a long line shaft or power shaft coming from the engine house to the mill basement to turn, feeding power to the planer and other machinery by flat belts going through openings in the floor. Second, it allowed easy loading of lumber and millwork into boxcars parked on the adjacent railroad siding. The planing space culminates in a monitor roof with corrugated metal roofing. There is also a small second story whose purpose is to provide access to the system of steel ducts designed to convey the wood shavings to the engine house for burning and storage. A highly skilled worker maintained the blades of saws and knives in a sharpening room located under the mill.

The corrugated metal-over-steel-frame engine house was constructed in 1910 and remodeled in the 1930's. Located just northeast of the planing mill, it contains four boilers, a brick chamber for storing wood shavings, and a large Corliss steam engine. The smokestacks above the boilers have been lost. Sawdust produced in the planer mill served as fuel for the boilers. The steam they produced rose into a tank, and then moved into a pipe leading to the Corliss steam engine. (The latter, the largest stationary steam engine on the site, was built by Allis Chalmers in the 1920s.) The steam operated a large piston in a cylinder, causing the steam engine's enormous flywheel (measuring twelve by four feet) to turn. A two-foot-wide drive belt attached to the flywheel transferred the power to a pulley below the floor, and the pulley turned the 120-foot shaft running outdoors and under the whole length of the planer mill. This line shaft carried the power to the planing mill's machines.

In the 1956 renovation, the planer mill received an addition with a concrete floor and metal frame. Additionally, parts of the planer machine and some of the molding machines were apparently replaced. (After

the sawmill closed for the second time [see below], the planer mill experienced water damage over the years, with the result that much of the floor and some of the trusses rotted. These were repaired in 2002.)

Integrity of the Sawing Area and Planing Mill

Two pivotal decisions concerning the 1956 modernization helped to maintain the historic integrity of the sawing area and planer mill, as well as of other resources discussed later in this narrative. First, the electric motors were merely connected to the existing line shafts rather than being replaced. Second, machinery that was removed or replaced was simply stored outdoors instead of being scrapped. Today, this machinery remains on the site. Thus, the sawmill's classic line shafting and power transmission complex remains essentially intact. Other historic machinery surviving inside the sawing area includes the "shotguns," 1910 carriage and tracks, edger saws, rollers, and the platform structures encompassing these pieces of equipment. In the planer mill's boiler house, the chain, the gear system to which it is connected, the steam engine, and the drive belt all survive. Other historic machines surviving in the planer mill include a 1910 band resaw, a small edger, and a 1918 molding machine. The latter produced more specialized products, including delicate moldings, beaded sheathing, drop siding, and tongue-and-groove flooring. Crowell craftsmen could fashion special molding knives and then create custom moldings. These kinds of finished goods were more profitable than plain lumber. None of the 1956 changes detailed above are serious enough to negatively impact the Crowell Sawmill complex's integrity. It retains the bulk of its early twentieth century appearance and overwhelmingly coveys its identity as an industrial lumbering complex of that era.

Industrial Railroad

Crowell's historic industrial railroad system consists of track, three locomotives, one Clyde Log Skidder, two McGiffert Log Loaders, roundhouse, machine shop, and car shop. Today much of this network remains intact.

Approximately three miles of the Crowell railroad track survives within the historic district. Although track located around the perimeter of the industrial area is somewhat covered by vegetation, the spurs leading to the sawmill, planing mill, roundhouse, machine shop, and car shop are visible. Track is also visible where the Clyde Log Skidder, the McGiffert Log Loaders, and the locomotives are stored.

The roundhouse, machine shop and car shop are located near each other in a row at the eastern edge of the district's industrial area. Built in 1930 to replace a smaller predecessor, the roundhouse is actually a rectangular building that never had a turntable for locomotives. It features a monitor roof and is composed of corrugated metal over a steel frame. Using a pit in the floor to give them access to the undercarriages of locomotives, Crowell workers conducted inspections, performed routine maintenance, and made repairs to the engines here. They also filled the engines' tenders with fuel oil and kept them warm at night. Otherwise, it would have taken about three hours to fire a locomotive up from a cold condition. The car shop (built between 1922 and 1925) is constructed of timber frame with corrugated metal roofing and siding on one elevation. Its other three sides remain open. A single-cylinder Westinghouse steam air compressor with hydrostatic lubricator is mounted on the west side of the car shop wall.

The belt-and-shaft-driven machine shop (which also includes a blacksmith shop) is constructed of timber frame with corrugated metal siding. Like the roundhouse, it has a monitor roof. It was built between 1912 and

1920, when the mill was investing in new machinery and new railroad equipment. Measuring 50 x 100 feet, it is well equipped with mostly turn-of-the-twentieth-century machinery and tools. Examples of tools found here include a blacksmith's anvil, forge, forge blower, two-wheel cart, grinder with stand, Cincinnati Bickford radial drill, Acme Machinery Company power pipe threader, Buffalo Forge Company floor-model drill press, double-ended belt drive bugger-grinder, large Lodge and Shipley machine lathe, smaller lathe, American Tool Works Company shaper, rare small Cincinnati metal planer, rare double-arbor or offset J. J. McCabe lathe, early hydrostatic railroad wheel press, and a vertical boring mill. Additionally, a Westinghouse cross-compound steam air brake compressor is attached to the north wall outside the machine shop. The integrity of the machine shop remains intact. Especially important is the fact that, unlike some other shops, the belts connecting the machines to their power source were never enclosed to increase safety.

Crowell's three surviving locomotives include:

Locomotive # 202, a 1913 standard gauge Baldwin 4-6-0 (four small wheels in front, six larger driving wheels in the middle, and no wheels at the rear) pine knot burning engine with a steel cab, cabbage head stack, 40 inch diameter driving wheels, and a steam jam locomotive brake. The latter indicates that this engine most likely served on the woods lines. The tender survives but is parked elsewhere within the district. The engine has been moved from its 1993 location and is now is stored on track inside the Machine Shop. The locomotive is missing the bell, headlight, whistle, front number plate, some cab fittings, and both builder's plates. However, as mentioned, its cabbage shaped stack survives. Also known as a Rushton stack, it is a spark arrester designed to guard against forest fires by containing the showers of sparks and cinders generated by the wood-burning engine.

Locomotive #400, a 1919 standard gauge Baldwin 4-6-0 with a steel cab, turbo generator, electric headlight, two single-stage Westinghouse 9 inch air pumps, air brakes, 48 inch driving wheels, and a tender with "Crowell Long Leaf Lbr. Co., Inc." lettered on its side. The power system has been converted to burn oil, and a square riveted oil tank is located in the fuel space on the tender. The engine's cannon stack was added as part of this conversion. Its original Rushton cabbage stack is visible nearby in a pile of discarded machinery. The engine is missing the builder's plates, front number plate, bell, whistle, safety valves, and some of the smaller cab fittings. Locomotive #400 and its tender are parked on a yard track near the roundhouse.

Locomotive # 106, a 1923 standard gauge Baldwin piston-valve 4-6-0 accompanied by a tender with the lettering "Red River & Gulf Railroad" on its side. This engine has a Walschaert valve gear, air brakes with a Westinghouse cross-compound air compressor, electric headlight, turbo generator, and 48-inch diameter driving wheels. Its builder's plates, front number plate, bell, whistle, and safety valves are all missing, but its cab fittings are pretty complete. This locomotive was also converted to oil by the addition of a square riveted oil tank in the fuel space on the tender and the installation of a cannon stack. The engine and tender are stored inside the car shop.

The huge Clyde Log Skidder (built in 1919) is a piece of self-contained, rail-mounted machinery that included a steam engine with its own central wood-burning vertical boiler. Thus, when operable, it could travel along the rails under its own power. The steam engine also powered drums holding several thousand feet of thick wire cable used to pull logs to the railroad track for transport to the sawmill. The pulling drums could operate simultaneously. Skidder crews would run the cables into the woods, typically an eighth of a mile, attach them to logs with large tongs, and then pull the logs to the railroad track. A double-ended skidder had at least one drum on each end. A "rehaul" model (developed in the 1910s) could also run its cables in reverse, carrying

the tongs back out to the woods under power. Crowell's machine is a double-ended, rehaul model with two drums on each end. It is the largest Clyde double-end skidder ever built and the only one built in this size.

Despite some deterioration caused by weathering, the skidder's overall condition is good. Missing but replaceable parts include the boiler fittings, the smoke cone and stack (located on the ground nearby), and two large wooden poles known as booms that have rotted and are in pieces. Surprisingly, the original builder's plates (one on each side) remain in place. They read as follows:

CLYDE
SKIDDING MACHINE
MANUFACTURED BY
CLYDE IRON WORKS
DULUTH, MINN
PAT **DECEMBER 31, 1907 JULY 10, 1910**
JULY 21, 1903 MARCH 23, 1911
OTHER PATENTS PENDING

Crowell retains two McGiffert Log Loaders, both built by the Clyde Iron Works in 1919. A McGiffert was essentially a large crane mounted high on a tall and wide steel frame that traveled and operated on a railroad track. Its job was to lift each log from the pile created by the skidder and lower it onto a log car. Steam generated in a vertical boiler burning pine knots and other wood scrap stored on a deck at the rear powered the self-propelled machine.

When a McGiffert reached the pick-up site, its operator lowered the machine's oversize feet until they rested on the railroad ties. Next, he retracted its railroad wheels. Even though the machine still straddled the tract, these operations left a space beneath the loader high enough to allow a series of empty log cars to be pulled underneath the machine. An empty car was always positioned on the track near the McGiffert. Swingable booms attached to the loader lifted the logs and, one at a time, placed them on the exposed car. As each car was filled, it was pulled through the loader and the next empty car rolled forward into place. In this manner the McGiffert gradually built a trainload of logs for transport to the sawmill.

Of the two McGifferts at Crowell, the one located next to the Roundhouse is the more complete. Its front drive chain has been removed and stored, but its rear drive remains in place. All the boiler fittings are missing. Although the wooden boom rotted and disappeared long ago, the iron parts once attached to it survive. As with the Clyde skidder, this McGiffert's rare cast iron builder's plate survives. It reads:

No. 1229
Mc GIFFERT LOG LOADER
PAT DEC 16, 1902, JUNE 25, 1907, DEC 22, 1908, NOV 21, 1911,
FEB 18, 1912
Mfgd By
CLYDE IRON WORKS
DULUTH, MINN

The second machine, located not too far away, is similar to the first. However, it has lost more of its parts. Both are clearly recognizable (by those familiar with the history of the logging industry's technological

development) as McGiffert log loaders.

Other Industrial Resources

Other historic resources survive within the industrial area but are not a focus of this update. These include some supply sheds, the yard foreman's office for the rough lumber sheds, a shipping clerk's office, a central elevated water tank, and a dry kiln. The latter, built in the 1930s, is a plain brick building consisting of three long kiln chambers surmounted by a concrete beam roof. It was used to steam-dry freshly cut lumber. Some of the steam pipes and fan ventilation equipment remains. The company constructed a new and larger dry kiln on another site within the industrial area in 1956.

Non-Industrial Area

The non-industrial zone is set to the west of the industrial area. At one time there were numerous houses and streets in the area -- a virtual town. But the Crowell company town lost most of its population, long abandoned houses have disappeared, and even the roads are overgrown. Part of one residential street remains, containing two frame cottages, one bungalow and a frame garage, all dating from about 1925. The grandest residence at Crowell is the 1935 Allen Crowell House, a rambling one story Colonial Revival house with nine rooms, a garage wing and a square columnar front gallery. Another building of note is the old post office, a small gabled frame building with narrow gauge clapboarding. The large, single story, "T" shaped commissary, with its three porches, has every appearance of a historic building. However, it was built to replace a previous one that burned in 1947. Since it is now over sixty years old and was in service during part of the historic period, its status should be changed to contributing. Near the commissary are two historic corrugated metal storage sheds and a small frame modern post office. The company built Long Leaf Baptist Church (c.1920) is a plain narrow gauge clapboard building with a front facing gable. Next to the church is a single story auxiliary building built in the 1960s. The present company office building was built in the 1930s as a residence for Draughton Crowell and his family. It was a story and a half Colonial Revival house with a partial front porch and a front facing gable containing a Palladian window. The family moved out in 1944 and the house was enlarged with a huge rear wing to become the company office. It is considered a contributing element. Next door to the house/office is a frame garage with rooms above.

NUMBER AND STATUS OF CROWELL SAWMILL HISTORIC DISTRICT RESOURCES

Resource Number	Resource Name	Old Type	New Type	Old Status	New Status
1	Allen Crowell House	Building	No Change	Contributing	No Change
2	Garage Dependency of Co. Office Building	Building	No Change	Contributing	No Change
3	Company Office Building	Building	No Change	Contributing	No Change
4	Old Post Office	Building	No Change	Contributing	No Change
5, 6, 30 & 33	Sheds (4)	Buildings	No Change	Contributing	No Change
7	Commissary	Building	No Change	Non-Contributing	Contributing
8	Non-historic Post Office	Building	No Change	Non-Contributing	No Change
9, 10, & 12	Worker's Houses (3)	Buildings	No Change	Contributing	No Change
11	Garage to Worker's House	Building	No Change	Contributing	No Change
13	Long Leaf Baptist Church	Building	No Change	Contributing	No Change
14	Auxilliary Bldg. To Long Leaf Church	Building	No Change	Non-Contributing	No Change
15, 16, 17, & 19	Lumber Sheds (4)	Buildings	No Change	Non-Contributing	No Change
18	Non-historic Dry Kiln	Structure	No Change	Non-Contributing	No Change
20	Rough Lumber Yard Foreman's Office	Building	No Change	Contributing	No Change
21	Old Dry Kiln	Structure	No Change	Contributing	No Change
22	Non-Historic Turbine Bldg. For Mill	Structure	No Change	Non-Contributing	No Change
23	Sawmill	Building	No Change	Contributing	No Change
24 & 25	Boiler Houses to Sawmill (2)	Structure	No Change	Contributing	No Change
26	Water Tower	Structure	No Change	Contributing	No Change
27	Shipping Clerk's Office	Building	No Change	Contributing	No Change
28	Planing Mill	Building	No Change	Contributing	No Change
29	Planing Mill Engine House	Structure	No Change	Contributing	No Change
31	Round House	Building	No Change	Contributing	No Change
32	Machine Shop	Building	No Change	Contributing	No Change
34	Log Car Repair Shop	Building	No Change	Contributing	No Change
35	Log Car	Structure	Object	Contributing	No Change
36	Locomotive #106	Structure	Object	Contributing	No Change
37 & 38	McGiffert Log Loaders (2)	Structures	Objects	Contributing	No Change
39	Locomotive #202	Structure	Object	Contributing	No Change
40	Diesel Fuel Railroad Car	Structure	Object	Contributing	No Change
41	Locomotive #400	Structure	Object	Contributing	No Change
42	Clyde Log Skidder	Structure	Object	Contributing	No Change
43	Railroad Tracks	Not Counted	Structure	Not Counted	Contributing

Part 8:

Applicable National Register Criteria: A and C
Period of Significance: 1901-1945
Significant Dates: 1901, 1910, 1936, 1942-1945

Significance Statement

Introduction

Listed in 1993 (as mentioned at the beginning of this document) at the state level in the area of industry as one of a limited number of resources left to directly represent the great Louisiana lumber boom, the Crowell Sawmill Historic District contains the only surviving sawmill industrial component in Louisiana. However, further research by the Louisiana State Historic Preservation Office (SHPO) demonstrates that the facility is of national significance.

Older than the nation itself, the lumber industry is a national rather than a regional or state phenomenon. Over the years, thousands of individual sawmills and sawmill complexes utilizing ever-changing technologies have appeared on the American landscape. However, because of the industry's practice (known as the cut and run policy) of abandoning its cutover properties after salvaging equipment (and sometimes buildings) that could be reused elsewhere, little survives around the country to illustrate this extremely important industry. Aware of these losses, the Louisiana SHPO expressed in the 1993 Crowell nomination its belief that a case could be made for the complex as a nationally significant resource once the relevant research was conducted. That work is now complete, and the results confirm the SHPO's evaluation of Crowell's importance as a historical (Criterion A) and an architectural (Criterion C) artifact. The specific reasons for Crowell's importance will be developed below.

Criterion A: History

The Crowell Sawmill Historic District is nationally significant under Criterion A in the area of Industry because:

1) The property is a major and rare representative of lumbering -- a pioneer American industry (both an activity and an event) that has made a significant contribution to the broad pattern of national history. It is one of very few early twentieth century lumber production complexes left in the nation to illustrate that activity and pattern of events.

2) The mill provided very important and rare materials for construction of the landing craft that helped the Allies win World War II.

Both of these cases will be developed below.

Historic Context, Part I: Historic Overview of the Lumber Industry

The first migrants to English, French and Spanish colonial America found forests everywhere. Surprisingly, most felt this abundance of trees to be a curse rather than a blessing. Although they needed and used wood to build their houses, furniture, outbuildings, and handles for tools, they also destroyed many trees in order to plant cash crops and food.

The first use of American timber for a non-domestic purpose occurred when Captain John Smith of Jamestown fame exported tar and pitch from that colony to England in 1608. Known as naval stores, these products, along with turpentine, had previously been provided to European navies by Sweden. Jamestown followed this shipment with one of 80 pine masts for sailing ships in 1609. Although timber and lumber products would generally make up about five percent of the nation's exports throughout the nineteenth century, the industry's contribution to settling the country and its impact upon other sectors of the economy would prove to be far more important.

As more settlers arrived, enterprising men began to establish small sawmills to meet the need for building materials. Scholars now disagree over the location of the first sawmill. Jamestown and Richmond, Virginia; York and Berwick, Maine; and New Amsterdam (New York) all claim extremely early sawmills. Wherever that first mill was located, its workers would have used a pit saw to cut the logs. A pit saw was a long blade requiring two men for its operation. One stood on a platform above the log while the other stood in a pit below. With one pushing and one pulling the saw, the two men worked together to cut the log into boards. The pit saw evolved into the sash saw, which could be driven by a water wheel. According to author Stanley F. Horn, in *This Fascinating Lumber Business*, "The sash saw was an ingenious device with a single saw blade held rigidly in a vertical frame or sash which moved with an up-and-down motion." Sash saws powered by waterwheels, and sawmills located beside streams, would be the lumber industry standard for the next two centuries.

Most researchers agree that early pit and sash sawmills were usually considered local institutions. However, as the demand for lumber grew and mill owners used up their local timber, lumberman began to look for new sources of trees. As logging crews and sawmills spread throughout New England, a full-fledged and wide-ranging industry developed.

Gathering logs in the numbers needed to feed the demand for wood products proved to be a difficult and dangerous process. During the cutting season, teams of loggers lived in rough camps in the woods. They used primitive tools like axes to fell the trees and cut them into logs of manageable size, then utilized oxen to help them move the logs to nearby streams. When water levels in the streams grew high enough to handle the traffic, the crews tied the logs into rafts and floated them downstream. They eventually arrived at booms (storage areas located in harbors or at the mouths of rivers). Here men sorted the floating logs before sending them into the sawmill.

A different group of men handled the day-to-day operations of the small, fairly simple sawmill. Until the 1820s, they continued to use the water-powered sash saws in existence since the colonial era. However, in that decade the circular saw began to replace the sash saw. "As its name indicates, explains Stanley Horn, "it is a large steel disk with saw teeth in its circumference." Although it remained water-driven, the circular saw ran faster and more efficiently than the sash saw. In fact, Horn credits the circular saw with turning lumbering into a real industry.

Another technological advance – the completion of the Erie Canal in 1825 – opened western New York and Michigan to lumber industry development. As demand for timber continued to increase, the industry also

moved into Pennsylvania. As historian William G. Robbins, in *Lumberjacks and Legislators: Political Economy of the U.S. Lumber Industry, 1890-1941*, has explained:

> The movement of the logging frontier west (and south) is the most striking historical aspect of the lumber industry in the United States, at least until the twentieth century. Optimistic and reckless exploitation, economic boom and then disaster, characterized this westward push. When the timber resource was exhausted in one region, there were bigger and taller trees just beyond the ring of the woodman's ax – in the Great Lakes area beginning in the 1840s and the 1850s, in the great pine forests of the southland in the last quarter of the nineteenth century, and then on to the last great stand, the Douglas fir forests of the North Pacific slope, in the early twentieth century.

The perfection of the steam engine sped the need for opening new timber frontiers. Although invented before the beginning of the nineteenth century, early steam engines had problems that inventors had to remedy before industries requiring great amounts of energy could rely upon them. By 1869, however, steam powered 51 percent of the nation's sawmills. By 1909 steam accounted for 90 percent of the power in America's sawmills. Steam power allowed faster felling in the woods and much faster sawing and sizing in the mill.

The improvement of the steam engine also brought about an important change in the method of transporting lumber. Once inventors successfully applied steam engines to railroad locomotives, loggers could reach previously remote stands of timber, use railroad cars to haul cut logs to the sawmill, and ship finished products into the marketplace by rail. They could also construct larger, permanent mills and locate them closer to the timber supply. Thus, during the heyday of steam logging there were thousands of miles of track in operation around the nation and an amazing variety of locomotives at work in the woods. Before the invention of modern materials-handling machinery like conveyor belts, trucks, and forklifts, industrial railroads served as the prime movers of other industries as well.

The 1880s saw another technical innovation – the band saw -- that increased mill output even further. As Thomas R. Cox explains in *Mills and Markets: A History of the Pacific Coast Lumber Industry to 1900*,

> Band saws were huge loops of steel into which teeth had been cut and which were stretched tight between flywheels set above and below the log carriage. They presented a cutting edge long enough to carve through the largest log. Moreover, the band saw was faster [and] required less power.

Lumbermen found sawmills using band saws expensive to build but felt justified in doing so when they had a large and long-time supply of trees and long logs to cut. Although one band saw was considered the norm, many mills had two. As had other technical improvement before it, the band saw increased the speed with which loggers depleted a region's timber.

It was during the era of band saws and logging railroads that the lumber industry expanded into the South. The Southern coast had provided shipbuilding materials and naval stores for well over a century, and small water-driven sawmills had provided lumber for local and regional use. However, large-scale industrial lumbering could not reach the Southern pine forests until railroads opened them to development. The quality of the timber, low prices for available timberlands, nearness of the region to areas demanding lumber, and a climate that allowed timber harvesting and sawmill operation year round also lured northern lumbermen south. As author Nollie Hickman (*Mississippi Harvest: Lumbering in the Longleaf Pine Belt 1840-1915*) states,

"considerable numbers" of northern and eastern lumbermen responded to these attractions by moving south between 1890 and 1915.

Large-scale steam logging and sawmilling quickly became the dominant industries of the Deep South. As Stanley Horn explains,

> some [lumbermen] established themselves east of the Mississippi River, in Alabama and Mississippi, in a position to cater to the markets of the Central States; others bought timber west of the river – first in Missouri, then on down through Arkansas, Louisiana and Texas.... These west-of-the-river pioneers in the Southern pine field had a tendency to build up chains of sawmills, backed by extensive timber holdings.

The newcomers built large band sawmills with networks of logging railroads running through the countryside. Mills were more than numerous; in some regions there were steam sawmills every couple of miles. In larger communities, three or four mills might be found around the town perimeter. More isolated sawmills had their own company towns.

The review of a few production figures helps to reinforce the magnitude of this southern lumber boom. In 1906 The American Lumberman reported more than twenty southern sawmills producing sixty-thousand board feel of lumber per day. By 1908, according to Hickman, "some of the larger operators were producing from 35 million to 200 million board feet annually. At Bogalusa, Louisiana, the Great Southern Lumber Company sawmill, operating four band saws, produced one million board feet of lumber every day for more than twenty years. In 1909, the year the country's lumber production reached its apex, the South contributed forty-five percent of the 44.5 billion board feet of lumber reaching the market.

Historic Context, Part II: Importance of the Lumber Industry

The importance of the lumber industry to America rests upon two factors. First, the industry and its products ranked as leading contributors to the nation's economy for over three centuries. Second, until the close of the nation's frontier and the partially related decline of the industry in the 1920s and 1930s, it played an instrumental role in westward expansion and the bringing of "civilization" to newly opened areas.

As William G. Robbins explains, wood has played a "critical" role in keeping the American economy healthy for over three hundred years. "Until steel and other substitute construction materials began to replace wood in the late nineteenth century," he explains, "products from the forest constituted the indispensable raw materials..." that kept our economy growing. The multiple uses of wood, production and employment numbers, and production value figures all serve as excellent tools for measuring the economic impact of the industry.

The number and variety of products that are, or once were, manufactured from wood is astounding. Construction materials like studs, boards, plaster lathe, and molding are usually the first products that come to mind. However, Stanley F. Horn reminds us that "the lumber business is only one of the family of forest products industries ... whose basic raw material is wood." Many other items can result when wood moves further along the manufacturing chain. For example, other construction materials like siding, flooring, plywood, veneers, decorative trim, sashes, doors, and shingles all come from wood Other products manufactured directly from wood include, but are not limited to, telephone and telegraph poles, posts, pilings, fences, furniture, musical instruments, barrels, packing boxes, railroad crossties, matches, and handles. Further processing of

wood produces insulation, paint, synthetic rubber, wood plastic, glue, antifreeze, charcoal, cellophane, fertilizer, soaps and hand lotions, tanning extracts, and naval stores such as turpentine and resin. Additionally, wood can be processed to produce pulp, newsprint, other papers, and cardboard. Scientists continue to discover new uses for wood.

The list of former uses is also impressive. It includes, but is not limited to, spars, masts, and large timbers for shipbuilding; boats; industrial vats and tanks; cooling towers; bridges; railroad cars; spokes for wagon, buggy and even automobile wheels; car dashboards and steering wheels; golf club handles and heads; foundation piers; and celluloid. Finally, wood was (and occasionally still is) used as fuel for heating and cooking. Our nation could not be the prosperous and comfortable place it is today without these formerly and currently produced products.

Statistics profiling the lumber industry are just as impressive as the list of products that can be manufactured from timber. For example, sawmills turned out so much lumber that, by 1855, frame houses outnumbered log houses in New York state by eight to one, with one sawmill for about every 700 people. The hunger for lumber also saw per capita lumber consumption go from less than 100 board feet before 1840 to 506 board feet by 1906, and overall production of lumber go from 300 million board feet in 1799 to 44.5 billion board feet in 1909. The industry's employment figures are equally noteworthy. Because earlier censuses did not include the number of wage earners as a data category, the employment figures pertinent to this study begin in 1850. In that census, 35 states and the District of Columbia reported a total of 17,475 sawmills employing 51,218 men. By 1860 the numbers had increased to 20,658 establishments (including sawmills, planing mills and logging camps) employing 75,852 men. After examining the manufacturing census figures for 1870-1910, historian Joseph Zaramba proclaimed a seven-fold increase in employment. In *Economics of the American Lumber Industry*, he explained that the 1910 census recorded 44,000 establishments employing 702,000 men. Stanley Horn has also evaluated industry employment figures. He discovered that, in the 1940s, 845,300 men still worked in lumbering, and a total of 1,713,600 persons worked in the broader forest products industries field of which lumbering is a part.

The value of lumber products produced, and the increase of that value over the years, is as astounding as the increases in lumber industry production employment numbers. This is especially true when one remembers that these amounts reflect the value of the dollar at the time of statistics collection. Thus, they actually represented much more economic value and impact than the same numbers would today. James Elliott Defebaugh, editor of *The American Lumberman*, gathered early production value figures from the manufacturing censuses when he published the second edition of his comprehensive study of the industry, *History of The Lumber Industry of America* (1906). He reported the following values:

Census Year	Lumber Product Value
1840	$ 12,943,507
1850	$ 58,611,976
1860	$ 96,699,856
1870	$ 210,159,327
1880	$ 233,268,729
1890	$ 437,957,382
1900	$ 566,832,984

Another author, Elisha P. Douglass, gives us some perspective to help understand the enormity of these totals. In *The Coming of Age of American Business: Three Centuries of Enterprise, 1600*-1900, Douglass reports:

> The historian of lumbering, George W. Hotchkiss, has estimated that it "enriched the nation" and "added to its development" by over $4 billion during the sixty years through 1897, an amount exceeding by almost 50 percent the cost of the Civil War to the North and triple the value of all gold produced in California during the nineteenth century.

Along with its important role in the economy, the lumber industry played an indirect but vital role in settling and developing the nation. In fact, the industry and the settlement process were interdependent. Whether in the form of logs cut by pioneer settlers on the ever-moving frontier or boards produced by small, water-driven sawmills located beside streams, timber provided the most readily available material for home building in newly settled areas. When the need for construction materials removed all the trees in one place, loggers simply moved to another forested region. Settlers hungry for land and seeking new opportunities invariably followed, bringing their families with them. Of course, the lumber industry continued to supply the materials settlers used to build their homes and communities. As towns grew and lumbering continued to prosper, logging joined the civilizing influence of wives and children by financing civic improvements, churches, and local school systems.

The advent of the railroad strengthened the bond between lumbering and settlement. Because the railroad brought a new ease in travel and shipping, settlement expanded further and the market for timber products again increased. Thanks to the rails, far distant sawmills supplied lumber for the houses of farmers and families on the nation's treeless prairies. As the railroads carried more settlers west, building booms occurred and the need for lumber intensified again. Publicity about booming towns lured more residents to developing areas and persuaded capitalists headquartered in more settled regions to invest. The influx of funds caused even more building and an even larger need for lumber. This reciprocal relationship continued until the nation completed its westward expansion. The result, according to geographer Milton Newton (writing in *The Historic Settlement of Louisiana*), was that by 1910, "more than 94 percent of American homes were made primarily of wood." Stanley F. Horn reinforces this statistic. Between 1776 and the mid-1940s, says Horn, American lumbermen cut a total of 2,726,000 *million* board feet. Continues Horn, "That is a lot of lumber. It is enough to build 58,000,000 urban homes, 13,000,000 farmhouses, 2,000,000 schools and libraries, 650,000 churches and 450,000 factories."

Historic Context, Part III: Story of the Crowell Sawmill

Although Caleb T. Crowell was a native southerner, his lumbering activities were part of the late-nineteenth and early-twentieth century southern lumber boom generated mostly by northern businesses moving south. After establishing short-lived operations in Arkansas and northwest Louisiana, Crowell and partner Alexander B. Spencer founded a new sawmill and company town in Rapides Parish, Louisiana in 1892. This time they chose the right spot. Long Leaf, as it was called, had suitable high ground; a water supply; vast acres of easily accessible, old-growth timber; and a major railroad line nearby. Consisting of a planer mill and a sawmill with one primary circular saw, the men's first factory produced boards, planks, timbers, moldings and other millwork. Disaster struck in 1900 when a fire burned most of the mill complex to the ground. However, by the following year the company had built a new sawmill with, once again, only one circular saw.

Whether the company's industrial railroad began operation before or after 1900 is unclear. However, it was in existence in 1905 when the company created a separate short line company, the Red River & Gulf Railroad, to increase trackage, service, and revenue. The line eventually reached a length of about 75 miles.

In 1910 the company (now run primarily by Caleb's son, Stamps Crowell, while Spencer remained an inactive partner) significantly expanded by enlarging the sawmill and adding a band saw. It also constructed an adjacent boiler house and a new planer mill at this time. The railroad system needed constant maintenance and repairs, as did the sawmill, planer mill, and other industrial areas of the complex. To meet these needs, around 1918 the company constructed a railroad roundhouse, a machine shop capable of repairing and fabricating all kinds of equipment, and a car shop so Crowell workers could build railroad flatcars for log transport.

The southern lumber boom ended in the 1920s and 1930s when most companies cut out their timberland and then abandoned the South for greener pastures on the Pacific coast. However, Crowell managed to continue in operation and appears to have prospered until the Great Depression. Then, the company was lucky to stay in business. Production dropped 61 per cent between 1929 and 1932, and for several months the mill operated only two days per week. Production began to rise steadily in 1933, although it never reached its pre-Depression levels. By 1936 the company had enough money to make some substantial improvements. It built a new and larger dry kiln, added a second-hand, 400 horsepower steam boiler, and enlarged the fuel storage house. Some time in the 1930s, the company also replaced the roundhouse with a larger version.

With the original partners now deceased, in 1941 the Crowell family purchased the Spencer family's share of the business. Then Japan bombed Pearl Harbor and the United States entered World War II. From that point forward, a large percentage of the mill's production went to the war effort. At this time shipbuilders still used wood to construct the hulls and superstructures of warships, so the production of fine-quality timbers like those available from Crowell was critical. Although the company had other defense contracts, Higgins Industries of New Orleans ranked as its most important customer.

Andrew Jackson Higgins is recognized today as the man who invented and built the landing crafts that helped the Allies win the war. During the 1930s he developed an exceptionally rugged, shallow-bottomed workboat capable of navigating the swamps, marshes, and bayous of South Louisiana. This boat could be run aground and then be retracted (removed) from the bank without damaging its hull. Called the Eureka, it was safe, durable, and able to carry equipment and people through difficult terrain. It took several years (both before and after the start of the war) for Higgins to convince the United States Navy that the Eureka, with a ramp attached for loading and unloading, was the best choice to serve as the military's much-needed landing craft. However, Higgins finally succeeded and began building the boats, renamed the LCVP (Landing Craft Vehicle, Personnel) but known by the military and the press alike as "Higgins Boats," in his New Orleans factory.

Higgins built these boats using extremely high-grade yellow pine. As Melanie Torbett has explained in *Forests and People*, a publication of the Louisiana Forestry Association:

> Southern yellow pine was used in several areas of the boat, most importantly as the head log, the main member that ties the boat's bow together. This solid block of pine at the bow was the strongest part of the boat, enabling it to run at full speed over floating obstacles, sandbars and right up onto the beach without damaging the hull.

The material needed for the Higgins boats could be cut only from old-growth, long leaf yellow pine, which by the 1940s was a rare commodity. However, the Crowell sawmills at Longleaf and Alco (both in Rapides Parish but the latter now gone) still had stands of these trees. A May 17, 1943 letter from Nelson P. Brown, Jr. (Higgins' lumber purchasing agent) to R. D. Crowell, Jr. (copy attached) explains another reason why Higgins chose Crowell timber for the LCVP's most important component: "As you well know, the Higgins Industries

have always preferred the use of Crowell Long Leaf Yellow Pine. In fact, we find that with your lumber, it helps us to cut down our handling and reworking time, and increases production."

Although the Crowell sawmill was most likely supplying timber to Higgins before October 1942, in that month the New Orleans industrialist placed an order with the company for 300 pieces of 12 inch x 12 inch by 8 feet timbers for use as head logs in the landing crafts. More orders would follow. Although Higgins' orders were atypical for the sawmill and impractical to manufacture, R. D. Crowell, Jr. instructed his workers to start save the best lumber for Higgins. Crews began cutting as much high-grade lumber as possible from each Crowell log, sometimes destroying wood of lower grades to do so. In peacetime, the lumber destroyed in the manufacturing process could also have been sold for a profit. The Crowell family knew that these cutting practices, combined with the volume of material required, would exhaust their timber supply faster than would have occurred under normal circumstances but wanted to contribute to the war effort. As a member of the Crowell family stated in a letter to the federal Office of Price Administration in 1942, "...we only produce these grades for the Higgins Industries as a patriotic measure...."

Historians generally agree that Higgins LCVPs played a significant role in the outcome of World War II. As Higgins' biographer Jerry E. Strahan has explained,

> Thanks to Higgins [and his boats], the Allies no longer had to batter coastal forts into submission, sweep harbors of mines, and take over enemy-held ports before they could land an assault force. "Higgins boats" gave them the ability to transport thousands of men and hundreds of tons of equipment swiftly through the surf to less-fortified beaches, eliminating the need for established harbors.

The boats were used to transport

> fully armed troops, light tanks, field artillery, and other mechanized equipment and supplies essential to amphibious operations. It was these boats that made D-Day and the landings at Guadalcanal, Iwo Jima, Tarawa, Okinawa, Leyte, Guam, and thousands of lesser-known assaults possible. Without Higgins' uniquely designed craft there could not have been a mass landing of troops and material on European shores or the beaches of the Pacific islands, at least not without a tremendously higher rate of Allied Casualties.

It was Crowell's solid, old growth pine timber, and the company's willingness to sacrifice its already dwindling supply of trees to help build the boats, that gave Higgins' landing crafts the strength and ruggedness required to transport and land troops and equipment along challenging coastlines. Thus, the Crowell sawmill played a nationally significant, although generally unheralded, role in the Allied victory.

After the war, the Crowell complex continued to produce lumber. However, relatively little of the first-growth timber that had sustained the company for almost 60 years remained. The final standing tract, located in adjacent Evangeline Parish, lasted until 1954. As these trees were being harvested, the mill's management made the difficult and painful decision to close. They based this decision upon three factors. First, Crowell was unable to cut and run to a new location as previous lumber companies had done in the past because most of the virgin timber had been harvested throughout the nation. Second, the existing sawmill had been built for cutting large, long logs rather than the smaller second-growth timber that remained available. Finally, much of the old processing machinery was quite worn out and obsolete.

The mill closed on August 17, 1954. However, the complex's productive life was not yet over. The younger generation of the Crowell family decided to invest in modernization and reopen the mill complex. In addition to the changes they made to the physical plant (already discussed above), they also reorganized the company corporation and brought in trucks and tractors for moving men, logs, and other materials. In its new configuration, the sawmill operated from 1957 until early 1969. Production never rose above 15 million board feet per year and often totaled less than 10 million board feet annually during this period. Several years had marginal financial returns. Thus, on February 14, 1969, the family corporation made the decision to permanently close the mill. The planer mill operated for four additional months as it processed a backlog of rough lumber stock. It closed on June 6, with workers simply walking away and leaving everything in place.

Desire to preserve Crowell grew during the 1970s and 1980s as people realized the rarity and importance of a historic sawmill complex from the early industrial period with its equally historic equipment intact. After completion of a feasibility study, interested parties formed the Southern Forest Heritage Museum & Research Center in October 1992. This non-profit organization met its first goal in October 1994 when its officers accepted the donation by Crowell Lumber Industries of a 57-acre parcel containing all of the industrial complex, all the surviving lumbering and railroad equipment, and several non-industrial buildings from the now mostly vanished company town. After a year-and-a-half of cleanup and preparation, the museum opened to the public on May 1, 1996.

Criterion C: Design/Construction

The research conducted by the Louisiana SHPO also shows the Crowell Sawmill Historic District to be nationally significant under Criterion C: Architecture, Design/, and Construction because:

1. With its complete industrial component (including sawmill, planning mill, dry kiln, power-producing boilers and steam engines, etc.) intact, it is one of few period lumber production complexes in the nation surviving to represent the vernacular method of sawmill construction (known as "mill construction") that characterized the lumber industry during the early twentieth century.

2. The mill complex preserves most of the plant's industrial railroad, composed of rolling stock, three service buildings, and track. Additionally, the 1919 Clyde Log Skidder and two McGiffert Log Loaders, both considered pieces of railroad equipment, are exceptionally important and rare.

Vernacular Construction Method

Architecturally, the industrial facilities of the Crowell Sawmill Historic District are rare examples documenting the vernacular construction of early twentieth century steam sawmill complexes. The sawmill and planer mill buildings are especially important in this regard because they illustrates how lumbermen adapted what was then a common industrial building method to meet their special needs.

Crowell contains examples of almost all of the buildings that would have comprised the site of a large industrial steam-powered sawmill. These include the sawing building, old dry kiln, planer mill, shipping clerk's office, round house, log car repair shop, machine shop, and powerhouses for steam production. These buildings embody the distinctive characteristics of a type, period, and method of construction and are among the last of their type. Although some of the components may lack individual distinction, the ensemble represents a

significant and distinguishable entity that was once common but is now rare.

Built in the vernacular tradition, the buildings are concerned with function and ease-of-use rather than style. Primarily of wood frame and/or brick construction, they range between one and (in one case) three stories in height, have wood or concrete floors, have open-sided or metal covered walls, and culminate in wood-frame and metal-covered roofs. Additionally, the sawmill and planning mill exhibit a special form of construction known as "mill construction."

Fire was a serious threat to wooden industrial buildings like those at Crowell because they housed equipment that could generate sparks. Factory and mill owners constantly sought ways to protect their buildings from potential conflagrations. The difficulty of getting water to a fire before the era of water mains and fire hydrants caused them to focus upon supposedly fire-resistant methods of construction ("mill construction") rather than actual fire fighting. During the early years of the nineteenth century, the preferred method was to construct buildings of brick or stone. However, this was sometimes impractical, for the expense of importing these materials to sites lacking them was considerable. Additionally, lumber industry workers could not disassemble and move stone or brick buildings to new places (the general practice) when the supply of local timber dwindled. By the late 1800s builders of industrial facilities like Crowell had focused upon the idea of "slow burning" construction. Instead of using brick or stone, this process used strong, durable and slow-burning timbers to create heavy plank floors, non-combustible walls composed of thick wooden columns and beams, and roof joists massed into larger beams that (it was believed) would resist the flames long enough for workers to extinguish them. "Slow burning" construction was considered to be superior in fire-resistive qualities to ordinary brick or masonry construction with wood joists.

Slow burning mill construction became the standard for most industrial facilities. At first, however, it proved to be impractical for timber processing. Sawmills required large open spaces to accommodate the gigantic logs being cut at that time from still-available first growth timber. However, mill construction used numerous interior posts to support a building's roof. The answer was to construct roofs using large wooden trusses instead of joists. Because trusses could carry more weight, they minimized the number of interior posts needed. Without numerous posts to inhibit log handling, the process of converting huge logs into lumber was easier to accomplish. Crowell's sawing building displays this important innovation.

Industrial Railroad System

In addition to the national significance of the entire Crowell Sawmill complex, the district's surviving industrial railroad network is also nationally significant. As previously described, it includes track, support facilities, the two McGiffert Log Loaders, the incredibly important Clyde Log Skidder, and other rolling stock. All of these elements are mentioned in the 1993 nomination as contributing elements except the track. However, it is also located within the boundaries of the historic district and appears on the site map accompanying the 1993 narrative.

The railroad's significance is based upon the following:

1. Railroads that served factories and connected to main lines could be found at most large early-twentieth century industrial sites. Today, except for their continued use in the mining industry, industrial railroads and accompanying support facilities like those found at Crowell have almost vanished from the United States. Other than Crowell, only three of these historic sites remain in

anything that resembles their original early twentieth century configurations. The East Broad Top Railway and Coal Company sites (scattered between Robertsdale and Orbisonia, Pennsylvania.) and the Nevada Northern Railway/Nevada Consolidated Copper Company mines and shops (at Ely and East Ely, Nevada) are both mining sites with their associated railroad operations. Both preserve large, early 1900s, railroad shop complexes as the centerpieces of their preservation effort and feature rides behind a steam locomotive. The West Virginia Pulp and Paper Company (now Cass Scenic Railway State Park) at Cass, West Virginia is a logging site that preserves much of the old company town, railroad and steam locomotives. It also features a train ride behind one of the old logging locomotives. However, its railroad shop is a modern facility.

2. During the early twentieth century machine shops for hundreds of small industrial railroads must have existed. Yet today, only three such historic machine shops (the ones just mentioned in Pennsylvania and Nevada, and the one at Crowell) still exist in the entire country. Reinforcing this rarity are the facts that 1) the roundhouse and car shop also survive nearby and 2) the machine shop's machines and tools remain in place. Again, this nomination update is not arguing for contributing element status for the tools within the machine shop. However, their existence allows proper interpretation of the building and vastly increases its rarity and importance.

3. The Clyde Log Skidder is incredibly rare and important. Steam skidders mechanized much of the log-hauling job, pulling out logs at eight miles per hour. Because they were very productive, skidders were popular among lumber companies. The Clyde Iron Works, one of the major American manufacturers of quality steam logging machinery, sold at least 61 to Louisiana lumber companies alone between 1906 and 1928. Hundreds must have been manufactured and sold across the nation. However, Crowell's double-ended rehaul model is the last surviving skidder anywhere. According to Robert L. Johnson, who is also an expert on historic railroad equipment (logging and otherwise), "The Clyde is unique; it is in good restorable condition; its historic value is beyond price."

4. Although not as rare as the skidder, McGiffert Log Loaders are also very scarce. As previously mentioned, Crowell has two of these machines. Lumbermen preferred the patented design of the McGiffert Log Loader because the machine could load logs at any point on a logging railroad without using a spur or sidetrack or tying up a skidder for the purpose. Thus, if the identification number on the builder's plate is correct, Clyde built over 1200 of these machines. However, Crowell's two are among only six known to exist in North America. Others in the United States are located at the Lake Superior Transportation Museum in Duluth, Minnesota, and at the Camp 6 Logging Museum in Tacoma Washington. Canada and Mexico have one McGiffert each. Robert L. Johnson describes Crowell's two McGifferts as "quite rare items and objects of much interest today." Concerning the rarity of the skidder and the log loaders, Johnson confirms that "The number [of examples] of steam rail-mounted machinery in general that is in preservation in America -- cranes, snowplows, yarders, loaders and skidders, etc. -- can be counted on the fingers of a couple of hands."

Although it cannot be denied that many historic locomotives of various types exist throughout the nation, experts consider at least two of the three at Crowell to be rare and important. Although the Rushton (or cabbage) stack like that found on Locomotive # 202 was the most popular of the commercially produced spark-arresters attached to steam engines, few of these stacks survive today since the sheet steel of which they were constructed is short-lived out in the weather. Additionally, ten-wheel locomotives like #400 are significant because experts consider this type scarcer than other types of railroad engines. Finally, most surviving locomotives do not remain in their historic settings. Nor do they continue to reflect the historic industries of

which they were once a part.

Rarity of the Crowell Sawmill Complex
(Applies to both Criteria A and C arguments)

If it were possible to count the number of sawmills and sawmill complexes that have existed throughout the history of the United States, the number would certainly be in the tens of thousands, if not more. However, few historic examples (more than fifty years old) remain today. Significantly, even fewer survive from the early twentieth century -- the period when major technological innovations and an ever-increasing demand for lumber together fed the great American lumber boom and depleted the forests of the South. A major reason for this scarcity is the sawmill industry's cut-and-run policy, in which (as explained earlier) companies moved to new sites after cutting out all their virgin timber and salvaging buildings and equipment that could be reused elsewhere. Weather and vandalism eventually caused those industrial buildings abandoned and left-in-place to deteriorate to the point of loss. Additionally, Robert L. Johnson (an expert appraiser of antique steam-powered machinery who knows what historic lumbering equipment survives) has identified other important reasons for the losses. For example:

1. Some companies made it a practice to buy older sawmills, rebuild them for resale, and export them outside the United States. Furthermore, some machinery was built of individual components that could be salvaged for resale.

2. Much antique machinery was made of cast iron, brass, or copper, all of which still has considerable value as scrap material.

3. The litigiousness of modern society and the many adverse decisions in the courts have caused owners of historic sawmills and equipment to destroy them in order to prevent being sued for damages by persons injuring themselves while illegally trespassing on the sites.

4. Many lumber companies with older plants, as well as companies representing other industries, have been forced to modernize, move abroad, or go out of business. As a result, a massive number older American industrial companies was lost between 1970 and 1989.

The Louisiana SHPO used several methods to confirm this rarity. These included:

1. posting a query on the National Register Coordinators List Serve,

2. publishing a query in the fall 2007 issue of the Society for Industrial Archaeology Newsletter, and

3. telephone calls to National Register staff members of states that did not respond to the list serve query.

Using these methods, the SHPO successfully gathered data from over forty of the fifty states in the nation. (Unfortunately, a few states did fail to respond to repeated requests for information.) The results of the survey are telling.

1. Many states emphatically stated that nothing of the sawmill industry remains within their boarders.

2. Others said they do not know what might remain because they have never made this subject a priority of their survey programs.

3. Searches in the databases of states that have computerized their surveys, using the word "sawmill" as the search topic, retrieve a confusing and incomplete list of entries that contain that word somewhere in a brief description. Upon review of the little information available for these entries, most prove to be describing:

    a. modern sawmills (sometimes less than fifty years old).

    b. historic houses built using the products of a sawmill.

    c. (especially in Massachusetts) historic small, water-powered sawmills that once provided lumber for local markets. Because these have been adaptively reused, their historic integrity is in question.

    d. archaeological sites.

    And, in those few entries that describe resources that might be comparable to Crowell, there is no confirmation that they actually survive.

4. Many surviving historic sawmills date to the age of water-driven lumbering. Although these are obviously important, Crowell represents something different – the age of industrial lumbering based upon early twentieth century technology.

5. Whether early water-driven or later industrial sawmills sites, most that survive usually consist of only one building or one accompanied by an outbuilding. In dilapidated condition, these often exhibit very little evidence of their original function.

The conclusion of this research is that large sawmills and sawmill complexes from the early twentieth century boom period have generally not been preserved, and those with historic equipment are even more rare. Eight other states appear to have historic sawmills the approximate age of Crowell and some retain historic equipment. However, only one – the Ralph Hull Lumber Company Mill Complex in Oregon – appears to match the Louisiana complex in age, completeness and integrity. Although Crowell and Hull both represent a single industry, they are located in different regions, processed different species of trees, and served different consumers.

Conclusion

In addition to the rare buildings and industrial railroad surviving at Crowell, the facility also contains an example of virtually all of the machinery contemporary with the early twentieth century era of steam-powered lumbering. Although no claim is being made for contributing element status for this equipment (excepting the Clyde Log Skidder, McGiffert Log Loaders, and the three railroad locomotives), the Louisiana SHPO believes that the variety, and the equipment's existence as an ensemble of early twentieth century tools in their original settings, do reinforce the significance of the Crowell complex and contribute to its rarity. It is because of this equipment that the Board of Directors of the Society for Industrial Archeology (SIA) has unanimously endorsed

Louisiana's effort to designate Crowell as nationally significant. In a February 2008 letter to State Historic Preservation Officer Pam Breaux, SIA president Robert C. Stewart said,

> About 100 of our members, including myself, visited the Crowell Sawmill Historic District in 1997. We were positively impressed with the steam-powered logging and milling equipment....The machinery is a comprehensive, rare and unique collection of equipment used in timber operations and lumber milling.

Because little attention has been paid to steam-powered sawmills in the past, knowledge of the industry's specialized machinery and practices will die if not preserved in places like Crowell. With its intact equipment, buildings, and setting, the district is one of the best sites to document the large-scale, steam-powered logging and lumber industry that characterized the nation during the lumber boom of the early twentieth century. Now operating as the Southern Forest Heritage Museum, it provides visitors a unique view of a largely by-gone operation – steam sawmilling. It fulfills its educational purpose through tours for vacationers, programs related to forestry, and a thriving relationship with the Rapides Parish School District that will eventually result in a visit by all 24,000 of the district's students. Additionally, an increasing number of schools from surrounding Central Louisiana Parishes are sending students to the site. In the last three years, admissions at the Museum have doubled each year.

In conclusion, due to its historical and architectural significance as described above, the Crowell Sawmill Historic District qualifies for national significance for two reasons. Under Criterion A, in the area of Industry, it exemplifies the modern industrial business of lumbering in the early twentieth century and illustrates the cutting, transportation, and finishing of raw lumber products. It also served as an important supplier to a key World War II defense industry. Under Criterion C, Architecture, it is a surviving industrial complex with examples of industrial type buildings, objects, and structures that as an ensemble are a rare, distinct, and exceptional entity.

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Interview with Everett Lueck, conducted by Patricia Duncan of the LASHPO, March 27, 2008. Lueck has studied the history of sawmills and their railroads for a number of years and has a network of acquaintances around the nation who share his passion and scholarship. Although knowledgeable about industrial railroads on a national level, he specializes in the history of sawmills and their railroads in Louisiana and East Texas.

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Part 11: Form prepared by:

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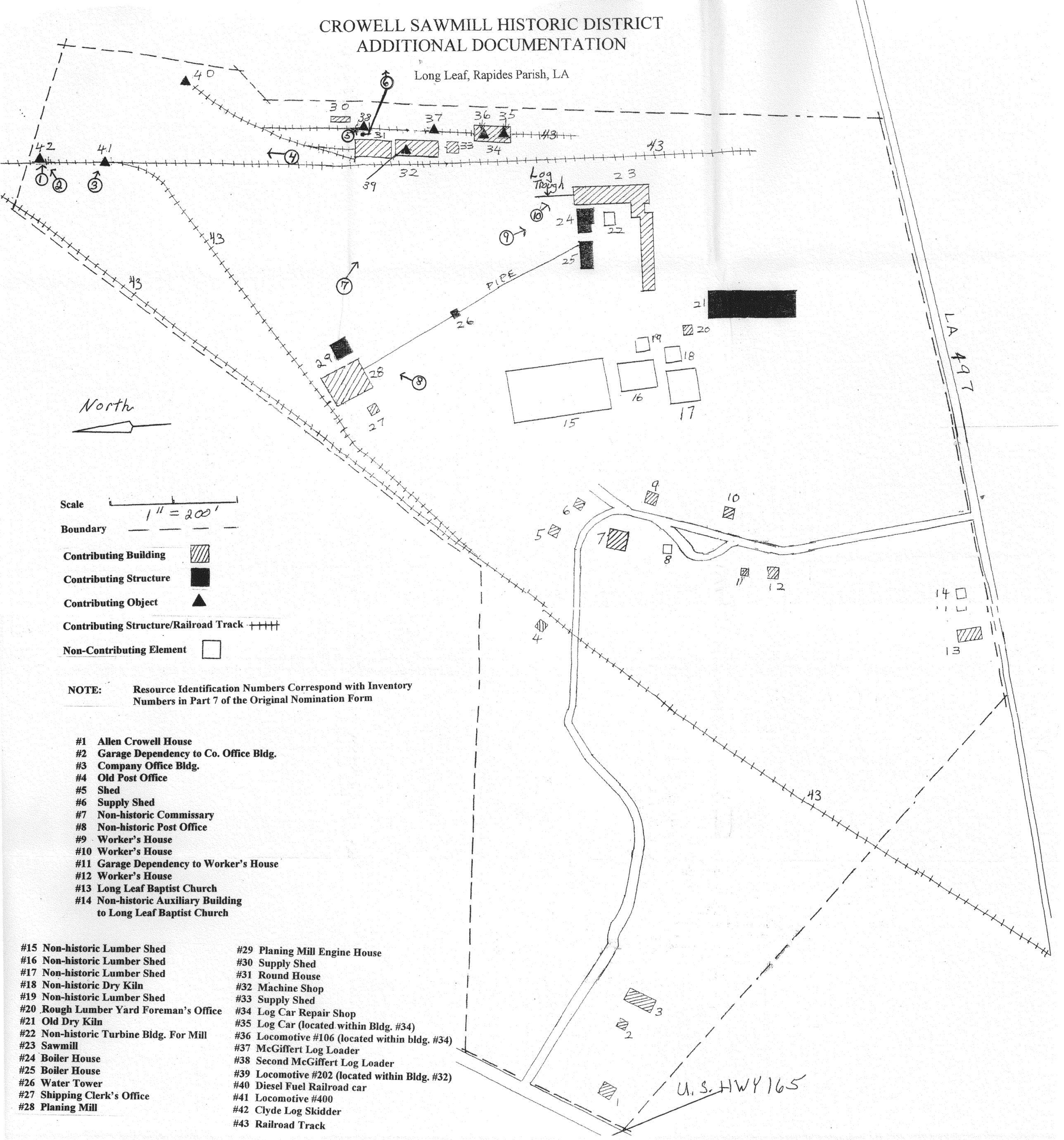
CROWELL SAWMILL HISTORIC DISTRICT
ADDITIONAL DOCUMENTATION

Long Leaf, Rapides Parish, LA



NOTE: Resource Identification Numbers Correspond with Inventory Numbers in Part 7 of the Original Nomination Form

#1 Allen Crowell House
#2 Garage Dependency to Co. Office Bldg.
#3 Company Office Bldg.
#4 Old Post Office
#5 Shed
#6 Supply Shed
#7 Non-historic Commissary
#8 Non-historic Post Office
#9 Worker's House
#10 Worker's House
#11 Garage Dependency to Worker's House
#12 Worker's House
#13 Long Leaf Baptist Church
#14 Non-historic Auxiliary Building to Long Leaf Baptist Church

#15 Non-historic Lumber Shed
#16 Non-historic Lumber Shed
#17 Non-historic Lumber Shed
#18 Non-historic Dry Kiln
#19 Non-historic Lumber Shed
#20 Rough Lumber Yard Foreman's Office
#21 Old Dry Kiln
#22 Non-historic Turbine Bldg. For Mill
#23 Sawmill
#24 Boiler House
#25 Boiler House
#26 Water Tower
#27 Shipping Clerk's Office
#28 Planing Mill

#29 Planing Mill Engine House
#30 Supply Shed
#31 Round House
#32 Machine Shop
#33 Supply Shed
#34 Log Car Repair Shop
#35 Log Car (located within Bldg. #34)
#36 Locomotive #106 (located within bldg. #34)
#37 McGiffert Log Loader
#38 Second McGiffert Log Loader
#39 Locomotive #202 (located within Bldg. #32)
#40 Diesel Fuel Railroad car
#41 Locomotive #400
#42 Clyde Log Skidder
#43 Railroad Track