NPS Form 10-900 (Rev. 10-90)

United States Department of the Interior National Park Service

NATIONAL REGISTER OF HISTORIC PLACES REGISTRATION FORM

This form is for use in nominating or requesting determinations for individual properties a Mariantis 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 any 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

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narrative items on continuation sheets (all items.	gories and subcategories from the ins	structions. Place additional entries and word processor, or computer to complete
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historic name: Two Spot Logging Tra		
	omotive #35938; AL&T #25; BLW 10-3	
2. Location		
street & number: No #; SE corner of Sa city or town: Flagstaff	county: Coconino code: 005	not for publication: _N/A_ vicinity: _N/A_ zip code: 86001
3. State/Federal Agency Certification		
As the designated authority under the N X nomination request for deproperties in the National Register of His 36 CFR Part 60. In my opinion, the recommend that this property be considered for additional comments.)	National Historic Preservation Act of 198 etermination of eligibility meets the distoric Places and meets the procedural as property X meets Acc does not	36, as amended, I hereby certify that this locumentation standards for registering and professional requirements set forth in meet the National Register Criteria. I ewideX_ locally. (See continuation
Signature of certifying official	77.SHPO	27 / 1007 / 189 Date
Signature of certifying official APLIZONA STATE A State or Federal agency and bureau	PARKS	
n my opinion, the property meets for additional comments.)	does not meet the National Regis	ter criteria. (See continuation sheet
Signature of commenting or other official State or Federal agency and bureau	al .	Date
State of redefal adency and bureau		

Number of contributing resources previously listed in the National Register __0_

Name of related multiple property listing: "Logging Railroad Resources of the Coconino and Kaibab National Forests, Arizona"

Criteria Considerations (Mark "X" in all the boxes that apply.)

E a reconstructed building, object, or structure.

____ B removed from its original location

F a commemorative property.

C a birthplace or a grave.

D a cemetery.

A owned by a religious institution or used for religious purposes.

G less than 50 years of age or achieved significance within the past 50 years.

Primary Location of Additional Data

___ State Historic Preservation Office

___ Other State agency

___ Federal agency

___ Local government

X University

_ Other

Name of Repository: Special Collections & Archives, Cline Library, Northern Arizona University, Flagstaff, AZ 86011

Logging Railroad Resources of the Coconino and Kaibab National Forests MPDF

Two Spot Logging Train Coconino County, Arizona

10. Geographical Data

Acreage of Property __less than one acre___

UTM References (See accompanying USGS map for point references)

Zone 12 441170*E* 3894840*N*

Verbal Boundary Description

The nominated property consists of Baldwin Locomotive #35938 with attached tender and log carrier car, located near the southeast corner of San Francisco Street and U.S. Route 66 in Flagstaff, Arizona, within Coconino County Tax Parcel #101-27-001C.

Boundary Justification

The boundary is drawn to include the structure consisting of the historic locomotive, tender, and log carrier car (all owned by the City of Flagstaff) and to exclude the land under and immediately surrounding it (owned by the Burlington Northern Santa Fe Railway Company).

11. Form Prepared By

name/title: Pat Haigh Stein

organization: Arizona Preservation Consultants date: December 1998 street/number: 6786 Mariah Drive date: December 1998 telephone: (520) 714-0585

city or town: Flagstaff state: AZ zip code: 86004

Additional Documentation

Continuation Sheets (pages 6-13)

Maps

A USGS map (7.5 or 15 minute series) indicating the property's location (Figure 1).

Photographs

Representative black and white photographs of the property (Photos 1 through 3).

Historical photograph showing the train in operation (Photo 4)

Additional items

Specification sheet for BLW 10-30 E 123 (Attachment 1)

Property Owner

name: City of Flagstaff

street & number: 211 West Aspen Avenue telephone: (520) 774-5281

city or town: Flagstaff state: Arizona zip code: 86001

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NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET

Section __7_ Page _6_ <u>Two Spot Logging Train</u> <u>Coconino County, Arizona</u>

Multiple property listing: "Logging Railroad Resources of the Coconino and Kaibab National Forests, Arizona"

DESCRIPTION

SUMMARY

Two Spot is a logging train consisting of Baldwin Locomotive #35938 plus tender and log carrier car (Photos 1 through 3). The steam locomotive was constructed in 1910 and early 1911 by the Baldwin Locomotive Works (BLW) of Philadelphia, Pennsylvania, for the Arizona Lumber & Timber Company (AL&T) of Flagstaff, Arizona. The locomotive bore the number "25" in the AL&T roster. It was called Two Spot because a water bag hanging from its cab obscured and eventually obliterated the number "5" and also because later owners changed its roster number to "2." The standard gauge 2-8-0 steam locomotive was used by the AL&T, the Saginaw & Manistee Lumber Company, Southwest Lumber Mills, and Southwest Forest Industries for operations in the Flagstaff area until retired from service in 1966. Possessing good integrity, the locomotive, tender, and carrier car qualify for the National Register as examples of the property type "rolling stock" in the multiple property form entitled "Logging Railroad Resources of the Coconino and Kaibab National Forests, Arizona" (Stein 1993). In the present nomination, the train is counted as a single structure having three contributing elements: the engine, tender, and log carrier car.

Location and Setting

Situated in downtown Flagstaff (Figure 1), Two Spot is surrounded by the ponderosa pine forest it once harvested. The locomotive was built in 1910 and 1911 to haul logs and lumber in the Flagstaff area, and that city has been its home ever since. Following retirement in 1966, the engine, tender, and log carrier car remained on the grounds of a local lumber mill for nearly three decades. When a west coast firm purchased the train in 1995, a consortium of local businessmen and history buffs quickly stepped in to purchase the structure and keep it from leaving the area. The group arranged with the City of Flagstaff to buy the train. The City meanwhile negotiated a cooperative agreement with Burlington Northern Santa Fe Railway to restore the historic Santa Fe Freight Depot (listed as a contributor to the Railroad Addition Historic District in 1983) and link that facility to the urban trails system. As part of that project the City has placed Two Spot on permanent display on railroad land east of the depot. The train has become a focal point of the restoration effort. Moreover, the siting preserves the train's integrity of setting and location, since part of its historic function was to haul lumber from local mills to the depot for transfer and shipment to distant markets.

Description

Baldwin Locomotive Works/BLW began building the oil-powered steam engine with tender in 1910, completed it in January of 1911, and outshipped it on January 20, 1911 (Northern Arizona Pioneers Historical Society/NAPHS Ms 47). At the time, BLW was one of the most experienced and successful locomotive builders in the world. Matthias W. Baldwin, a jeweler-turned-machinist, had founded the company in the 1830s, and it had experienced steady growth

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during the nineteenth and early twentieth centuries. The 1911 Flagstaff shipment marked the 35,938th engine that BLW produced. Before closing in the mid 1950s, the company would manufacture some 30,000 additional ones (Westing 1966; Letson 1991).

In its order and drawing system, BLW referred to the Flagstaff engine as "10-30 E 123." The code translated as follows:

- "10" was the total number of wheels;
- "30" was a code for the cylinder diameter; in this case it meant 18-inch diameter cylinders;
- "E" referred to four pairs of driving wheels; and
- "123" was the sequence number in the class; that is, the AL&T locomotive was the 123rd example of this class (Glover 1998).

Class 10-30 E was a light-to-medium weight freight locomotive of the period. It made a solid narrow-gauge freight hauler, as demonstrated by the 50 examples that BLW sold to the Japanese mainline railways. It was also popular in standard gauge, a version used in constructing the El Paso & Southwestern from Bisbee to El Paso (Glover 1998). In terms of wheel arrangement, Baldwin #35938 was a Consolidation 2-8-0 type locomotive, meaning that it had one pair of pilot (truck) wheels, four pair of drive wheels, and no trailing axle wheels (Ziel 1963).

An extremely detailed description of the locomotive and original tender is contained in its specification sheet (Attachment 1; NAPHS Ms 70). Railroad scholars including Vernon J. Glover have noted a curious anomaly in the spec sheet, which lists 1916 rather than 1910-1911 as the date of construction. The 1916 date clearly appears to be in error; BLW-AL&T correspondence, the serial numbering system used by Baldwin, and the manufacturer's plate affixed to the engine leave virtually no doubt that Locomotive #35938 was completed in 1911. The reason for the spec sheet error is unknown; Glover postulates that a reason as trivial as typist's error may be at fault (Glover 1997).

The tender now attached to the locomotive is not the original one. The original, straight-top tender remained attached to #35938 to at least 1958 (DeWald 1958). When the locomotive belonged to Southwest Forest Industries in the late 1950s, Master Mechanic Jim Brown removed the straight-top tender and placed it on a different engine to give that engine greater fuel capacity for its runs to Allan Lake, southeast of Flagstaff (Malcolm Mackey, personal communication). That engine with tender is now on display at the Pioneers Historical Museum in Flagstaff. Brown replaced #35938's tender with a slope-back "switcher" tender that gave the brakeman greater visibility; the slope-back tender is still attached to #35938 and is the one nominated in this documentation. The construction date for the slope-back is not precisely known. However, a plate on the body of the slope-back suggests it was manufactured during or shortly after 1923 and that it was first used by the Atchison, Topeka and Santa Fe Railway. By the late historic period, the slope-back tender was used with various locomotives that were hauling timber in the Flagstaff area.

The log carrier car is approximately 45 ft long, 10 ft wide, and has four sets of staves that secured logs during transport. Local mills could handle logs having a maximum length of 32 ft; the car's draft gear (couplers and end sills) projected several feet behind the logs (Mackey 1995). The car's exact date of construction is not known. Cast into its

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body is the alpha-numeric sequence "U 1767-CCS-1530," the meaning of which could not be determined during the present study. Prior to retirement in 1966, the car routinely would have been switched among several locomotives hauling timber in the Flagstaff area. From at least 1966 to the present, the car has been attached to locomotive #35938. The car likely was constructed prior to 1945; after that year, local logging companies made little capital investment in rolling stock.

Integrity

The train retains good integrity of location, design, setting, materials, workmanship, feeling, and association. Its dominant element is the locomotive, which possesses excellent integrity. The biggest change to it was the installation of a new firebox in 1950 (Glover 1966). This modified neither the exterior appearance nor workings of the engine. The tender is not the original one, but is of historic vintage, was used in the Flagstaff area for timber harvesting, and is technologically compatible with the locomotive. The structure meets the "Registration Requirements" for the property type "rolling stock" as stated in the 1993 MPDF "Logging Railroad Resources of the Coconino and Kaibab National Forests, Arizona."

Contributing Resources

The logging train is counted as a single structure comprised of three contributing elements: Baldwin Locomotive #35938, the tender, and the log carrier car. Each enhances the historic character of the property as a whole. In its period of historic use, the log carrier car was switched among several locomotives and was not used exclusively with #35938. The car contributes to the property currently under nomination by conveying, in a highly visual manner, the notion that the train was used for transporting *logs* rather than other commodities.

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Section __8_ Page _9_ <u>Two Spot Logging Train</u> Coconino County, Arizona

Multiple property listing: "Logging Railroad Resources of the Coconino and Kaibab National Forests, Arizona"

SIGNIFICANCE

SUMMARY

Two Spot logging train is eligible for the National Register at the local level under Criteria A and C. It dependably served the lumber industry of northern Arizona for 55 years. In helping its various owners harvest ponderosa pine from the forests surrounding Flagstaff, the train contributed to the historically dominant industry of the region. The property is also significant for its engineering. The locomotive accurately reflects the workings and configuration of a Consolidation 2-8-0 engine of Baldwin class 10-30 E, a once common but now rare type. With its steam-powered locomotive, tender, and log carrier car, Two Spot embodies the distinctive design characteristics of a now-obsolete technology. The property's period of significance begins in 1911 when the locomotive was completed and shipped to Flagstaff. The period extends to 1949 to indicate the property's continuing importance through the end of the "historic" era (as defined by the National Register).

Historical Background: Significance under Criterion A

In the early twentieth century, the Arizona Lumber & Timber Company/AL&T (founded in 1887 as the Arizona Lumber Company) began cutting the area around its Greenlaw mill three miles east of Flagstaff. By 1908-1909, AL&T had harvested timber east of the mill and faced the prospect of cutting west, south, and north of it (Stein 1993). Company president Timothy A. Riordan saw the need to expand his company's roster of engines to accommodate the Greenlaw operation, and contacted Baldwin Locomotive Works/BLW about the possibility of building a new locomotive. After weighing the relative merits of a geared versus ungeared engine, Riordan settled on the latter and placed his order with BLW in late summer of 1910 (NAPHS Ms 47).

Riordan ordered a Consolidation 2-8-0 engine of Baldwin class 10-30 E (see Section 7 for explanation of terms). His logging engineers insisted that an option be added to the order: the driving wheels of the locomotive had to be flanged, providing greater traction for the terrain of northern Arizona. The special wheels, plus the engine roster number, are referenced in Riordan's letter to BLW dated November 15, 1910:

We [AL&T] are glad to note in your [BLW's] letter of the 11th that you now do not think the work on the engine you are building for us will be seriously delayed in consequence of providing flanged tires for the intermediate pairs of driving wheels, and appreciate your efforts to hurry delivery of the same....By the way, my attention has just been called to the number we gave you to put on this engine, "23" as being undesirable, and we have decided to change the number to "25." Please arrange accordingly and let us know (NAPHS Ms 47).

BLW completed the locomotive in January of 1911 and outshipped it on the 20th of that month. A Mr. Taylor was the engineer in charge of the cross-country delivery. The AL&T received the locomotive in February and

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immediately placed #25 in service at the newly-rebuilt Greenlaw mill. Pleased with his purchase, Riordan remitted payment of \$11,220 to BLW on April 19, 1911 (NAPHS Ms 47).

AL&T Locomotive #25 proved to be the "little engine that could" (Vernon Glover, personal communication). It delivered 55 years of service, helping Flagstaff maintain its position as a leading producer of lumber in the Southwest. AL&T used the engine continually until 1941. Beginning in that year, the company leased its Flagstaff mill and equipment (including Locomotive #25) to the Saginaw & Manistee Lumber Company, which then held contracts to cut timber south of Mormon Lake (Stein 1993). To harvest the wood, Saginaw & Manistee re-engineered an old AL&T line, extended it to Allan Lake, and used engines including #25 to transport logs back to Flagstaff. Southwest Lumber Mills took control of the AL&T and Saginaw's lease beginning in 1952. Southwest Lumber and its successor, Southwest Forest Industries, continued to operate the Allan Lake extension until 1966 (*Arizona Daily Sun*, March 31, 1966). Locomotive #25 made the last run of a logging train in the Flagstaff area, an event that occurred on August 17, 1966 (Glover 1966). In 1967, Southwest Forest pulled the iron from the Allan Lake line, thus officially ending the era of railroad logging on the Coconino and Kaibab National Forests.

Locomotive #25 first acquired its more common name of "Two Spot" because its engineers used to suspend from the cab a water bag that obscured and eventually obliterated the number "5" (see Photo 4). According to Glover (1967), circa 1951 Saginaw & Manistee renumbered the engine as "2," the number it retained under subsequent Southwest Lumber and Southwest Forest ownership. The engine has since been repainted with its original AL&T roster number of "25."

Engineering Background: Significance under Criterion C

Once a hallmark of the lumber industry, logging trains such as Two Spot are now extremely rare. The historic context prepared for the MPDF "Logging Railroad Resources of the Coconino and Kaibab National Forests, Arizona" estimated that about 30 logging locomotives operated at various times (circa 1887 to 1966) in the greater Flagstaff area. Most were sold for scrap iron during World War II. Only two -- Baldwin #35938 and #60870 -- have survived to the present day. Of the two, #35938 is the older, predating #60870 by 18 years; #35938 is, in fact, the only surviving pre-World War I logging locomotive left in the Flagstaff area. The structure accurately reflects the engineering and configuration of a Consolidation 2-8-0 engine of Baldwin class 10-30 E, a once common but now rare type. With its steam-powered locomotive, tender, and log carrier car, Two Spot embodies the distinctive design characteristics of a technology that is now obsolete.

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Section __9_ Page _11_ <u>Two Spot Logging Train</u> Coconino County, Arizona

Multiple property listing: "Logging Railroad Resources of the Coconino and Kaibab National Forests, Arizona"

MAJOR BIBLIOGRAPHICAL REFERENCES

Arizona Daily Sun

1966 Railroad Quits Operation. *Arizona Daily Sun*, March 31, 1966, p. 15. Microfilm copy on file, Special Collections and Archives, Cline Library, Northern Arizona University, Flagstaff.

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1958 All Aboard the Scenic Choo-Choo. *Arizona Days & Ways* (the *Arizona Republic* magazine), July 13, 1958:cover and 34-35.

Glover, Vernon J.

- 1966 Saginaw and Manistee Lumber Company Railroads and Locomotives. Copy of manuscript on file, Arizona Preservation Consultants, Flagstaff.
- 1997 Letter dated December 27, 1997 to Malcolm Mackey. Copy on file, Arizona Preservation Consultants, Flagstaff.
- 1998 Letter dated November 22, 1998 to Pat Stein. Copy on file, Arizona Preservation Consultants, Flagstaff.

Letson, Dawn

1991 (Guide to) Baldwin Locomotive Works Erecting Drawings at the DeGolyer Library, Southern Methodist University. Copy on file, Arizona Preservation Consultants, Flagstaff.

Mackey, Malcolm

1995 Letter dated February 13, 1995, to the City of Flagstaff. On file, Community Development, City of Flagstaff.

Northern Arizona Pioneers Historical Society/NAPHS

- var. Outgoing Correspondence. NAPHS Ms 47, Arizona Lumber & Timber Company Collection. Special Collections and Archives, Cline Library, Northern Arizona University, Flagstaff.
- var. Folders 39, 41a, and 41b. NAPHS Ms 70, Malcolm Mackey Collection. Special Collections and Archives, Cline Library, Northern Arizona University, Flagstaff.

Stein, Pat H.

1993 National Register of Historic Places Multiple Property Documentation Form: Logging Railroad Resources of the Coconino and Kaibab National Forests, Arizona. On file, State Historic Preservation Office, Phoenix.

Westing, Fred

1966 The Locomotives That Baldwin Built. Bonanza Books, New York.

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Ziel, Ron

1963 The Twilight of Steam Locomotives. Grosset & Dunlap, New York.

Personal Communications

Vernon J. Glover, telephone conversation, November 19, 1998 Malcolm Mackey, telephone conversation, November 30, 1998

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Section _Photos_ Page _13_ <u>Two Spot Logging Train</u> <u>Coconino County, Arizona</u>

Multiple property listing: "Logging Railroad Resources of the Coconino and Kaibab National Forests, Arizona"

Photographic Information

The following information applies to Photos 1 through 3:

- 1. Two Spot Logging Train
- 2. Coconino County, AZ
- 3. P. Stein
- 4. November 27, 1998
- 5. Arizona Preservation Consultants, Flagstaff, AZ
- 6. View northeast, showing Locomotive #35938 and slope-back tender
- 7. Photo 1
- 6. View southeast, showing Locomotive #35938, slope-back tender, and log carrier car
- 7. Photo 2
- 6. Detail of manufacturer's plate affixed to side of locomotive: "Baldwin Locomotive Works January 35938 1911 Philadelphia U.S.A."
- 7. Photo 3

- 1. Two Spot Logging Train
- 2. Coconino County, AZ
- 3. R. Fronske
- 4. July 2, 1948
- 5. Special Collections & Archives, Cline Library, Northern Arizona University, Flagstaff, AZ
- 6. Two Spot hauling logs on the Coconino National Forest.
- 7. Photo 4

Two Spot Logging Train
Coconino County, Arizona
Multiple property listing: "Logging Railroad Resources of the Coconino and Kaibab
National Forests, Arizona"

ATTACHMENT 1: (following pages)

Specification sheet for BLW 10-30 E 123 (Source: NAPHS Ms 70)

Note: As stated on the first page of the specification sheet (see next page), the photograph depicts a class 10-30 E locomotive generally, not the one constructed for AL&T specifically. "Photograph/Photo 1935" refers not to the date of the photo, but rather to its number in BLW records. At the bottom of the first spec sheet page, the construction date of 1916 is erroneous.