

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

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

FOR FEDERAL PROPERTIES

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

1 NAME

HISTORIC

National Forest Fire Lookouts in the Southwestern Region, USDA Forest Service

AND/OR COMMON

National Forest Fire Lookouts in the Southwestern Region, USDA Forest Service

2 LOCATION

STREET & NUMBER National Forest System Lands in the
States of Arizona and New Mexico

N/A NOT FOR PUBLICATION

CITY, TOWN

CONGRESSIONAL DISTRICT

N/A

N/A VICINITY OF

STATE Arizona
New Mexico

04 CODE
35

Various COUNTY
See Item 10

CODE See
Item 10

3 CLASSIFICATION

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

4 AGENCY

REGIONAL HEADQUARTERS (If applicable)

USDA Forest Service - Southwestern Region

STREET & NUMBER

517 Gold Avenue, S.W.

CITY, TOWN

STATE

Albuquerque

N/A VICINITY OF

New Mexico 87102

5 LOCATION OF LEGAL DESCRIPTION

COURTHOUSE,
REGISTRY OF DEEDS, ETC

USDA Forest Service - Southwestern Region

STREET & NUMBER

517 Gold Avenue, S.W.

CITY, TOWN

STATE

Albuquerque

New Mexico 87102

6 REPRESENTATION IN EXISTING SURVEYS

TITLE

Inventory of Fire Lookouts

DATE

1986

FEDERAL STATE COUNTY LOCAL

DEPOSITORY FOR
SURVEY RECORDS

Unit of Recreation, CRM Files, USDA Forest Service-Southwestern Region
517 Gold Avenue, S.W.

CITY, TOWN

STATE

Albuquerque

New Mexico 87102

7 DESCRIPTION

CONDITION

EXCELLENT

GOOD

FAIR

DETERIORATED

RUINS

UNEXPOSED

CHECK ONE

UNALTERED

ALTERED

CHECK ONE

ORIGINAL SITE

MOVED DATE _____

DESCRIBE THE PRESENT AND ORIGINAL (IF KNOWN) PHYSICAL APPEARANCE

The properties in this thematic nomination comprise USFS fire lookout towers and associated support structures such as cabins, barns, storage sheds, privies, walls and cisterns built between 1905-1942 on National Forest system lands in the states of Arizona and New Mexico. The thematic group includes 31 lookout towers or houses and 51 outbuildings and other structures. Fire lookouts and their support structures are distinguished by a singular planning function, that of fire detection, by several distinctive architectural expressions and by the USDA Forest Service itself.

The properties which represent the physical expression of USFS fire management planning at national and local levels include several different types of lookout towers and a variety of support structures including cabins, barns, storage sheds, privies, walls, cisterns and corrals, most modeled after standard plans developed by the various regional offices of the USFS. All of the buildings are owned by the USDA Forest Service with title residing in the United States.

The general character of the properties' setting is similar; generally high points in remote areas, usually mountaintops in the National Forests of the Southwestern Region. These settings reflect the functional role of lookouts as observation points to detect forest fire.

Survey Methodology

All of the fire lookout sites in the 11 National Forests in the Southwestern Region were inventoried and recorded in a comprehensive survey by USFS personnel. The survey was conducted in 1986 under the supervision of Dr. David Gillio, Archaeologist in the Regional Office, USDA Forest Service, Southwestern Region, Albuquerque, New Mexico. Cultural & Environmental Systems, Inc. (C&ES), was then awarded a contract to develop evaluation criteria and prepare an evaluation report and a thematic National Register nomination. The map shown in Figure 1 provides locational information for the National Forest of the Southwestern Region.

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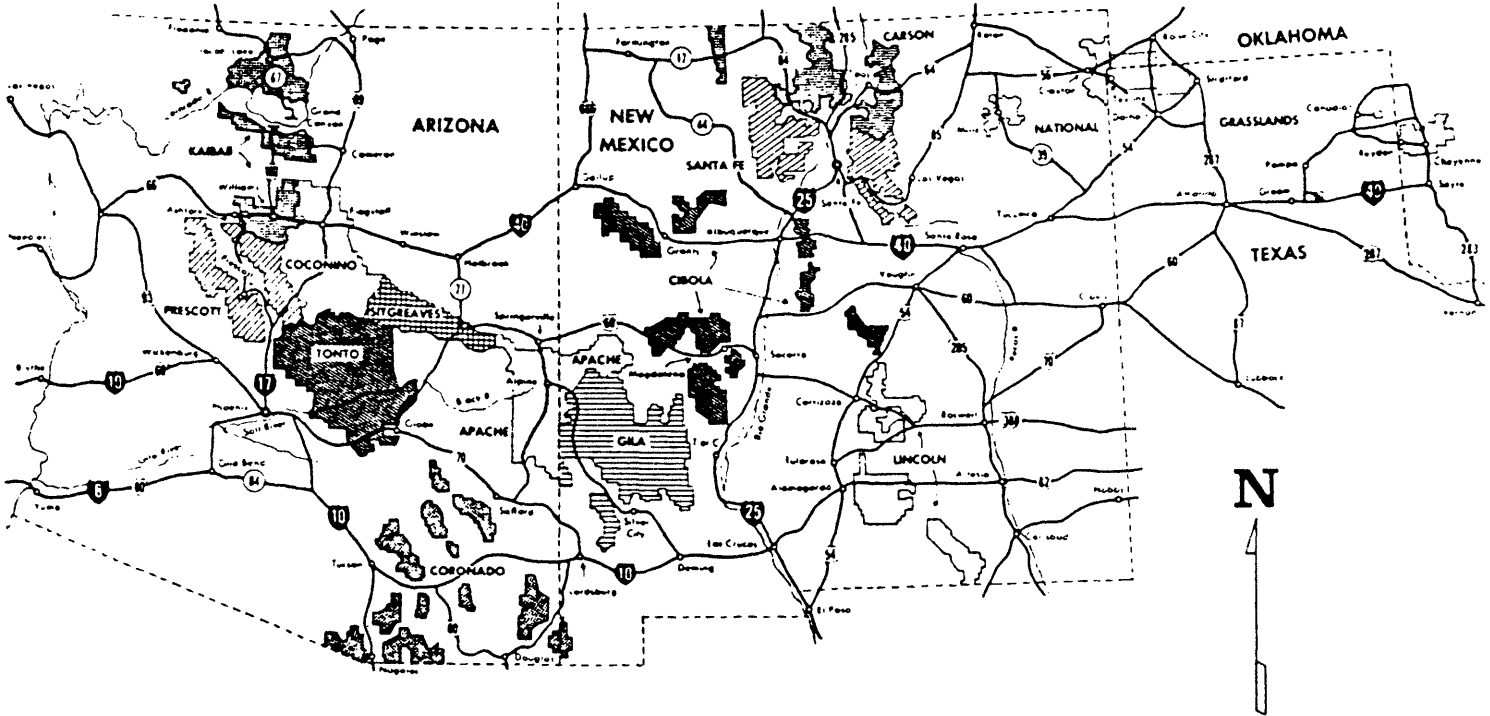


Figure 1. Map showing National Forests of the Southwestern Region.

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The principal investigator, Mr. Peter Steere, holds B.A. and M.A. degrees from the University of Montana and has completed course work towards a Ph.D. at the University of Georgia. He has fifteen years experience in historical, archaeological and historic architectural studies for state and federal agencies, private companies and academic institutions in Arizona, Montana, Utah, Idaho, Wyoming, Georgia, North Dakota, South Dakota, Washington, Pennsylvania and Rhode Island. He has completed extensive historical survey projects in Butte, Helena, Jardine, Basin, Bridger, Elkhorn, Wickes and Whitehall, Montana as well as the Tucson Basin area in Arizona that have focused on the survey, location and evaluation of historic buildings and preparation of historical narratives. He has worked on fire lookouts for several summers in Montana and has also served as an archaeologist-historian for the Helena and Deerlodge National Forests in Montana.

C&ES research started its part of the study with a two week visit to USFS regional offices in Albuquerque where copies of the forms and contact sheets of photographs were examined. The Engineering staff group provided photographs and construction plans. All of this material was brought back to the C&ES office (Tucson, Arizona) for close examination and study. In addition, other researchers were contacted, both within the USFS and outside, who have an interest in fire lookouts. The Forest History Society in North Carolina and the history section of the Forest Service in Washington, D.C., were also contacted. The government documents department of the University of Arizona Library was searched for publications regarding lookouts. Dave Gillio had several data base searches done for this project that provided additional reference materials. Several archaeologists working on various Forests in the Southwestern Region provided materials from their offices. All of this material was carefully reviewed to provide as complete a picture as possible of the history of fire lookouts in the Southwestern Region.

For each lookout, the contractor examined a site form and a set of photographs (including, in many cases, historic photographs) of the structure from USFS photographic records. The historic photographs have been useful in detecting structural changes in individual lookouts over time by comparing them with modern photographs. The local histories furnished by some individual forests also proved useful in providing specific information. In addition, standardized lookout structures plans (Figures 2 - 18) were utilized for comparative purposes.

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Environmental Setting In Relation to Need for Fire Detection

Arizona and New Mexico represent one of the most varied topographic and scenic areas in North America. Contained within these two states are six World Ecological Formations-classes (Desertscrub, Grasslands, Chaparral, Woodland, Forest and Tundra) and within this system are ten specific subcontinental North American Ecological Formations (Southwestern Desertscrub, Great Basin Desertscrub, Desert Grassland, Plains Grasslands, Mountain Grasslands, Chapparral, Evergreen Woodland, Deciduous Woodland, Coniferous Forest and Alpine Tundra) (Lowe 1964). Many of these formations blend gradually with one another so that the distinction or demarcation between them is often obscured. Each of the formations is characterized by specific biotic communities and further distinguished by particular dominant floral-faunal elements.

The combined factors of elevation and associated precipitation create the gradient responsible for the sequence of biotic communities and life zones. Precipitation in the area encompassed by Arizona and New Mexico occurs in a reasonably predictable biseasonal regime of winter and summer rains. Winter rains, usually of a gentle, widespread and often prolonged character, are carried into the area from the west and northwest on the strong westerlies created by the winter pattern of the jetstream and its action on the atmosphere over the northwest Pacific area. Summer precipitation, usually beginning in late June and continuing through the end of August, occurs in the form of extremely localized and violent thunderstorms of relatively short duration. These rains result from tropical Atlantic (Gulf) air masses which bring large quantities of moist tropical air into the region. Despite these precipitation patterns, the environment of this region is typified by predominantly arid conditions, the degree of which can fluctuate markedly from season-to-season or year-to-year.

Between the biseasonal rains, droughts can occur which often extend into what normally should be a rainy period. A combination of an extended drought and the localized and violent thunderstorms of mid-to late-summer result in the more upland areas, particularly the Mogollon Rim country of the Colorado Plateau, having the largest concentration of lightning fires and the highest frequency of critical fire weather in the United States (Biddison 1977-1979:19-21).

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Climatic factors are critical in the understanding and prevention of fire. Specific vegetation and its occurrence across and within environmental zones is also a key factor. In his discussion of fire regimes in Arizona, Humphrey (1964:56-60) describes the key fuel as being grass, a major component of many of the biotic zones in Arizona and New Mexico. For instance, the relationship between desert and grassland is determined largely by the ability of grassy vegetation to carry fire: when drought retards grassland growth, desert vegetation encroaches, but in times of increased rainfall, grasslands expand often through the agency of fire.

Prior to the introduction of cattle and other European cultural transplants in the Southwest, fire probably helped to maintain healthy biotic communities. For example, in 1973, the Tall Timbers Research Station (Biswell 1973, 1-3) identified a natural preserve of ponderosa pine on the San Carlos Apache Reservation that had not been subject to a strict fire protection program. The broadcast fire patterns identified there were felt to represent an ideal example for ponderosa pine management; in other words, no management at all.

Pyne (1982:510-520) feels that the relationship between the grasslands, pine forest, livestock and broadcast fire patterns of the Apache Indians in historic times is a critical factor in understanding fire history in the Southwest.

Livestock was introduced into the Southwest by the Spanish in the seventeenth century and reached such overwhelming numbers in the centuries which followed that severe overgrazing occurred in many areas. Leopold (1949:137-140) observed that overgrazing had severely altered the landscape of the Southwest and attributed it partially to the lack of fire. Overgrazing had drastically reduced the basic fuel that allowed fire to spread and which had played an important role in the regeneration of grasses. The Southwestern Region reflects a vegetative and cultural mosaic that exhibits a variety of fire regimes (Pyne 1982:515-516), many of which are not beneficial. Natural and cultural factors appear to have played an important role in changing the landscape of the region and its fire history.

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Organization of Nomination

This nomination is organized in the following manner. Items 1-6 are short answer, self-explanatory items. Item 7, Description, provides information on the present and original physical appearance of the nominated properties. It includes an introductory statement and sections on survey methodology, a map of the National Forests of the Southwestern Region, environmental setting, organization of the nomination, definition of property types, integrity of condition, evaluation criteria, boundary justifications, and a descriptive inventory of all nominated properties organized alphabetically by specific National Forest. Table 1 lists nominated lookout towers by type and nominated associated structures for each National Forest. Table 2 lists nominated properties for each lookout site and the contributing and noncontributing elements.

Item 8 contains a summary statement of significance followed by a discussion of the major historical contexts to which the nominated properties are related. These include: 1) The Forest Service and Fire Detection in the Southwestern Region (1905-1942), 2) The Civilian Conservation Corps and the USFS in the Southwestern Region (1933-1942), 3) Public Land Management and the Conservation Movement (1905-1942, and 4) the Development of a Functionally Specific Architectural Style: Fire Lookout Types, Designs and Equipment (1905-1942). Finally, a justification is presented for the three major significance areas: architecture, conservation and politics and government.

The following appendices are included: a series of field sketch maps of lookouts containing nominated properties; Figures 2-18, a series of architectural plans to illustrate different types of lookouts constructed by the Forest Service throughout the country; Figures 19-167, photographs of nominated properties; and a set of USGS quadrangle maps that show locations of nominated properties.

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Definition of Property Type

This nomination focuses on one basic property type: the fire lookout. Included in this property type are the following categories of structures.

1) Lookout Towers. Wooden or more commonly steel towers supporting enclosed observation structures, or cabs. Most surviving lookout towers were built from standard plans. Lookout towers can be divided into two major subtypes:

a) Observation only lookout towers. The majority of towers in the Southwestern Region are steel towers with 7 ft by 7 ft cabs used only for observation. The lookout operators lived elsewhere. A few towers have cabs measuring 12 ft by 12 ft.

b) Live-in lookout towers. These towers are usually not as tall and have larger cabs, typically 14 ft by 14 ft, which can served as living quarters as well as observation structures.

2) Lookout Houses. These live-in lookouts are not supported by towers but are built on the ground, usually on high promontories. Like lookout towers, most were built from standard plans.

3) Associated Structures. Associated structures include cabins, storage sheds, privies, barns, cisterns, walls, and corrals. Cabins, of log or frame construction, were built to provide living quarters for the lookout operators, particularly for those towers with 7 ft by 7 ft cabs. Many associated structures were also built from standard plans. These structures are regarded as an integral part of the lookout site complexes and the activities associated with them.

See Item 8 for a discussion of the development of fire lookout architectural styles and types. See Table 1 for a breakdown of fire lookout types included in the nomination.

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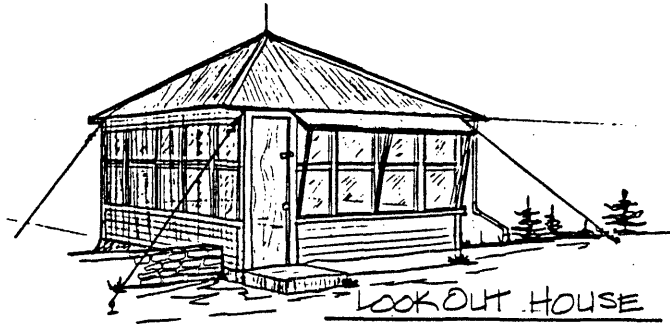
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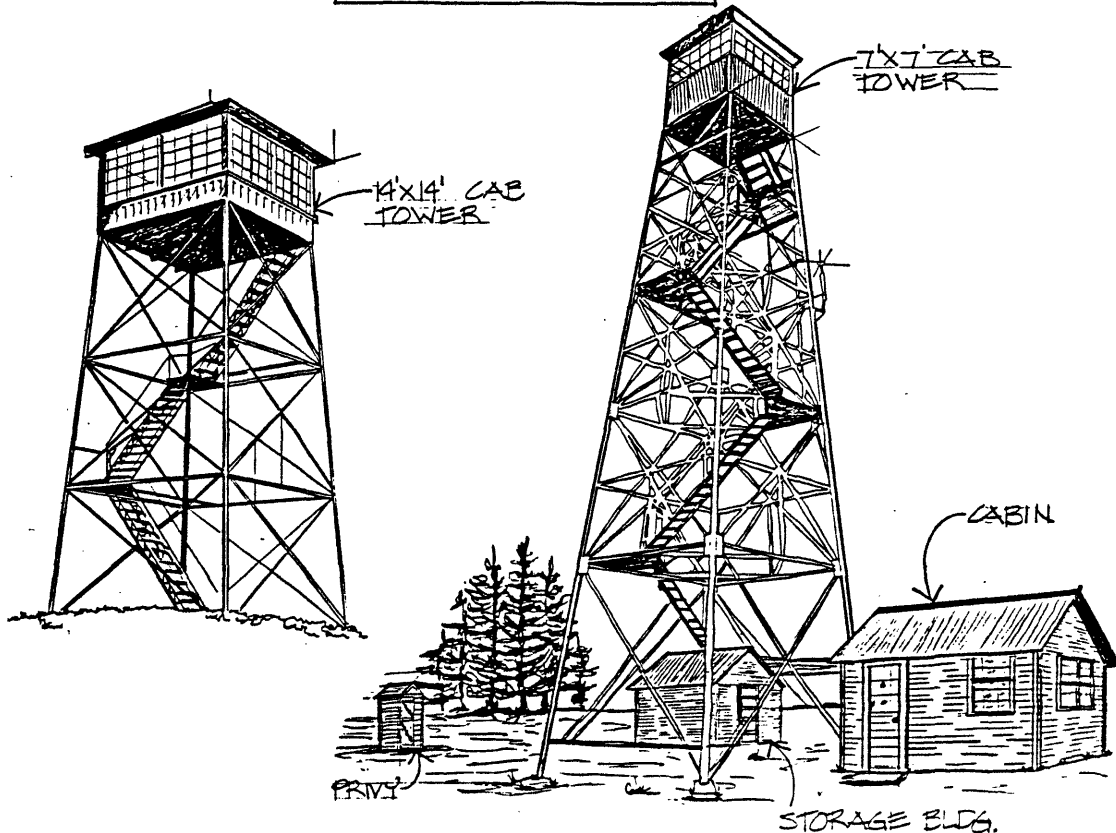
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EXAMPLES
OF
FIRE LOOKOUT
PROPERTY TYPE



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Glossary

Some terms utilized to describe lookouts, outbuildings and equipment are somewhat specialized, hence the following brief glossary is included to assist the reader.

Battered:

Slanting gradually inward from the base; a lookout tower whose support members are not perpendicular with the plane of the ground surface.

Cab:

Refers to a small house or cabin that is situated on the top of the lookout tower. The fire lookout person lives and/or works in these quarters.

Cabin:

Refers to a wood frame or log cabin that generally function as living quarters for the fire lookout person. It is situated on the ground usually in close proximity to the lookout tower.

Catwalk:

Decking around a lookout cab that functioned both as a walkway and observation platform.

Concrete Pier:

Footing for wooden or steel posts which served as a foundation for lookout towers.

Cupola:

A small, usually squarish structure on top of a roof.

Enclosed Tower:

A tower that has been enclosed with some type of siding usually to provide additional storage or living space.

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Gable:

The vertical triangular end of a building from cornice or eaves to roof ridge.

Hip roof:

A roof with ends and sides that slope; most lookout cabs and houses have hip roofs.

House:

A lookout house refers to an observation structure which sits on the ground and is not elevated on a tower.

H-Brace:

Lookout tower cross-bracing forms an H pattern or shape.

K-Brace:

Lookout tower cross-bracing forms a downward pointing K pattern.

Nonbattered:

A lookout tower whose support members are perpendicular to the plane of the ground surface.

X-Brace:

Lookout tower whose cross-bracing forms an x-pattern.

Fire Equipment

Alidade:

A straight edge or pointer attached to the firefinder which turns with it in a graduated circle (360 degrees) for measuring the angle of a fire smoke from the lookout. They may also be fitted in a hole in the map board and rotated along an azimuth ring.

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Azimuth Ring:

A circular instrument graduated into a 360 degree circle for measuring the angular distance along the horizon from a north point in any cardinal direction.

Firefinder:

Device used to locate a fire on a map; most common type is the Osborne firefinder developed by W.B. Osborne in 1909.

Fire Guard:

A term used early in the USFS for seasonal employees hired to fight forest fires or serve on lookouts.

Mapboard:

National Forest map cut and glued on wooden board of the firefinder; center of mapboard corresponds to location of lookout.

Primary Lookout:

Lookout used annually during the fire season.

Secondary Lookout:

Lookout site used to provide observation coverage for areas that cannot be seen by the primary lookout.

Smokechaser:

Term used by the USFS history for lookout fireguard.

Visibility Mapping:

The identification of and marking on maps of all areas seen by a particular lookout.

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Integrity and Condition

The overall condition of the nominated fire lookouts and associated outbuildings ranges from fair to good. The National Register discussion of integrity in terms of location, design, setting, materials, workmanship, feeling and association (36CFR 60.6) was utilized. The major method for accomplishing this was to compare historic photographs of fire lookouts and associated outbuildings with present-day photographs taken by the USFS. A secondary method utilized was to examine USFS improvement files which detail changes made in various structures on each USFS and the dates they were made. Finally, information from research notes, newspaper clippings, and forest histories was integrated. By combining these three information sources it was possible to make a reasonably clear assessment of the original integrity of each fire lookout and outbuilding. Original integrity represents the condition and physical appearance of the lookout or outbuilding when it was built. The general principle operating in this context was to identify those lookouts that retained the most original integrity since they were built. By utilizing the methods described earlier it was possible to identify those lookouts that had experienced the least modification to individual structures or changes in setting, feeling and association. This is not always a clear one-to-one assessment. There has to be some leeway in interpretation, trying to achieve balance between the seven levels of integrity. Some general rules that were consistently applied included the following:

I. Integrity of Design, Materials and Workmanship - Structural Changes

- A) Windows were regarded as a key element in the evaluation of lookout integrity since they represent a large portion of the lookout facade and receive considerable design attention over the years because of their important relationship to observation behavior occurring on fire lookout. Any lookout that had experienced drastic alteration or total replacement of the original windows was felt to have lost much of its structural integrity and generally was not recommended for nomination unless it exhibited exceptional significance in some other areas such as the Monjeau lookout on the Lincoln National Forest whose stone masonry architecture represented the only example of that style in the Southwestern Region.

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- B) Roof, siding - If the original design and materials were completely altered and/or replaced, the lookout was not recommended for nomination. If the roof and siding had only experienced maintenance in terms of new shingles, paint or replacement with similar materials this was not regarded as compromising integrity in any significant manner.
- C) Cab or house - If the original lookout cab or house had been completely replaced by a new or different one, this was regarded as severely compromising integrity and the lookout was not recommended for nomination.
- D) Towers - The wooden and steel towers showed little modification over time outside of normal maintenance such as replacement of bolts, anchor wires or repainting. If it could be discovered that a tower had been completely replaced or severely altered (shortened), this was regarded as a severe compromise to the original structural integrity and the lookout was not recommended for nomination.
- E) Ladders and Stairways - Many early lookouts originally had stairs as a means of access to the lookout cab. Many of these were replaced over the years for safety reasons. This was such a broad-based change, it is not regarded as significantly compromising structural integrity. Some lookouts with nonoriginal stairs still retain the original ladder. Many of the Aermotor towers originally had stairs depending on the exact style. A few had ladders which were replaced by stairs. Normal maintenance of ladders and stairs that might include repainting and replacement of rusted bolts, bracing or steps was not regarded as a significant compromise to structural integrity.
- F) Lookout Interiors - The interiors of lookout cabs or houses were not considered as part of this evaluation process.
- G) Additions - additions to lookout towers frequently were related to communication antennae or dishes placed on the exterior of the cab or lookout house. In most circumstances, these additions were not regarded as severe compromises to the original structural integrity. They were felt to represent an inevitable

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manifestation of the improvement in communications equipment. Lookout telephones were replaced by a series of improving radios. The changes in the receiving devices for these radios were a normal process of equipment improvement. A few lookouts that had experienced extensive changes by adding many antennae or dishes to cover the roof or sides of the cab or house were evaluated as more severely impacting original structural integrity. The additions of solar panels to provide energy on a few lookouts was regarded as having a more severe impact on the original structural integrity, but were not used as a sole factor to cause a lookout not to be recommended for nomination.

In many cases, those lookouts that were not recommended for nomination exhibited many severe changes, alterations and total replacements of structural members. Alteration and/or replacement of items that severely altered the original design were regarded as serious impacts an original structural integrity. The total replacement or severe alteration of a roof, window panels, siding or the tower itself would bean example while the lookout house or cab that retained most or all of its original structural design integrity, but had a few extra antennae, dishes or solar panels added was not regarded as having had its original structural integrity severely compromised.

2) Integrity of Location, Setting, Feeling and Association -
Non-Structural Changes

These changes in integrity were somewhat more subjective and hence were difficult to evaluate. Location generally is regarded as referring to whether the structure is in its original location. Any lookout that was not in its original location where it was built was regarded as having lost its integrity of location and was not recommended for nomination. There were a few exceptions to this general rule of exclusion. A lookout that had been moved to its present location more than 50 years ago and had continued to function as a fire lookout for that entire period of time was exempted from disqualification under the location integrity.

Changes in integrity of setting were fairly easy to evaluate. Any lookout site that had experienced the addition of two or more non-Forest Service structures usually in the form of commercial microwave communication towers was regarded as having had its integrity of setting compromised and was not recommended for

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nomination. The addition of a few Forest Service communication towers, a new weather station, modern storage shed or privy were not regarded as severe compromises to integrity of setting but were frequently viewed as replacements of deteriorated structures or additions directly related to the function and purpose of the lookoutsite.

Integrity of feeling is a more subjective matter and somewhat difficult to evaluate. It was not regarded as a primary factor in this study. If a lookout site had lost its original integrity of feeling (how it was when it was first constructed) it most frequently occurred because one or more of the other six types of integrity had been severely impacted. Hence a lookout built in 1934 that had its cab replaced in 1944, its tower shortened in 1951, had experienced the construction of a dozen private microwave towers all within a few hundred meters or so and had a paved two-lane freeway type of road built to provide access was regarded as having lost its integrity of feeling. Most lookouts were evaluated for integrity of feeling on a continuum that took all factors into consideration that contribute to a sense of feeling.

Evaluation Criteria

In order to determine those lookouts or associated structures which might be eligible for inclusion in the thematic nomination to the National Register of Historic Places, a series of evaluation criteria (based on the National Register criteria of significance), was employed. Those lookouts or associated structures eligible for the thematic group nomination must:

- 1) be associated with events that have made a significant contribution to the broad patterns of our history (36CFR60.6(a));
- 2) embody the distinctive characteristics of a type, period or method of construction (36CFR60.6(d));
- 3) be constructed prior to 1943 or, if more recent, demonstrate exceptional significance. Although fifty years is the generally accepted cutoff age for National Register eligibility, the era from 1933 to 1942 is viewed as a cohesive period. In fact, historians (Otis 1986; Paige 1985; Degler 1970; Salmond 1967; and Wirth 1980) have focused much attention in

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recent years on the Great Depression, the Roosevelt administration with its New Deal policies and the many agencies created in this period to meet the social needs of the American people. The CCC, probably the best remembered and most successful of all New Deal programs, had a strong influence on USFS fire management policies by providing more personnel for fire crews and through the construction of new fire lookouts. Many of the fire lookouts described in this report were constructed by CCC crews between 1933 and 1942, when the CCC was terminated. Because of the strong association between the CCC and fire lookouts, it is felt that the fifty year cutoff for National Register nomination should be waived and the time period extended to 1942. The CCC represents an important historic context for the significance of many of the fire lookout facilities.

- 4) possess integrity from the historic period in which it was constructed. To be significant, the lookouts or associated structure must have integrity of location, design, setting, materials, workmanship, feeling and association (36CFR Section 60.6). This means that a lookout or associated structure must have experienced only minor modification since construction and, in most circumstances, they cannot have been moved from their original location.

All fire lookouts in the Southwestern Region of the Forest Service, regardless of construction type, have some significance in relation to the four historic contexts discussed earlier. The lookouts all appear to have been associated with events that have made a significant contribution to the broad patterns of our history and embody distinctive characteristics of a type, period or method of construction. Therefore, the evaluation criteria of age and integrity remain as the primary factors which can be utilized to distinguish between those fire lookouts which are considered eligible and those which are not.

Boundary Justification

Boundaries were determined based on locational information provided on USFS field maps. They were selected to encompass the full extent of the resources making up the property. Most of the lookout sites are

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one acre or less in size, with only a few exceeding this figure. Each boundary determination was made to include all of the eligible structures at the site. For the typical lookout site this would generally include the lookout tower and associated structures and outbuildings. Individual boundary descriptions are contained in the following inventory and description section of the nomination.

In some cases, where the lookout was nominated and the associated structures were not, the boundary would be a small square surrounding the tower. On the other hand, if a cabin was nominated and the lookout was not, the boundary square would surround the cabin. In the case of a complex including lookout tower, outbuildings and other structures, an arbitrary square or rectangle was drawn to include all of the eligible structures.

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Inventory and Description of Nominated Fire Lookouts in the
Southwestern Region

The information presented in this section is based on the inventory conducted by the Forest Service during the summer of 1986. A total of 101 lookout sites were recorded. Sixty-seven lookout sites are excluded from the thematic nomination because they were built too recently or have lost integrity due to extensive remodeling or having been moved. One lookout was found to be located on private property and was excluded. Thirty-one lookout towers or houses are included in this thematic nomination as well as 53 outbuildings and other structures including cabins, storage sheds, privies, barns, corrals, cisterns and walls. The descriptions that follow, by National Forest, include only those lookouts which contain structures recommended for National Register eligibility.

All of these lookouts are eligible for the National Register under Criteria a and c. They also possess integrity of design, construction, location, setting, materials, workmanship and feeling and association. All of these lookouts have significance in relationship to four major interrelated historic contexts as well as representing a specific architectural style. These are discussed in detail in Section 8.

Apache-Sitgreaves National Forests

The Apache and Sitgreaves National Forests are administered as one National Forest from Springerville, Arizona. The combined area of the two National Forests contains over two million acres in east-central Arizona. Part of the Black Mesa Forest Reserve was set aside on August 17, 1898 and became the Apache National Forest on July 1, 1908. The Sitgreaves National Forest was created on July 1, 1908 from portions of the Black Mesa and Tonto National Forests. The Sitgreaves National Forest was named for Captain Lorenzo Sitgreaves, a government engineer, who conducted surveys through the area in the 1850s. The Apache National Forest is named for the Native American group that utilized the area from proto-historic times to the present. This forest has been an important timber producer, contains valuable water supplies and is utilized for livestock and recreation.

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PS Knoll Lookout Complex (Figures 19 - 25) (SE 1/4, Section 9, T4N R28E) UTM: 12/672350E/3711750N

Apache County, Arizona
Moenich, etc. Apache National Forest

Located on the Alpine Ranger District, this 45 ft 9 in high steel tower has a steel cab. This tower is an Aermotor Company MC-40 and was probably constructed by the CCC in 1933. The PS Knoll complex also includes a wood frame dwelling (Plan B-26) and a wood-frame storage shed (Plan B-6001) both constructed in 1939 and a wood-frame privy (Plan U-10) constructed in 1940. Comparison with historic photographs taken in the early 1940s indicates that no remodeling has occurred on any of the structures at this site. The entire complex has retained its original integrity of design, construction, workmanship, materials, location, setting and association and is recommended for National Register eligibility. The boundary of the PS Knoll lookout complex is a square which measures 120 ft by 120 ft with the tower at the southeast corner of the property. The area surrounding the complex within the boundary is not considered a "buffer area," but is integral to the setting of the property (see attached map).

Bear Mountain Lookout Complex (Figures 26 - 36) (NW 1/4, Section 4, T2N R31E) UTM: 12/672350E/3711750N

Greenlee County, Arizona
Mogollon Rim, etc. - Sitgreaves NF

This Aermotor MC-24 steel tower, located on the Alpine Ranger District, was constructed in 1933, probably by the CCC. It is 45 ft 9 in high and has a 7 ft by 7 ft steel cab. The storage shed (an old cabin) was built in 1928. The present cabin and privy were built in 1940. There was a wooden platform tower at this location in the early 1920s. The lookout complex is situated within a primitive area and is also the location of a prehistoric shrine site. The setting is evocative of the "early days" of the Forest Service according to the site recorder. Comparison with historic photographs from the late 1930s indicates that lookout and outbuilding have not undergone any significant structural change. The entire complex retains its original integrity of design, construction, workmanship, materials, setting, location and association and is recommended for National Register eligibility. The boundary of the Bear Mountain complex is a rectangle which measures 300 ft N-S by 200 ft E-W with the tower located immediately north of the halfway point on the south boundary. The area surrounding the complex within the boundary is not considered a "buffer area," but is integral to the setting of the property (see attached map).

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Lake Mountain Lookout Complex (Figures 37 - 39) (SE 1/4, Section 23,
T9N R24E) UTM: 12/613520E/3780140N Apache County, Arizona

McNary view, off Vernon McNary Rd.

Also located on the Lakeside Ranger District, this 48 ft high Aermotor LX-24 steel tower has a 7 ft by 7 ft steel cab and was constructed in 1926. Study of historic photographs indicates that while the original ladder was replaced in the 1930s, the lookout and its associated cabin (also built in 1926) have retained their original integrity of design, construction, workmanship, materials, setting, location and association. The lookout complex is associated with the Los Burros Ranger Station site, which is already listed on the National Register. The lookout complex at Lake Mountain is recommended for National Register eligibility. The boundary of the Lake Mountain lookout complex is a rectangle which measures 180 ft N-S by 260 ft E-W with the flagpole situated just east of the centerpoint of the west (N-S) boundary. The privy, of unknown date, is a noncontributing property within the boundary. The area surrounding the complex within the boundary is not considered a "buffer area," but is integral to the setting of the property (see attached map).

Deer Springs Lookout Complex (Figures 40 - 42) (SW 1/4, Section 34,
T11N R14E) UTM: 12/553350E/3796100N Navajo County, Arizona

Mogollon Rim, Apache-Sitgreaves N.F.

Located on the Heber Ranger District, this 50 ft high Aermotor LL-25 steel tower has a 7 ft by 7 ft steel cab and was built in 1923. This is the oldest lookout on the Apache-Sitgreaves National Forests. The associated cabin was also built in 1923. The Aermotor LL-25 was not a common type. Only two examples of this type exist today in the Southwestern Region. Examination of historic photographs from the early 1930s indicates only minor maintenance modifications. The lookout tower and cabin, retaining their original integrity of design, construction, workmanship, materials, setting, location and association, represent rare and unusual types. Both the lookout tower and cabin are recommended for National Register eligibility. The boundary of the Deer Springs lookout complex is a rectangle which measures 130 ft N-S by 100 ft E-W with the tower situated within the northeast corner of the property. The privy, of unknown date, is a noncontributing property within the boundary. The area surrounding the complex within the boundary is not considered a "buffer area," but is integral to the setting of the property (see attached map).

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Promontory Butte Lookout Complex (Figures 43 - 46) (SW 1/4, Section 5, T11N R13E) UTM 12/498900E/3802700N Coconino County, Arizona

Coconino Nat. Forest, Grand R.R., Apache-Sitgreaves

Located on the Chevelon Ranger District, this 110 ft high Aermotor LS-40 steel tower with a 7 ft by 7 ft steel cab was erected in 1924. It replaced a 110 ft high wooden platform built in 1913. The associated cabin and storage shed were also built in the early 1920s. When the present tower was built, it was the highest in the country. The original ladder was replaced with stairs in 1938. The interior paneling was whitewashed in 1966 and a decorative motif was burned in with local cattle brands. This modification has not had a negative impact on the property. Examination of historic photographs from the 1920s indicates that this lookout and associated cabin and shed have retained their original integrity of design, construction, workmanship, materials, location, setting and association. The lookout, cabin and storage shed are recommended for National Register eligibility. The boundary of the Promontory lookout complex is a rectangle which measures 160 ft N-S by 220 ft E-W with the flagpole situated approximately 40 ft from the southwest corner on the south boundary line. The area surrounding the complex within the boundary is not considered a "buffer area," but is integral to the setting of the property (see attached map).

Carson National Forest

Named for Kit Carson, noted frontier explorer and scout, the Carson National Forest has its administrative headquarters at Taos, New Mexico. The Carson National Forest contains 1.3 million acres and was established on July 1, 1908. It was created by the consolidation of Taos Forest Reserve (1906) and part of the Jemez National Forest. It contains within its border the Sangre de Cristo Mountains, part of the Pecos Wilderness and many important prehistoric sites.

Canjilon Mountain Lookout Cabin (Figures 47 - 49) (SE 1/4, Section 13, T27N R5E) UTM: 13/379150E/4047600N Rio Arriba County, Mexico

Cebolla Vieja, Carson N.F.

Located on the Canjilon Ranger District, this site no longer has a lookout tower. It had a wooden tower with a platform that was abandoned in 1922, after several lightning strikes occurred, one of which killed the lookout guard in front of his family. The Canjilon District was established in 1909 and the lookout tower constructed

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shortly after that date. The only remains of the tower as of the present inventory were a few stacked spruce poles. The wood-frame cabin measures 10 ft by 14 ft, has a green exterior, a pitched tin roof and interior walls that are painted half green and half white. The bunk bed constructed of spruce poles remains in the cabin. The interior and exterior walls are built of 1 in x 6 in rough lumber. The cabin foundation is cement. All of the window glass is gone. The floor needs a few new boards. The door is missing. The walls are in fairly good condition although covered with graffiti. This lookout cabin represents the oldest standing fire detection structure in the Southwestern Region with the possible exception of some lookout trees. The cabin has retained its original integrity of design, construction, workmanship, materials, setting, location and association and is recommended for National Register eligibility. The boundary of the Canjilon lookout cabin is a square measuring 40 ft by 40 ft with the cabin at the center. The area surrounding the cabin within the boundary is not considered a "buffer area," but is integral to the setting of the property (see attached map).

Coconino National Forest

The Coconino National Forest consists of 1.8 million acres in the Arizona mountain country around Flagstaff. It contains extensive ponderosa pine forests, mountain lakes and many deep canyons. The National Forest stretches from Camp Verde in the south to the San Francisco Mountains in the north and to Mormon Lake in the west. This National Forest supports extensive timbering, grazing and recreation. Arizona's tallest mountains (the San Francisco Peaks), Humphrey, Agassiz, Fremont and Doyle, are all located on the Coconino National Forest. The San Francisco Mountains Forest Reserve was established on August 17, 1898. On July 2, 1908, the Coconino National Forest was established from the San Francisco Mountains Reserve and parts of the Black Mesa, Tonto and Grand Canyon Forest Reserves.

Moqui Lookout Cabin (Figures 50 - 52) (SE 1/4, Section 27, T14N R11E)
UTM: 12/484785E/3824550N Coconino County, Arizona

Blue Ridge, Coconino N.F.
Located on the Blue Ridge Ranger District, the lookout tower was constructed in 1952. It represents a USDA Forest Service Standard Plan CL-100 to CL-106 series type. The steel cab measures 14 ft by 14

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ft and sits on an 83 ft high, v-brace steel tower. This is the tallest lookout on the Coconino National Forest. It replaced an Aermotor tower built in 1930. The lookout tower is less than 50 years old, does not represent an exceptional type and is not recommended for National Register eligibility. The cabin constructed in 1932 sits on a rock masonry foundation. It is a wood-frame construction with 2 by 8 joists, 1 by 4 decking, 2 by 4 wood rafters, 1 by 3 bevel siding and a corrugated steel roof. Comparisons of historic photographs indicate that the cabin has experienced only minor maintenance modification over the years. This cabin was built to provide living quarters for the fire guard who manned the early Aermotor tower at this site. The cabin has retained its original integrity of design and construction and is recommended for National Register eligibility. The boundary of the Moqui lookout cabin is a square which measures 40 ft by 40 ft with the cabin at the center. The area surrounding the cabin within the boundary is not considered a "buffer area," but is integral to the setting of the property (see attached map).

Woody Mountain Lookout Tower (Figures 53 - 55) (Section 3, T20N R6E)
UTM: 12/431755E/3888880N Coconino County, Arizona

Flagstaff vic., Rogers Lake

Located on the Flagstaff Ranger District, this 46 ft high tower with a 7 ft by 7 ft steel cab was designed by the Pacific Coast Steel Company and erected by Charles Lochman and his CCC crew in 1936. This mountain was one of the two original lookout sites on the Coconino National Forest. From 1910 to 1921, fire guards climbed a lookout tree to detect fires. A wooden tower was built in 1922 and was replaced by the present structure in 1936.

On 22 September 1986, the Flagstaff District of the Coconino National Forest held a ceremony to celebrate the fiftieth anniversary of its construction. Former lookout personnel who had worked on Woody Mountain were invited to the ceremony for the presentation of a bronze plaque which reads:

Dedicated to the men and women who have served since 1910 at
Woody Mountain Lookout and to Charles Lochman who in 1936
supervised the construction of this tower.

There has been no major structural modification to this tower over the last 50 years. The lookout tower retains its original integrity of

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design, structure, location, workmanship and materials; represents an exceptional type; and is over 50 years of age. It is recommended for National Register eligibility. The cabin, built in 1982, and associated outbuildings are not eligible. The boundary of the Woody Mountain lookout tower is a square which measures 40 ft by 40 ft with the tower at the center. The area surrounding the tower within the boundary is not considered a "buffer area," but is integral to the setting of the property (see attached map).

Mormon Lake Lookout Cabin (Figures 56 - 57) (NE 1/4, Section 3, T17N R9E) UTM 12/460860E/3860360N

Coconino County, Arizona
Mormon Lake vic., Coconino N.F.

This lookout is located on the Mormon Lake Ranger District and was erected in 1927. The steel tower is 50 ft high and has a 7 ft by 7 ft steel cab. It is an Aermotor LX-24 type. This lookout replaced a 1915 wooden tower. The associated wood frame cabin was built in 1928. The interior of the cabin was constructed using 2 by 4 studs, while the siding is shiplap pine. Study of historic photographs indicates that modification of the original windows in the tower has occurred. The cabin has experienced no major modifications. The cabin is a standard plan similar to the cabin at the East Pocket lookout. The lookout tower has lost its original integrity of design, construction, workmanship and materials due to the window replacement and is not recommended for National Register eligibility. However, the lookout cabin has retained these integrity factors and is recommended for National Register eligibility. The boundary of the Mormon Lake lookout cabin is a rectangle which measures 80 ft N-S by 80 ft E-W centered on the cabin. The area surrounding the complex within the boundary is not considered a "buffer area," but is integral to the setting of the property (see attached map).

Buck Mountain Lookout Tower (Figures 58 - 59) (SE 1/4, Section 20, T15N R9E) UTM: 12/461990E/3835980N

Coconino County, Arizona

Buck Mtn., Coconino N.F.

Located on the Long Valley Ranger District, this 30 ft high CT-2 wooden x-brace tower has a 14 ft by 14 ft L-4 wood cab on top. It was built in 1939, probably by a CCC crew. The steps were slightly altered in 1953. The timbers were treated for preservation in 1967

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and the roof was reshingled in 1983. These modifications have not had a negative impact on the property. This represents the best example of a surviving CT-2 type tower in the Southwestern Region. The only other CT-2 type is East Pocket Lookout, also on the Coconino National Forest. Historic photographs indicate that Buck Mountain lookout has retained its integrity of original design, construction, workmanship, materials and location. The lookout tower is 48 years old, but falls within the 1942 cutoff date for this historical period. It represents an exceptional type in that it is the only extant example in the Southwestern Region on USFS property of a CT-2 type tower and is recommended as eligible for the National Register. A more recent storage shed and privy of unknown date are not eligible. The boundary of the Buck Mountain lookout tower is a square which measures 60 ft by 60 ft with the tower at the center. The area surrounding the tower within the boundary is not considered a "buffer area," but is integral to the setting of the property (see attached map).

Lee Butte Lookout Tower and Cabin (Figures 60 - 63) (Section 22, T17N R8E) UTM: 12/450970E/3854610N Coconino County, Arizona

Happy Jack via Wood's Canyon

This 45 ft 9 in high steel tower with a 7 ft by 7 ft steel cab is located on the Mormon Lake Ranger District and was built in 1933. It represents the only example of an International Derrick and Equipment Company steel tower in the Southwestern Region. The accompanying wood-frame cabin was also built in 1933. Historical photographs indicate that no major modifications have occurred to either the lookout tower or the cab. Both the tower and cabin are more than 50 years old and retain integrity of original design, construction, location, materials and workmanship and both are recommended for National Register eligibility. A more recent shower house and trailer are not eligible. The boundary of the Lee Butte lookout historic portion of the complex is a rectangle which measures 30 ft N-S by 60 ft E-W with the northeast corner of the cabin situated just inside the northeast boundary edge. The area surrounding the historic portion of the complex within the boundary is not considered a "buffer area," but is integral to the setting of the property (see attached map).

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Coronado National Forest

The Coronado National Forest includes over 1.2 million acres of predominantly mountainous terrain within the basin and range country of southeastern Arizona. The region is characterized by isolated mountain ranges that rise from the savannahs. Some peaks reach over 9000 ft. The Coronado National Forest has a complex administrative history. In November of 1906, the Baboquivari, Huachuca and Tumacacori Forest Reserves were created. These three forests were consolidated into the Garces National Forest in 1908. In 1902, the Santa Rita and Santa Catalina Forest Reserves were created. In 1907, the Dragoon National Forest was created. On July 2, 1908, the Santa Rita, Santa Catalina and Dragoon National Forests were consolidated under the name of the Coronado National Forest, with Garces National Forest added in 1911.

Atascosa Lookout House (Figures 64 - 65) (SE 1/4, Section 18, T23S R12E) UTM: 12/486100E/3476120N Santa Cruz County, Arizona

Tubac vic., Coronado N. F.

This lookout house is located on the Nogales Ranger District and was erected in 1930 or 1933 by the Forest Service. The lookout is no longer being used as a fire detection facility but is now a rest area for hikers. This lookout is an L-4 type wooden house with dimensions of 14 ft by 14 ft. Historic photographs indicate minimal modification since 1933. The lookout is accessible by trail only. The associated outhouse and stone cistern were also built in 1933 and show no modification. This lookout house, cistern and outhouse have retained their integrity of original design, construction, workmanship, materials, setting, location and association and are recommended for National Register eligibility. The boundary of the Atascosa lookout house is a square which measures 60 ft by 60 ft with the lookout house in the northeast corner. The area surrounding the lookout house within the boundary is not considered a "buffer area," but is integral to the setting of the property (see attached map).

Barfoot Lookout Complex (Figures 66 - 69) (NE 1/4, Section 33, T17S R30E) UTM: 12/663275E/3532280N Cochise County, Arizona

Portal vic., Buena Vista Peak

Barfoot lookout is located on the Douglas Ranger District and was built in 1935, possibly by a CCC crew. The lookout house is an L-4

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type wooden house measuring 14 ft by 14 ft. This complex also includes a wood frame shed, privy, concrete cistern and an attractive, rustic style native stone retaining wall. The lookout complex represents one of the best examples of its type in the Southwestern Region. Study of historic photographs indicates no major modifications have occurred to any of the structures at this complex since they were built. The lookout house and other structures have all retained their integrity of original design, construction, workmanship, materials, setting, location and association and the entire complex at Barfoot is recommended for National Register eligibility. The boundary of the Barfoot lookout complex is a square which measures 80 ft by 80 ft. The retaining wall comprises the west edge of the boundary and the northwest corner of the boundary is located 25 ft north of the northernmost railing post (near the southwest corner of the lookout). The area surrounding the complex within the boundary is not considered a "buffer area," but is integral to the setting of the property (see attached map).

Lemmon Rock Lookout House (Figures 70 - 71) (NE 1/4, Section 35, T11S R15E) UTM: 12/519850E/3588475N Pima County, Arizona

Tucson W.C., Coronado N.F.

This L-4 type, a 14 ft by 14 ft wood frame lookout house erected in 1928, is located on the Santa Catalina Ranger District and is the second oldest lookout on the Coronado National Forest. There are no intrusions at this site which is accessible only by trail. The lookout is situated on a rock bluff. Study of historic photographs indicates that there have been no major modifications to the Lemmon Rock lookout house. This lookout is over 50 years old and retains its integrity of original design, construction, materials, workmanship, setting, location and association and is recommended for National Register eligibility. The boundary of the lookout house is a rectangle measuring 120 ft N-S by 40 ft E-W with the lookout house located in the southeast corner. A more recent privy of unknown date is a nonconforming structure within the boundary.

Webb Peak Lookout Tower (Figures 72 - 74) (Section 30, T8S R24E) UTM: 12/601030E/3619620N Graham County, Arizona

Old Columbus W.C., CV A2 366

Located on the Safford Ranger District, this Aermotor MC-40 steel tower is approximately 45 ft high and has a 7 ft by 7 ft steel cab. It was erected in 1933, possibly by a CCC crew. The existing cabin was

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constructed in the early 1960s and is not eligible for the Register. The original cabin was removed in 1968. Historic photographs indicate that no major structural changes have occurred to the lookout tower since it was erected. This lookout is over 50 years old, retains its original design, construction, workmanship, materials, setting, location and association and is recommended for National Register eligibility. A more recent privy of unknown date is not eligible. The boundary of the lookout tower is a square measuring 40 ft by 40 ft with the tower at the center. The area surrounding the tower within the boundary is not considered a "buffer area," but is integral to the setting of the property (see attached map).

West Peak Lookout Tower (Figures 75 - 77) (SW 1/4, Section 18, T8S R23E) UTM: 12/590175E/3622420N Graham County, Arizona

Bonita vic., Coronado N.F.

Located on the Safford Ranger District, this 45 ft high Aermotor MC-40 steel lookout tower has a 7 ft by 7 ft steel cab and was erected in 1933 by a CCC crew. The original log cabin associated with this lookout was removed in 1959 and replaced by a modern structure which is not eligible for the National Register. Study of historic photographs reveals that no major structural changes have occurred to the tower. This tower is over 50 years of age, retains its integrity of original design, construction, workmanship, materials, setting, location and association and is recommended for National Register eligibility. A more recent privy of unknown date is not eligible. The boundary of the West Peak lookout tower is a square measuring 40 ft by 40 ft with the tower at the center. The area surrounding the tower within the boundary is not considered a "buffer area", but is integral to the setting of the property (see attached map).

Heliograph Lookout Complex (Figures 78 - 83) (SE 1/4, Section 13, T9S R24E) UTM: 12/607960E/3612880N Graham County, Arizona

Old Columbia vic., Coronado N.F.

This 99 ft high steel tower lookout is an Aermotor MC-40 with a 7 ft by 7 ft steel cab. Located on the Safford Ranger District, it was erected by a CCC crew in 1933. The log cabin, wood frame barn and privy were also constructed in 1933. A room was added to the cabin in 1978 in keeping with its rustic style. This lookout tower is the highest one on the Coronado National Forest. With the exception of the room addition to the cabin, the original structures at this site have retained their integrity of design, construction, workmanship,

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materials, setting, location and association. All of these structures are over 50 years old and the entire complex is recommended for National Register eligibility. A communications building, a recent addition to the complex, is a noncontributing structure within the boundary. A television power house, also a recent addition and not eligible for the National Register, is located outside the boundary. The boundary of the Heliograph lookout complex is a rectangle measuring 120 ft N-S by 260 ft E-W with the tower located in the southeast corner of the property. The area surrounding the complex within the boundary is not considered a "buffer area," but is integral to the setting of the property (see attached map).

Monte Vista Lookout Cabin (Figures 84 - 86) (Section 32, T28S R30E)
UTM: 12/659500E/3522100N Cochise County, Arizona

Elfrida vic., Monte Vista Peak

This lookout, erected in 1966 and therefore not eligible for nomination, is a USDA Forest Service Standard Plan CL-100 to CL-106 series type. It is located on the Douglas Ranger District. The tower is a 41 ft high steel tower with a 14 ft by 14 ft steel cab. This lookout replaced an earlier Aermotor tower erected in 1922 or 1923. The log cabin with dovetail notching was built in the early 1930s, probably by the CCC. The cabin is in excellent condition and retains its integrity of original design, construction, workmanship, materials, location, setting and association. The cabin is recommended for National Register eligibility. A metal storage shed and privy are more recent additions to the complex and are not eligible. The boundary of the Monte Vista lookout cabin is a square which measures 40 ft by 40 ft with the cabin at the center. The area surrounding the cabin within the boundary is not considered a "buffer area," but is integral to the setting of the property (see attached map).

Silver Peak Lookout Complex (Figures 87 - 93) (NW 1/4, Section 32,
T27S R31E) UTM: 12/670325E/3531200N Cochise County, Arizona

Portal vic., Coronado M.F.

This lookout house, an L-4 type located on the Douglas Ranger District, was erected in 1938 by a CCC crew. It is situated on top of a rocky knob. This wood frame construction measures 14 ft by 14 ft. There are associated buildings including an outhouse and storage shed, both are wood frame construction with tongue and groove exterior. There also is a water cistern with a catchment drain extending from the roof of the lookout house. This lookout complex has suffered no

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modern intrusion and has retained remarkable integrity of original design, construction, workmanship, materials, location, setting and association. The entire complex is recommended for National Register eligibility. The boundary of the Silver Peak lookout complex is a rectangle measuring 110 ft N-S by 80 ft E-W with the storage shed located in the southeast corner of the property. The area surrounding the complex within the boundary is not considered a "buffer area," but is integral to the setting of the property (see attached map).

Gila National Forest

The Gila National Forest encompasses over three million acres of forest and range land in southwestern New Mexico. The Gila Forest Reserve was created on March 2, 1899. The Big Burros Forest Reserve was created on February 6, 1907. On June 18, 1908 the Big Burros and Gila Reserves were consolidated to form the Gila National Forest. In 1931 a portion of the Datil National Forest was added to the Gila National Forest. The Gila Wilderness area, the first in the United States, was established in 1924 and lies within the National Forest. The mountain ranges in the Gila National Forest include the Mogollons, the Tularosas, the Diablos and the Black Range. Important resources of this National Forest include timber, water, forage for grazing and many recreation areas.

Mogollon Baldy Lookout Cabin (Figures 94 - 96) (NW 1/4, Section 10, T12S R17W) UTM: 12/724120E/3683780N Catron County, New Mexico

Mogollon Baldy Peak, Gila NF

Located on the Wilderness Ranger District, this 30 ft high Aermotor MI-25 steel tower has a 14 ft by 14 ft wood cab. The lookout was constructed in 1948. This location has been utilized for fire detection activity since at least 1913 when fires were located by a protactor on top of a stump. A wooden tower was built in 1917 and the top platform enclosed in 1921. The wooden tower was replaced by the present steel tower. Adjacent to the lookout tower is a log cabin built in 1923. Study of historic photographs indicates that no major structural changes have occurred to either building. The tower represents a rare Aermotor type, but it is less than 50 years old and does not fall within the 1942 cutoff date. However, the cabin retains excellent integrity of original design, construction, workmanship, materials and setting and is recommended for National Register eligibility. A more recent metal privy is not eligible. The boundary

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of the Mogollon Baldy lookout cabin is a square which measures 60 ft by 60 ft with the cabin at the center. The area surrounding the complex within the boundary is not considered a "buffer area," but is integral to the setting of the property (see attached map).

Mangas Mountain Lookout Complex (Figures 97 - 100) (Section 16, T3S R14W) UTM: 12/748620E/3771000N Catron County, New Mexico

Mangas Mountain

Located on the Quemado Ranger District, this lookout tower was erected in 1934. It is an Aermotor MC-24, 30 ft high steel tower with a 14 ft by 14 ft steel cab. The wood frame cabin was erected in 1934. The lookout tower and cabin show few modifications over time and retain much of their integrity of original design, construction, workmanship, materials, setting, location and association. The tower and cabin are over 50 years old and are recommended for National Register eligibility. A metal privy, a recent addition to the complex, is a noncontributing structure within the boundary. The boundary of the Mangas lookout complex is a rectangle which measures 120 ft N-S by 320 ft E-W with the tower in the northeast corner of the property. The area surrounding the complex within the boundary is not considered a "buffer area," but is integral to the setting of the property (see attached map).

Reeds Peak Lookout Tower (Figures 101 - 102) (SW 1/4, Section 23, T13S R10W) UTM: 13/233780E/3670600N Grant County, New Mexico

Reeds Peak, Squawkey Spring, White M.F.

Located on the Mimbres Ranger District, this 48 ft high Aermotor LX-24 steel tower has a 7 ft by 7 ft steel cab and was erected in 1929. New stairs were added in 1965, but the original ladder is still in place. The original cabin was replaced in 1959. The tower retains its integrity of original design, construction, workmanship, materials, setting, location and association and is over 50 year old and is recommended for National Register eligibility. A cabin built in 1959, a storage shed and a privy are of more recent construction and are not eligible. The boundary of the Reeds Peak lookout tower is a square which measures 40 ft by 40 ft with the tower at the center. The area surrounding the tower within the boundary is not considered a "buffer area," but is integral to the setting of the property (see attached map).

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Bearwallow Mountain Lookout Cabins and Shed (Figures 103 - 106) (SW 1/4, Section 11, T10S R18W) UTM: 12/716810E/3703340N Catron County, New Mexico

Bearwallow Park, Bearwallow Lookout Rd., Catron Co., N.M.

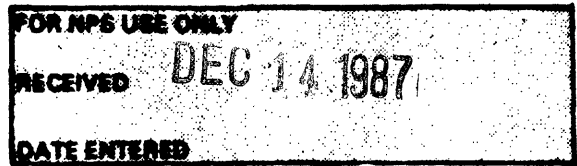
Located on the Glenwood Ranger District, this lookout was erected in 1923. This lookout is an Aermotor LX-24, 35 ft high with a 7 ft by 7 ft wood cab. The upper log cabin was built in 1923 and the lower cabin, formerly a barn, and the privy were erected in 1940. A storage shed also of log construction is of the same vintage as the cabins and probably dates to 1923. The lookout tower has been extensively remodeled. The original windows were completely replaced, new stairs installed and the roof and exterior walls covered with steel in 1984. The two log cabins show few changes since their construction. Both log cabins and the log shed have retained their integrity of original design and both are recommended for National Register eligibility, while the lookout is not, as it has been so extensively remodeled and has lost its integrity of design, workmanship and materials. The boundary of the Bearwallow lookout complex is a rectangle which measures 150 ft N-S by 500 ft E-W with the lower cabin at the southeast corner of the property. The lookout tower is a noncontributing property within the boundary. The area surrounding the complex within the boundary is not considered a "buffer area," but is integral to the setting of the property (see attached map).

Black Mountain Lookout Cabin (Figures 107 - 108) (NE 1/4, Section 5, T11S R13W) UTM: 12/758000E/3696440N Catron County, New Mexico

Black Mtn., Catron Co., N.M.

This lookout was constructed in 1934 and is located on the Black Range Ranger District. The 30 ft high Aermotor MC-24 with a 12 ft by 12 ft wood cabin was remodeled in 1978, when all of the original windows were replaced. This lookout replaced an earlier wooden tower built in the 1920s. The present cabin was built in 1925 and is little changed. The lookout tower has not retained its integrity of original design and construction and is not recommended for National Register eligibility. However, the log cabin is over 50 years of age, has retained its integrity of original design, construction, workmanship and materials and is recommended for National Register eligibility. A metal shed and privy are recent additions to the complex and are not eligible for the National Register. The boundary of the Black Mountain

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lookout cabin is a square which measures 40 ft by 40 ft with the cabin at the center. The area surrounding the cabin within the boundary is not considered a "buffer area," but is integral to the setting of the property (see attached map).

Hillsboro Peak Lookout Tower and Cabin (Figures 109 - 111) (NW 1/4, Section 4, T16S R9W) UTM: 13/240260E/3649260N Sierra County, New Mexico
Hillsboro Peak, Gila N.F.

Located on the Black Range Ranger District, this 45 ft high Aermotor MC-40 steel tower has a 7 ft by 7 ft steel cab and was erected in 1933. This lookout replaced a wooden tower built in the early 1920s. The log cabin associated with this lookout was built in 1925. The modern metal building was built in 1965. Because the lookout tower and cabin have both retained their integrity of original design, construction, workmanship, materials, location, setting and association and are over 50 years of age, they are both recommended for National Register eligibility. A wood privy, built in 1940, but with a metal shed addition, and a modern fiberglass privy are not eligible for the National Register. The boundary of the Hillsboro Peak lookout tower and cabin is a rectangle which measures 130 ft NW-SE by 80 ft SW-NE with the tower in the north corner. The metal building and the fiberglass privy are noncontributing elements within the boundary. The wood privy and metal shed are located outside the boundary.

El Caso Lookout Complex (Figures 112 - 115) (SE 1/4, Section 27, T2S R16W) UTM: 12/731110E/3776220N Catron County, New Mexico
El Caso Lookout, Gila N.F.

This Aermotor MC-24 lookout tower is located on the Quemado Ranger District and was built in 1934. The tower is 30 ft high and has a 12 ft by 12ft wooden cab. The associated cabin and privy were also built in 1934. This lookout tower is unchanged from its initial construction. It represents one of the best examples of an Aermotor MC-24 tower and cab in the Southwestern Region. Because the lookout tower, cabin and privy retain excellent integrity of original design, construction, workmanship, materials, location, setting and association and are over 50 years of age, both are recommended for National Register eligibility. The boundary of the El Caso lookout complex is a square which measures 180 ft by 180 ft with the tower near the center of the northline (E-W) boundary. The area surrounding the complex within the boundary is not considered a "buffer area," but is integral to the setting of the property (see attached map).

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Kaibab National Forest

The Kaibab National Forest encompasses 1.6 million acres in north-central Arizona and contains large commercial timber stands and extensive grazing lands. The Kaibab National Forest has a complex administrative history. The Grand Canyon Forest Reserve was created by President Cleveland on February 20, 1893. In 1908, all of the San Francisco Mountains and parts of the Black Mesa, Tonto and Grand Canyon Forest Reserves were consolidated under the name of Coconino National Forest. In 1910, part of the Coconino National Forest became the Tusayan National Forest. Also in 1908, the Dixie National Forest and the Kaibab National Forest were created. In 1924, the Dixie National Forest was consolidated with the Kaibab National Forest and in 1934, portions of the Kaibab National Forest north of the Grand Canyon and the Tusayan National Forest south of the Grand Canyon were combined to form today's Kaibab National Forest.

Jacob Lake Lookout Tower (Figure 116) (NW 1/4, Section 17, T38N R1E)
UTM: 12/391650E/4062050N Coconino County, Arizona

Jacob Lake, Grand Canyon Hwy.

This 100 ft high Aermotor MC-39 steel tower with a 7 ft by 7 ft steel cab was erected in 1934 by contractors from Kanab, Utah, and is located on the North Kaibab Ranger District. The tower has received only routine maintenance and shows no major structural changes. The lookout's cabin is not at the site, but is located one mile away at an old administrative site, the Jacob Lake ranger station which is listed on the National Register. Because this lookout has retained its integrity of original design, construction, workmanship, materials, setting, location and association and is over 50 years of age, it is recommended for National Register eligibility. The boundary of the Jacob Lake lookout tower is a square which measures 40 ft by 40 ft with the tower located at the center. The area surrounding the tower within the boundary is not considered a "buffer area," but is integral to the setting of the property (see attached map).

Big Springs Lookout Tower (Figure 117) (NW 1/4, Section 19, T37N R1E)
UTM: 12/380650E/4050400N Coconino County, Arizona

Big Springs, Kaibab N.F.

Erected for the Forest Service in 1934 by contractors from Kanab, Utah, this 100 ft high steel tower with a 7 ft by 7 ft steel cab is located on the North Kaibab Ranger District. This lookout is an

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Aermotor MC-39 type. The associated 18 ft by 24 ft wood frame cabin was built in 1959 replacing an earlier log cabin and is not being nominated. Study of historic photographs indicates few structural changes have occurred since the lookout was built. Because the lookout tower is over 50 years of age and has retained its integrity of original design, construction, workmanship, materials, setting, location and association, it is recommended for National Register eligibility. The boundary of the Big Springs lookout tower is a square which measures 40 ft by 40 ft with the tower located at the center. The area surrounding the tower within the boundary is not considered a "buffer area," but is integral to the setting of the property (see attached map).

Dry Park Lookout Cabin and Storage Sheds (Figures 118 - 122) (NE 1/4, Section 12, T35N R1E) UTM: 12/389100E/4034650N Coconino County, Arizona
Big Springs Vill., Kaibab N.F.

The Dry Park lookout, located on the North Kaibab Ranger District, was built in 1944 after two years of delays due to problems with the War Production Board. The 120 ft high steel tower with a 7 ft by 7 ft steel cab is an Aermotor MC-99 type and is the tallest tower on the Kaibab National Forest. Window pane design is slightly different on this MC-99 model than on earlier Aermotor models. The lookout tower has experienced no major structural modifications since it was built. It replaced an earlier wood tower built in the 1930s. The Aermotor MC-99 type is unusual for the Southwestern Region. This lookout is one of only two extant samples of the style, the other being on the Lincoln National Forest. The cabin at this site is 22 ft by 25 ft with four rooms and was built in 1936. It has a simple gable roof covered with corrugated tin. It is a "builder bungalow" style with red-painted wood siding and white trim. It has an extended eave over the doorway supported by brackets with diamond cut purlins. Rafters under the eaves are exposed. The windows are all six-over-six light wooden sash. There are two storage buildings at this site. Storage building Number 1 is a 12 ft by 14 ft board-and-batten structure with a shingled gable roof, while storage building Number 2 is a 7 ft by 9 ft board and batten structure with a shingled gable roof. The two storage sheds were built in 1936. The lookout tower at this site, which is less than 50 years of age and falls outside the 1942 cutoff date for this study, is not being nominated. The support buildings at this site retain their integrity of original design, construction, workmanship, materials, setting, location and association and are recommended for National Register eligibility. The boundary of the Dry

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Park lookout associated structures is a rectangle which measures 200 ft N-S by 150 ft E-W with storage building Number 2 situated in the southwest corner of the property. The lookout tower is a noncontributing property within the boundary. The area surrounding the complex within the boundary is not considered a "buffer area", but is integral to the setting of the property (see attached map).

Kendrick Lookout Cabin (Figures 123 - 126) (NE 1/4, Section 3, T23N R5E) UTM: 12 423180E/3918450N
Coconino County, Arizona *Sumpter Center, near Kaibab N.E.*

Located on the Chalender Ranger District, the Kendrick lookout tower was erected in July of 1964, replacing an L-4 lookout house built in the 1930s. The tower is a USDA Forest Service Standard Plan CL-100 to CL-106 series type erected by Asa G. Edkel of Prescott, Arizona. The steel tower is 10 ft high and the steel cab measures 14 ft by 14 ft, another example of an R-6 flat design. The steel cab was provided by the Shuler Engineering Company of Newark, Ohio. This tower is located in a wilderness area. This mountain top was used as a fire lookout site as early as 1910-1911. The cabin, located approximately 1500 ft from the lookout, was built in 1911 by fire lookout guard, Bill Williams, who lived in the cabin and hiked up to the top of the mountain during the day to watch for smoke. The cabin was used until the early 1930s. The cabin is still standing and is in excellent condition. It is used today as a hiker shelter. The cabin measures 9 ft by 12 ft, has a simple, corrugated tin gable roof with deeply overhanging eaves, a round debarked ridge pole and purlins. The logs in the walls are joined with square notches at the corners. The mortar between the joints is concrete. The foundation consists of basalt blocks with concrete mortar. The cabin has a wood plank floor, one wood plank door on the south end and windows on the east and west sides. This cabin is the second oldest example of a fire detection structure present in the Southwestern Region. The Forest Service has placed an interpretive sign at this cabin site. Because the cabin is over 50 years of age and retains its integrity of original design, construction, workmanship, materials, location and setting, it is recommended for National Register eligibility. The lookout tower is not recommended for National Register eligibility as it is less than 50 years old and does not represent an exceptional type. The boundary of the Kendrick lookout cabin is a square which measures 40 ft by 40 ft with the cabin at the center. The area surrounding the cabin within the boundary is not considered a "buffer area," but is integral to the setting of the property (see attached map).

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Volunteer Lookout Cabin (Figures 127 - 130) (NW 1/4, Section 8, T21N R5E) UTM: 12/418560E/3897380N Coconino County, Arizona

Bellmonte vic., Kaibab Natl.

This lookout tower is also located on the Chalender Ranger District and was erected in 1963. This steel lookout tower is 30 ft high and has a 14 ft by 14 ft steel cab. It is a USDA Forest Service Standard Plan CL-100 to CL-106 series type. It was built by the Forest Service and the Navajo Army Depot and is still jointly operated by them. It replaced an earlier 16 ft high wood tower with a 7 ft by 7 ft cab built in 1932. The associated wood frame cabin was built in 1939. It has a gable roof and is constructed on the same plan as the Grandview Lookout cabin with some differences in structural detailing such as wider weather board siding. The cabin has a simple gable roof with asphalt shingle, exposed rafters and brown-painted wooden siding. It has wood sash windows. The cabin sits on a poured concrete foundation. The interior has two rooms, a kitchen and a bedroom. It was built on Forest Service Plan B-16. Because the cabin at this site meets the age requirements for this study and has retained its integrity of original design, construction, materials, workmanship, setting and location, it is recommended for National Register eligibility. The lookout tower is less than 50 years old, does not represent an exceptional type or style and is not recommended for National Register eligibility. A recent storage shed south of the tower also is not eligible. The boundary of the Volunteer lookout cabin is a square which measures 40 ft by 40 ft with the cabin at the center. The area surrounding the cabin within the boundary is not considered a "buffer area," but is integral to the setting of the property (see attached map).

Grandview Lookout Tower and Cabin (Figures 131 - 134) (NW 1/4, Section 27, T30N R4E) UTM: 12/413950E/3979475N Coconino County, Arizona

Davis Lake, N of Grandview Ranger Dist.

This lookout is located on the Tusayan Ranger District and was built in 1936. The steel lookout tower is 80 ft tall and has a 7 ft by 7 ft steel cab. It is an Aermotor MC-39. This tower replaced an earlier log tower with platform built in the 1920s. The wood frame cabin was also built in 1936 and is from Forest Service Plan B-16. The cabin measures 12 ft by 22 ft and has two rooms. It has a shingled gable roof with overhanging eaves and exposed rafters. The eaves above the front door is extended and supported by knee brackets with a diamond cut purlins. The cabin has weather-board siding and a poured concrete foundation. Because the lookout tower and cabin are both over 50 years

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old and have retained their integrity of original design, construction, workmanship, materials, setting, location and association, both are recommended for National Register eligibility. Two privies at the complex are more recent in age and are not eligible for the National Register. The boundary of the Grandview lookout complex is a rectangle which measures 210 ft N-S by 80 ft E-W with the tower situated approximately 30 ft north of the center of the south (E-W) boundary line. The area surrounding the complex within the boundary is not considered a "buffer area," but is integral to the setting of the property (see attached map).

Lincoln National Forest

This National Forest is located in New Mexico and covers over one million acres. It has important water, wildlife, wood, grazing forage and recreation resources. Five rivers, the Ruidoso, Felix, Penasco, Hondo and Bonito, flow from the east side of the mountains. They are all tributaries of the Pecos River and supply a major portion of the water for southeastern New Mexico and west Texas. The 31,000 acre White Mountain wilderness is located within the Lincoln National Forest.

In 1950, a passing motorist's carelessly discarded a match or cigarette starting the Capitan Fire which burned 17,000 acres before being brought under control. A crew of fire fighters found a badly burned bear cub that they rescued. This cub was to become known as Smokey the Bear and became a major symbol of the Forest Service fire safety and prevention program.

The Lincoln Forest Reserve was created in 1902. The Galinas Forest Reserve was created in 1906, the Guadalupe National Forest in 1907 and the Sacramento National Forest in 1907. In 1908, the Guadalupe and Sacramento National Forests were consolidated into the Alamo National Forest and the Gallinas and Lincoln National Forests were consolidated into the Lincoln National Forest. On June 6, 1917, the Alamo National Forest was transferred to the Lincoln National Forest.

Monjeau Lookout (Figures 135 - 137) (Section 24, T10S R12E) UTM:
13/432020E/3699100N Lincoln County, New Mexico

Villa Madonna, Lincoln N.F.

This lookout, located on the Smokey Bear Ranger District, was built by a CCC crew in 1940 and represents one of the most unique lookouts in

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the Southwestern Region. The Monjeau lookout has a 7 ft by 7 ft metal cab manufactured by International Derrick on a 14 ft by 14 ft native stone tower. The cab is for observation only. The living quarters are located below in the stone tower.

This lookout is illustrated in the Forest Service Standard Lookout Planbook originally published in 1938. The cab and tower plan (No. B6601) was provided by the International Derrick Company. The Monjeau lookout replaced an earlier D-6 cupola type lookout house built in the early 1930s. The Monjeau lookout is located at an elevation of 9,641 ft and is a popular visiting spot for tourists. This tower represents an excellent example of the "rustic style" construction type utilized by the CCC for the National Park Service and Forest Service buildings. It is the only example of a lookout in the Southwestern Region that utilized the "rustic style." Because this lookout represents one of the most unusual architectural types in the Southwestern Region and has retained its integrity of original design, construction, setting, location, workmanship and materials, it is recommended for National Register eligibility. Because the lookout retains integrity of its architectural style, the replacement of windows at the Monjeau lookout is not regarded as significant enough to disqualify the lookout for National Register eligibility. The boundary of the Monjeau lookout tower is a square which measures 40 ft by 40 ft with the tower at the center. The area surrounding the tower within the boundary is not considered a "buffer area," but is integral to the setting of the property (see attached map).

Wofford Lookout Complex (Figures 138 - 142) (SE 1/4, Section 19, T15S R13E) UTM: 13/433640E/3650940N Otero County, New Mexico

Cloudcroft area, Lincoln Co., N.M.

Located on the Cloudcroft Ranger District, this 80 ft steel Aermotor MC-39 tower with a 7 ft by 7 ft steel cab was erected in 1933 by the CCC. The wood frame cabin was built in 1933 and the storage buildings in 1937. The cabin measures approximately 16 ft by 12 ft, has a simple gable roof and narrow wood slats for siding. The roof has wood shingles. The interior walls are plasterboard and the floors are hardwood. The storage shed has a simple gable wood shingled roof and measures approximately 7 ft by 10 ft. Both buildings sit on cement foundations. Because the Wofford lookout and associated buildings are over 50 years of age and have retained their integrity of original design, construction, location, setting, workmanship and materials,

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they are recommended for National Register eligibility. The boundary of the Wofford lookout complex is a square which measures 80 ft by 80 ft with the southeast corner of the tower fence situated in the southeast corner of the property. This excludes a radio storage shed which was a later addition to the complex and is not eligible. The area surrounding the complex within the boundary is not considered a "buffer area," but is integral to the setting of the property (see attached map).

Ruidoso Lookout Tower (Figure 143) (NE 1/4, Section 31, T11S R13E)
UTM: 13/438400E/3688070N Lincoln County, New Mexico

Ruidoso, Lincoln Co., N.M.

This lookout, a 30 ft high steel tower with a 14 ft by 14 ft wood cab, represents an Aermotor MI-25 type and was erected in 1940. It is located on the Smokey Bear Ranger District. The Aermotor MI-25 type is an unusual and rare type of lookout in the Southwestern Region. Only one other MI-25 is known, that being located on the Gila National Forest. The Ruidoso lookout does not appear to have experienced any major modifications since it was constructed. Because this lookout falls within the 1942 cutoff for this study and it retains its integrity of original design, construction, workmanship and materials, it is recommended for National Register eligibility. The boundary of the Ruidoso lookout tower is a square which measures 40 ft by 40 ft with the tower at the center. The area surrounding the tower within the boundary is not considered a "buffer area," but is integral to the setting of the property (see attached map).

Bluewater Lookout Complex (Figures 144 - 147) (SW 1/4, Section 9, T18S R14E) UTM: 13/456440E/3622500N Otero County, New Mexico

Ward Co., Lincoln Co., N.M.

Located on the Mayhill Ranger District, this 45 ft high steel tower with a 7 ft by 7 ft steel cab represents an Aermotor LX-24 type or an International Derrick Company tower. The Forest Service records are not clear on this point. Research efforts have not been able to clarify this. It appears that while the International Derrick Company did manufacture steel towers, they did not differ much from the more common Aermotor towers. Other Forest Service records cited by Irwin (1986) state that this lookout tower was built in 1917 for the United States Weather Bureau and sold to the Forest Service who erected it at this site in 1937. Study of historic photographs suggests that no major structural modifications have occurred. Although moved from its original location, this lookout has been in place at its present

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location and used as a fire detection facility for 50 years. The wood frame cabin and storage shed were built at this site in 1937. They have experienced little modification outside of normal maintenance over the years. The entire lookout complex, including the tower, cabin and storage shed, retains its integrity of original design, construction, workmanship, materials, setting, location and association and is recommended for National Register eligibility. The boundary of the Bluewater lookout complex is a square which measures 80 ft by 80 ft with the southwest corner of the storage building situated in the southwest corner of the property. The area surrounding the complex within the boundary is not considered a "buffer area," but is integral to the setting of the property (see attached map).

Weed Lookout Tower (Figures 148 - 149) (NE 1/4, Section 25, T17S R13E)
UTM: 13/447640E/3629770N Otero County, New Mexico

Sacramento mts., Lincoln N.F.

This Aermotor LX-24 lookout, located on the Mayhill Ranger District, was erected in 1926. It is the oldest surviving lookout on the Lincoln National Forest. The steel tower is 48 ft high and has a 7 ft by 7 ft steel cab. A wood frame storage building was removed in 1978. Historic photographs indicate no major structural changes have occurred. The wooden steps were replaced by metal ones in 1966 and a microwave dish was added for communication purposes in 1985. Otherwise, the lookout retains much of its integrity of original design, construction, location, setting, materials, workmanship and association and is recommended for National Register eligibility. The boundary of the the Weed lookout tower is a square which measures 50 ft by 50 ft with the tower at the center. The small metal radio shed is of recent construction and is a noncontributing property. The area surrounding the tower within the boundary is not considered a "buffer area," but is integral to the setting of the property (see attached map).

Carrisa Lookout Complex (Figures 150 - 154) (NW 1/4, Section 9, T19S R13E) UTM: 13/441960E/3615360N Otero County, New Mexico

Long Canyon mts., Lincoln N.F.

This Aermotor MC-39 lookout tower was erected in 1934-1935 and is located on the Mayhill Ranger District. It is an 80 ft high steel tower with a 7 ft by 7 ft steel cab. This lookout replaced earlier ones at this location. The wood frame cabin with a simple gable roof was built in 1935 and the storage shed in 1937. Neither of these

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structures show any modification from earlier photographs. The lookout tower has experienced no major structural changes. Because the lookout tower and support buildings all meet the age requirements and have retained integrity of original design, construction, setting, location, workmanship, materials and association, the entire Carrisa lookout complex is recommended for National Register eligibility. A fiberglass privy is recent and is not eligible. The boundary of the Carrisa lookout complex is a rectangle which measures 70 ft N-S by 100 ft E-W with the south corner of the cabin situated 10 ft north of the center of the south (E-W) boundary. The area surrounding the complex within the boundary is not considered a "buffer area," but is integral to the setting of the property (see attached map).

Prescott National Forest

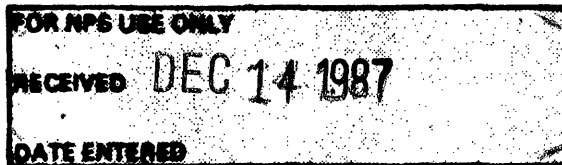
The Prescott National Forest encompasses over one million acres of land in north-central Arizona. This National Forest has important timber, forage, recreation and historic resources. This National Forest surrounds the town of Prescott which was the first territorial capital of Arizona. For many years, the mining industry was important to the economy of the area, and the forests supplied wood for this industry. The Prescott Forest Reserve was created on May 10, 1898. The Verde Forest Reserve was created on December 30, 1907. On July 2, 1908, the Prescott and Verde National Forests were consolidated under the name of Prescott National Forest. On October 22, 1934, 249,201 acres of the Tusayan National Forest were transferred to the Prescott National Forest.

Mount Union Lookout Cabin (Figures 155 - 157) (NE 1/4, Section 6, T12N R1W) UTM: 12/371860E/3809800N Yayapai County, Arizona

Patalsie Patch vic., Prescott N.F.

This 30 ft high steel tower with 12 ft by 12 ft wood cab is an Aermotor MC-24 and was erected in 1933 by CCC crews. It is located on the Bradshaw Ranger District. The lookout tower has experienced extensive modification including window replacement in 1979, new roofing in 1982, new stairs in 1983, and new siding in 1982. The cabin has experienced no major structural changes. The lookout tower has lost its integrity of original design and construction and is not recommended for National Register eligibility. The cabin with a simple gable roof, a 6 ft overhanging porch, interior oak floors and

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paneling and redwood siding has retained its integrity of original design and construction and is recommended for National Register eligibility. Three radio sheds and a privy are more recent additions to the complex and are not eligible. The boundary of the Mount Union lookout cabin is a square which measures 40 ft by 40 ft with the cabin at the center. The area surrounding the cabin within the boundary is not considered a "buffer area," but is integral to the setting of the property (see attached map).

Mingus Lookout Complex (Figures 158 - 161) (NW 1/4, Section 30, T15N R2W) UTM: 12/396765E/3839510N Yavapai County, Arizona

Mingus Mtn., Prescott N.F.

Located on the Verde Ranger District, this 59 ft steel x-brace tower with a 7 ft by 7 ft steel cab was erected in 1935. The lookout tower was designed by the Pacific Coast Steel Company. The wood frame cabin, a simple gable roofed structure with an overhanging front porch was also built in 1935. Study of historic photographs indicates that no major structural changes have occurred to either the lookout tower or the cabin. A wood frame shed is of the same vintage and probably dates to 1935. Because both structures are over 50 years old and retain their integrity of original design, construction, workmanship, materials, setting, location and association, both are recommended for National Register eligibility. A more recent wood privy is not eligible. The boundary of the Mingus lookout tower and cabin is a rectangle which measures 40 ft N-S by 180 ft E-W with the tower in the southeast corner. The area surrounding the tower and cabin within the boundary is not considered a "buffer area," but is integral to the setting of the property (see attached map).

Hyde Mountain Lookout House (Figures 162 - 164) (SE 1/4, Section 20, T17N R6W) UTM: 12/324490E/3856500N Yavapai County, Arizona

Camp Wood Mtn., Prescott N.F.

This 12 ft by 12 ft wood L-4 lookout house was built probably by a CCC crew in 1936 and is located on the Chino Valley Ranger District. The lookout is accessible only by a two mile trail. This L-4 type of lookout house is the only one of its style on the Prescott National Forest. Despite modification to the windows, the Hyde Mountain lookout retains much of its integrity of original design, construction, materials, workmanship, setting and location and is recommended for National Register eligibility. A storage shed located

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northwest of the lookout house is of more recent construction and is not eligible. The boundary of the Hyde Mountain lookout tower is a square which measures 40 ft by 40 ft with the tower at the center. The area surrounding the tower within the boundary is not considered a "buffer area," but is integral to the setting of the property (see attached map).

Santa Fe National Forest

The Santa Fe National Forest encompasses over 1.5 million acres managed by the Forest Supervisor's office in Santa Fe, New Mexico. This National Forest contains abundant wildlife, timber and forage resources. It also includes the Pecos wilderness area. Tourism, the livestock industry and timber are important mainstays of the economy of north-central New Mexico and are closely tied to National Forest resources. The Santa Fe National Forest was created from the consolidation of the Jemez and Pecos National Forests. Previously, the Pecos Forest Reserve had been created by presidential order in 1892, the first in the Southwestern Region. The Jemez Forest Reserve had been created in 1905.

Glorieta Baldy Lookout Tower (Figures 165 - 166) (NW 1/4, Section 5, T16N R11E) UTM: 13/427650E/3945220N San Miguel County, New Mexico

La Cueva Vieja, Santa Fe Natl.

This 30 ft high steel Aermotor MC-24 tower with a 12 ft by 12 ft wooden cab was constructed in 1940 and is located on the Pecos Ranger District. Review of historic photographs indicates that no major structural changes have been made since the tower was built. Because the Glorieta Baldy lookout represents one of the best examples of an Aermotor MC-24 tower and retains excellent integrity of original design, construction, materials, workmanship, location and setting, it is recommended for National Register eligibility. The boundary of the tower is a square which measures 40 ft by 40 ft with the tower at the center. The area surrounding the tower within the boundary is not considered a "buffer area," but is integral to the setting of the property (see attached map).

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Tonto National Forest

The Tonto National Forest includes 2.9 million acres of forest and desert country extending from the Mogollon Rim to just northwest of Phoenix. This National Forest contains abundant water, timber, recreation, wildlife and forage resources. The Salt and Verde River watersheds provide water for the Phoenix area. The National Forest contains four wilderness areas: the Sierra Ancha, the Pine Mountain, the Mazatzal and the Superstition. The Tonto Forest Reserve was created on October 3, 1905. In 1934, 151,285 acres of the Bloody Basin area on the Prescott National Forest were transferred to the Tonto National Forest.

Diamond Point Lookout Cabin (Figure 167) (Section 23, T11N R11E)
UTM: 12/482320E/3793850N

Gila County, Arizona

Tonto Village Vic., Tonto National Forest

This 30 ft high steel Aermotor MC-24 tower with a 12 ft by 12 ft cab is located on the Payson Ranger District and was erected in the fall of 1936 by a CCC crew. The wood frame cabin was built in 1941. The lookout tower has been modified. Metal steps were added in 1984 and at an unknown date the original windows were replaced with sliding aluminum windows and the wooden shutters removed. The wood frame cabin with a simple gable roof and shiplap siding is little changed from when it was built. A garage barn built at the site in 1941 was destroyed in 1972. The lookout tower has lost its integrity of original design and construction and is not recommended for National Register eligibility. The wood frame cabin has retained its integrity of original design, construction, workmanship and materials and is recommended for National Register eligibility. A more recent privy of unknown date is not eligible. The boundary of the Diamond Point lookout cabin is a square which measures 40 ft by 40 ft with the cabin at the center. The area surrounding the cabin within the boundary is not considered a "buffer area", but is integral to the setting of the property (see attached map).

Summary

Table 1 presents a summary listing of lookouts and associated structures nominated to the National Register under this thematic nomination. Thirty-one lookouts were recommended for nomination to the National Register. The earliest one was built in 1923. The majority

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date from the 1930s and are distinguished by the lack of any major structural modification. All of these retain their integrity of original design, construction, workmanship, materials, location, setting and feeling and association, as well as retaining site integrity. Fifty-three associated support structures, including cabins, storage sheds and privies, barns, corrals, cisterns and walls, were recommended for nomination to the National Register. The earliest surviving fire detection related structure in the Southwestern Region, a 1909 cabin at Canjilon lookout on the Carson National Forest in New Mexico, is within this group as well as a 1911 cabin at Kendrick lookout on the Kaibab National Forest. The recommended outbuildings exhibit no major structural changes and retain their integrity of original design, construction, workmanship, materials, location, setting and feeling and association.

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TABLE 1

Nominated Fire Lookout Towers and Associated Structures
of the Southwestern Region

N	Aermotor Tower Types							Other Tower Types				Associated Structures	
	MC-39	LX-24	MI-25	MC-24	LL-25	MC-40	LS-40	CT-2	L-4/L-5 Houses	Pacific Coast Steel	Inter Derrick		
<u>Forest</u>													
Apache/Sit.	5	0	1	0	2	1	0	1	0	0	0	0	10
Carson	0	0	0	0	0	0	0	0	0	0	0	0	1
Cibola	0	0	0	0	0	0	0	0	0	0	0	0	0
Coconino	3	0	0	0	0	0	0	0	1	0	1	1	3
Coronado	7	0	0	0	0	0	3	0	0	4	0	0	13
Gila	4	0	0	0	1	0	2	0	0	0	0	0	10
Kaibab	3	3	0	0	0	0	0	0	0	0	0	0	6
Lincoln	6	2	2	1	0	0	0	0	0	0	0	1	6
Prescott	2	0	0	0	0	0	0	0	0	1	1	0	3
Santa Fe	1	0	0	0	1	0	0	0	0	0	0	0	0
Tonto	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	31	5	4	1	4	1	5	1	1	5	2	2	53

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TABLE 2

SUMMARY OF FIRE LOOKOUTS CONTAINING NOMINATED PROPERTIES

(* = Noncontributing structure within property boundary)

<u>Forest/Lookout</u>	<u>Structured Type</u>	<u>Date</u>	<u>Eligible</u>
<u>Apache/Sitgreaves NF</u>			
PS Knoll (CCC)	Aermotor MC-40	1933	Yes
	cabin	1939	Yes
	storage shed	1939	Yes
	privy	1940	Yes
Bear Mountain (CCC)	Aermotor MC-24	1933	Yes
	cabin	1940	Yes
	storage shed	1928	Yes
	privy	1940	Yes
Lake Mountain	Aermotor LX-24	1926	Yes
	cabin	1926	Yes
	* privy	Unknown	No
Deer Springs	Aermotor LL-25	1923	Yes
	cabin	1923	Yes
	* privy	Unknown	No
Promontory Butte	Aermotor LS-40	1924	Yes
	cabin	1924	Yes
	storage shed	1924	Yes
<u>Carson NF</u>			
Canjilon	cabin	1909/1910	Yes
<u>Coconino NF</u>			
Moqui	CL-100/106	1952	No
Woody Mountain (CCC)	cabin	1932	Yes
	Pacific Coast Steel	1936	Yes
	cabin	1982	No
	shower, shed, privy	Unknown	No
Mormon Lake	Aermotor LX-24	1927	No
	cabin	1928	Yes
Buck Mountain (CCC)	CT-2/L-4	1939	Yes
	shed, privy	Unknown	No
Lee Butte	Internat'l Derrick	1933	Yes
	cabin	1933	Yes
	showerhouse, trailer	Unknown	No

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Coronado NF

Atascosa	L-4 house	1930-1933	Yes
	privy	1933	Yes
	cistern	1933	Yes
Barfoot (CCC)	L-4 house	1935	Yes
	shed	1935	Yes
	privy	1935	Yes
	cistern	1935	Yes
	retaining wall	1935	Yes
Lemmon Rock	L-4 house	1928	Yes
	* privy	Unknown	No
Webb Peak (CCC)	Aermotor MC-40	1933	Yes
	cabin	1960-1962	No
	privy	Unknown	No
West Peak (CCC)	Aermotor MC-40	1933	Yes
	cabin	1959	No
	privy	Unknown	No
Heliograph (CCC)	Aermotor MC-40	1933	Yes
	log cabin	1933	Yes
	wood frame barn	1933	Yes
	privy	1933	Yes
	* communications bldg.	Unknown	No
	TV powerhouse	Unknown	No
Monte Vista	CL-100/106	1966	No
	cabin (CCC)	1933	Yes
	metal storage shed, privy	Unknown	No
Silver Peak (CCC)	L-4 house	1938	Yes
	storage shed	1938	Yes
	privy	1938	Yes
	water cistern	1938	Yes

Gila NF

Mogollon Baldy	Aermotor MI-25	1948	No
	cabin	1923	Yes
	metal privy	Unknown	No
Mangas Mountain (CCC)	Aermotor MC-24	1934	Yes
	cabin	1934	Yes
	* metal privy	Unknown	No
Reeds Peak	Aermotor LX-24	1929	Yes
	cabin	1959	No
	privy, shed	Unknown	No

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Bearwallow Mountain	*	Aermotor LX-24	1923	No
		cabin	1923	Yes
		cabin	1940	Yes
		privy	1940	Yes
		storage shed	1923-1940	Yes
Black Mountain		Aermotor MC-24	1934	No
		cabin	1925	Yes
		metal shed, privy	Unknown	No
Hillsboro		Aermotor MC-40	1933	Yes
		cabin	1925	Yes
	*	metal Butler building	Unknown	No
	*	fiberglass privy	Unknown	No
		wood privy/metal shed	1940 (privy)	No
El Caso (CCC)		Aermotor MC-24	1934	Yes
		cabin	1934	Yes
		privy	1934	Yes
<u>Kaibab NF</u>				
Jacob Lake		Aermotor MC-39	1934	Yes
Big Springs		Aermotor MC-39	1934	Yes
		cabin	1959	No
Dry Park	*	Aermotor MC-99	1944	No
		cabin	1936	Yes
		2 storage buildings	1936	Yes
Kendrick		CL-100/106	1964	No
		cabin	1911	Yes
Volunteer		CL-100/106	1963	No
		cabin (CCC)	1939	Yes
		storage shed	Unknown	No
Grandview		Aermotor MC-39	1936	Yes
		cabin (CCC)	1936	Yes
		2 privies	Unknown	No
<u>Lincoln NF</u>				
Monjeau (CCC)		Internat'l Derrick 7ft by 7 ft. cab on stone base	1940	Yes

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Wofford (CCC)	Aermotor MC-39	1933	Yes
	cabin	1933	Yes
	storage shed	1937	Yes
	radio shed	Unknown	No
Ruidoso (CCC)	Aermotor MI-25	1940	Yes
Bluewater (CCC)	Aermotor LX-24/ Internat'l Derrick	1937	Yes
	cabin	1937	Yes
	storage shed	1937	Yes
Weed	Aermotor LX-24	1926	Yes
	radio shed	Unknown	No
Carrisa	Aermotor MC-39	1934/1935	Yes
	cabin	1935	Yes
	storage shed	1937	Yes
	fiberglass privy	Unknown	No

Prescott NF

Mt. Union	Aermotor MC-24	1933	No
	cabin	1933	Yes
Mingus (CCC)	3 radio sheds, privy	Unknown	No
	Pacific Coast Steel	1935	Yes
	cabin	1935	Yes
	storage shed	1935 ?	Yes
	privy	Unknown	No

Hyde Mountain (CCC)	L-4 lookout house	1936	Yes
	storage shed	Unknown	No

Santa NF

Glorieta Baldy	Aermotor MC-24	1940	Yes
----------------	----------------	------	-----

Tonto NF

Diamond Point (CCC)	Aermotor MC-24	1936	No
	cabin	1941	Yes
	privy	Unknown	No

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TABLE 3

SUMMARY OF LOOKOUTS AND ASSOCIATED STRUCTURES BY FOREST

<u>National Forests</u>	<u>No. of Lookouts</u>	<u>Lookout Towers, Houses--Not Eligible</u>	<u>Lookout Towers, Houses--Eligible</u>	<u>Associated Structures Eligible</u>
Apache-Sitgreaves	16	11	5	10
Carson	3*	2	0*	1*
Cibola	7	7	0	0
Coconino	12	9	3	3
Coronado	10	3	7	13
Gila	13	9	4	10
Kaibab	10	7	3	6
Lincoln	9	3	6	6
Prescott	6	4	2	3
Santa Fe	8	7	1	0
Tonto	7	7	0	1
Totals	101	69	31	53

*One of the lookout sites on the Carson National Forest has only a cabin, no lookout tower.

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Figure 2 (1 sheet). Tree development observatory, 1933,
Kootenai National Forest, Montana and Clearwater
National Forest, Idaho.

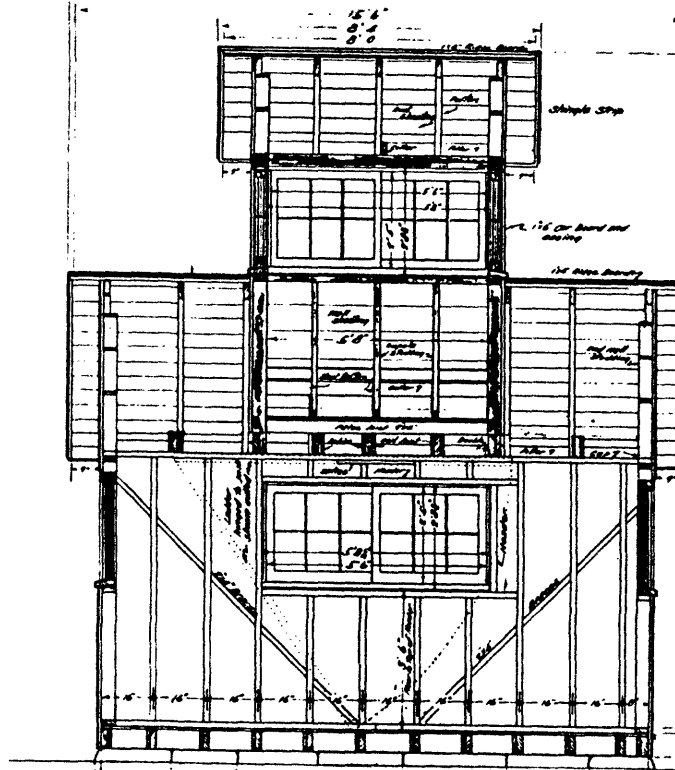
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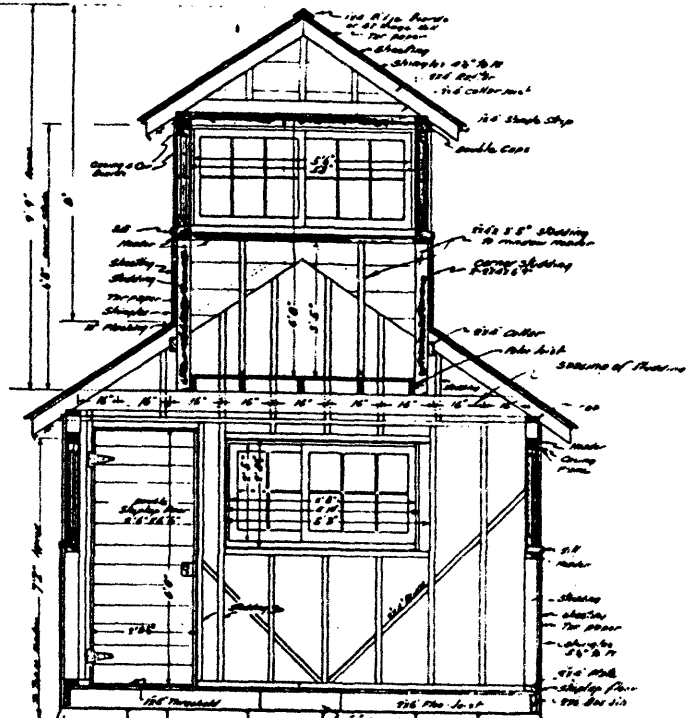
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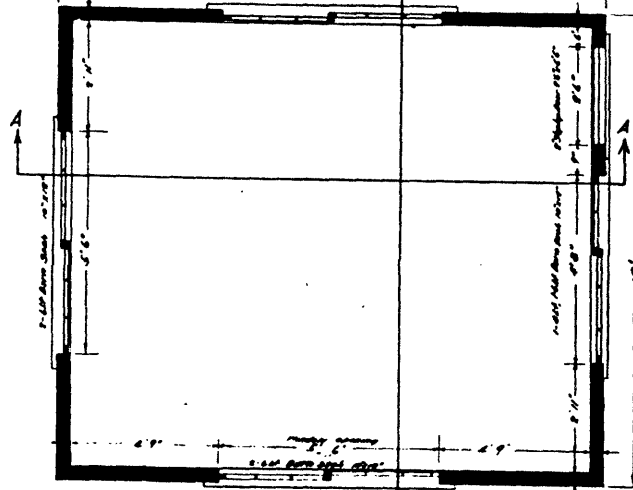
Figure 3 (2 sheets). Frame lookout house, Plan L-2, 1928,
Northern District No. 1.



SIDE CROSS SEC A-A

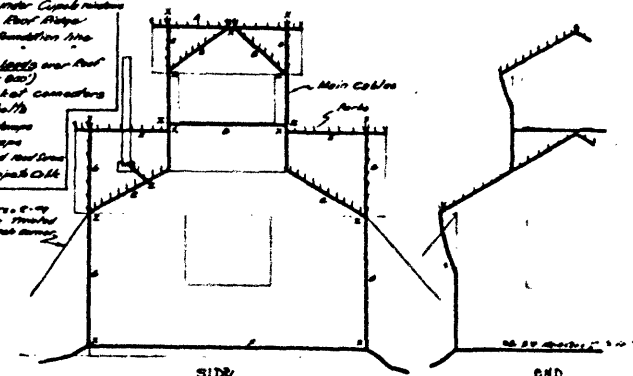


2ND CROSS SEC B-B



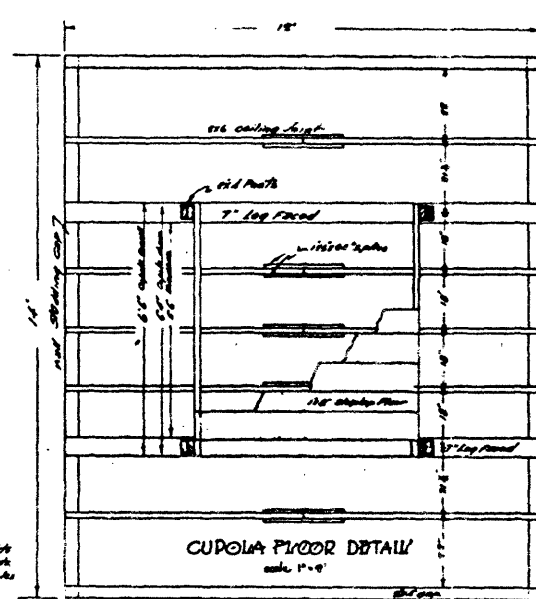
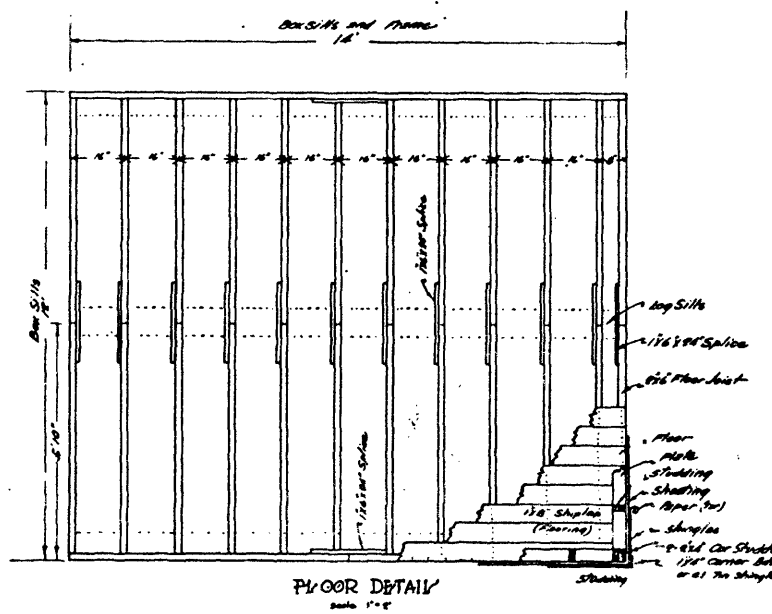
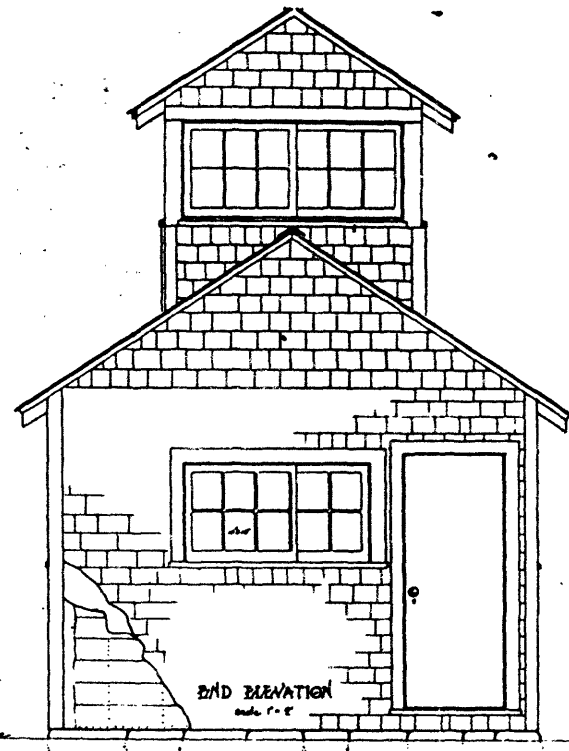
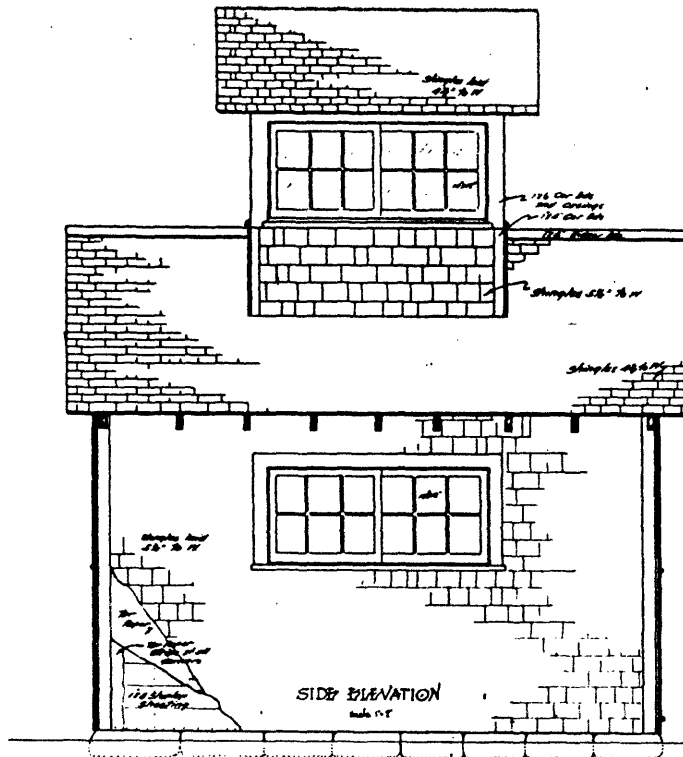
FLOOR PLAN

- LIGHTNING PROTECTION MATERIAL**
 Use #10 AWG wire or Copperweld or
 1/8" galvanized cable as desired
- A 1 2" Coping Strips
 - B 2 1/2" Roof Slopings
 - C 4 1/2" Down and Main Floor Joists
 - D 4 1/2" Ball and Main Floor Joists
 - E 2 1/2" Main Floor Joists
 - F 2 1/2" Ball and Main Floor Joists
 - G 2 1/2" Main Floor Joists
 - H 2 1/2" Main Floor Joists
 - I 2 1/2" Main Floor Joists
 - J 2 1/2" Main Floor Joists
 - K 2 1/2" Main Floor Joists
 - L 2 1/2" Main Floor Joists
 - M 2 1/2" Main Floor Joists
 - N 2 1/2" Main Floor Joists
 - O 2 1/2" Main Floor Joists
 - P 2 1/2" Main Floor Joists
 - Q 2 1/2" Main Floor Joists
 - R 2 1/2" Main Floor Joists
 - S 2 1/2" Main Floor Joists
 - T 2 1/2" Main Floor Joists
 - U 2 1/2" Main Floor Joists
 - V 2 1/2" Main Floor Joists
 - W 2 1/2" Main Floor Joists
 - X 2 1/2" Main Floor Joists
 - Y 2 1/2" Main Floor Joists
 - Z 2 1/2" Main Floor Joists
- Total 776 (Order Book)
 1 1/8" corner brackets
 150 #10 AWG bolts
 2 1/2" 1/8" galvanized
 100 #10 AWG Straps
 360 #10 AWG Steel Rods
 Attach to wood studs with nails



SIDE LIGHTNING PROTECTION DIAGRAM END

FRAME LOOKING
 HOUSE
 PLAN L-2



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1.	ELEVATION & FLOOR
2.	DETAIL FLOOR PLAN & LIGHTNING PROTECTION
3.	BILLS OF MATERIAL & SPECIFICATIONS

U.S. DEPT. OF AGRICULTURE
 FOREST SERVICE DIST. NO. 1
FRAME LOOKOUT HOUSE
 PLAN L-2
 Approved by *[Signature]*
 L. R. *[Signature]*
 P. 10/20/20 or 908 Sheet 1015

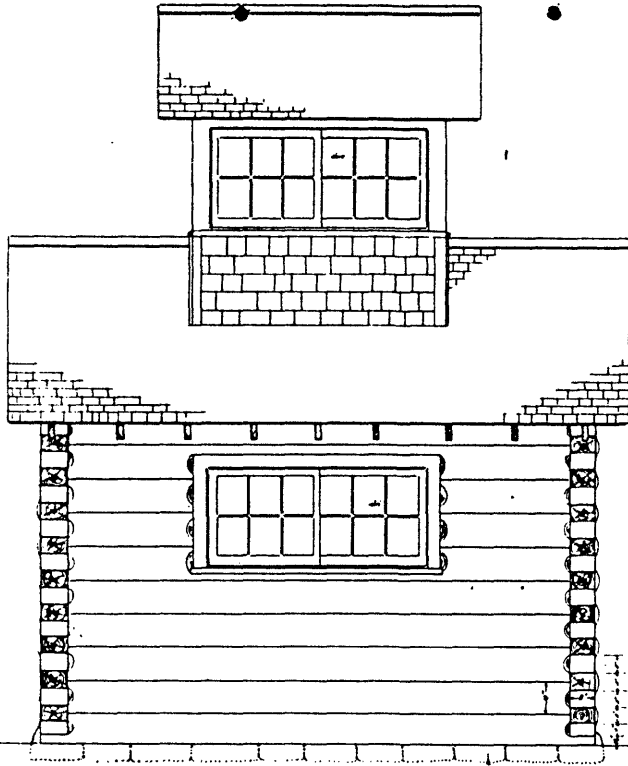
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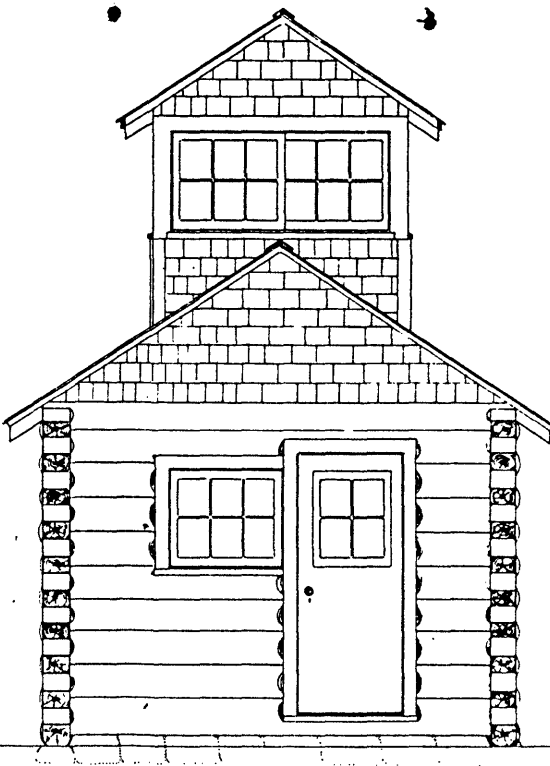
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Figure 4 (2 sheets). Log lookout house, Plan L-3, 1928,
Northern District No. 1.



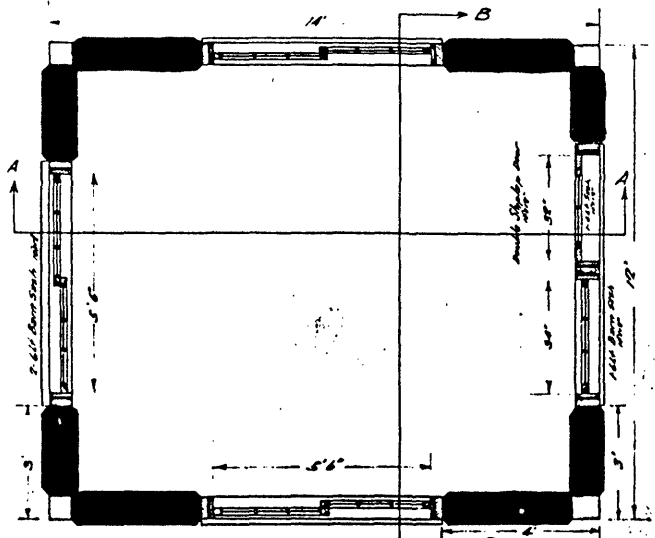
SIDE ELEVATION



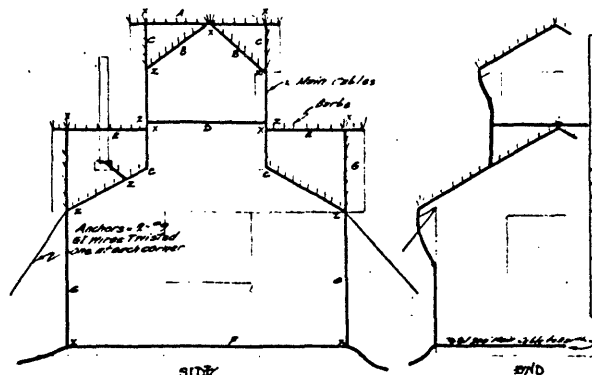
END ELEVATION
Scale 1"=1'

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1. ELEVATIONS, FLOOR PLAN & LIGHTNING PROTECTION
2. CROSS SECTIONS & DETAILS
3. BILLS OF MATERIAL & SPECIFICATIONS



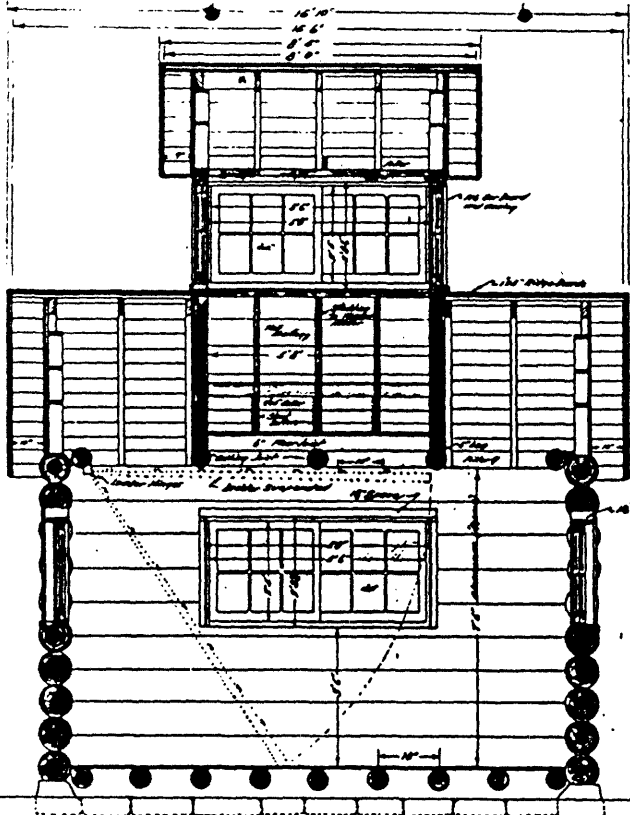
FLOOR PLAN
Scale 1"=1'



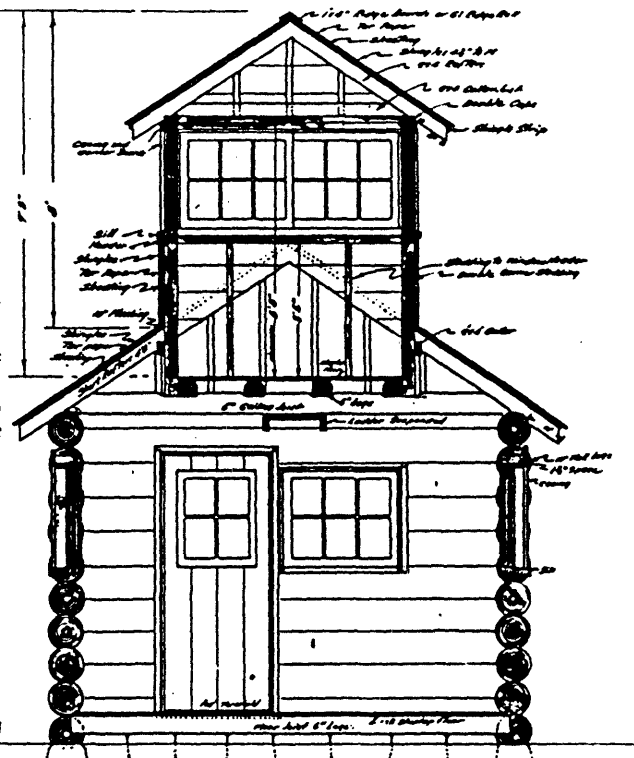
LIGHTNING PROTECTION DIAGRAM

- LIGHTNING PROTECTION MATERIAL
- Use #6 GI Wire or Copper-clad or #2 Galvanized cable as specified
- A 1 1/2" Capole Spike
 - B 2 1/2" Roof diagonal
 - C 4 1/2" Long Main Rod & wire clamps
 - D 4 1/2" Bolt, Nut & Washer
 - E 2 5" Main Rod, Flange
 - F 2 1/2" Bolt, Flange
 - G 2 1/2" Bolt
 - H 4 1/2" Main Rod, Cover Rod
 - Total 776' (over 800')
 - X 13 corner Bracket Connectors
 - 160 #7/8" Scribe bolts
 - 11 2 Bolt Guyclamps
 - 100 #6 GI Pipe Straps
 - 360 #6 x 1/8" Flat nail in one
 - Material to band scribe pipe cable

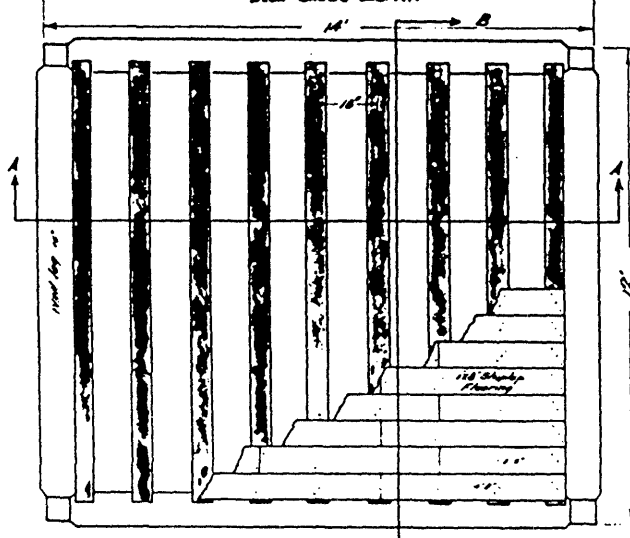
U.S. DEPT. OF AGRICULTURE
FOREST SERVICE DIST. #1
LOG LOOKOUT HOUSE
PLAN L-3
Approved by J.C. Lockhart
Trillium Apr 1925 sheet 1 of 3



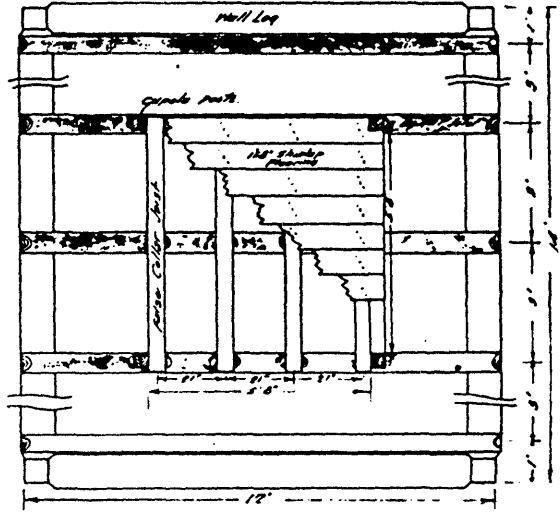
SIDE CROSS SEC. A-A



END CROSS SEC. B-B



FLOOR DETAIL



CUPOLA FLOOR DETAIL

LOG LOOKOUT
HOUSE
PLAN 1-3
Sheet 2-3

scale 1/8"

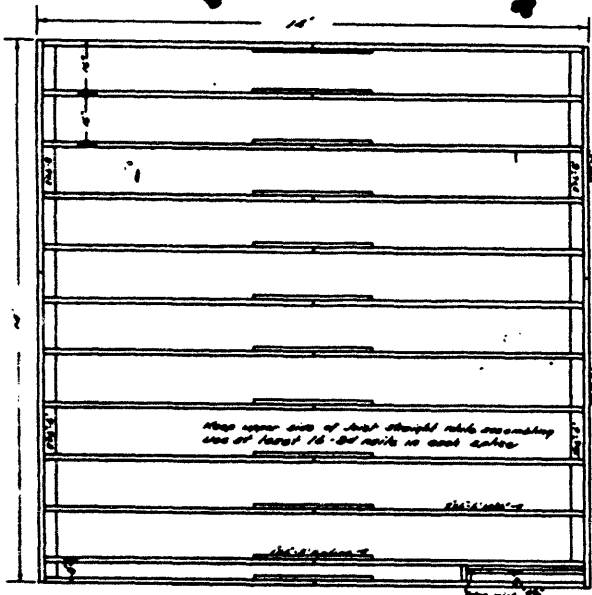
United States Department of the Interior
National Park Service

DEC 14 1987

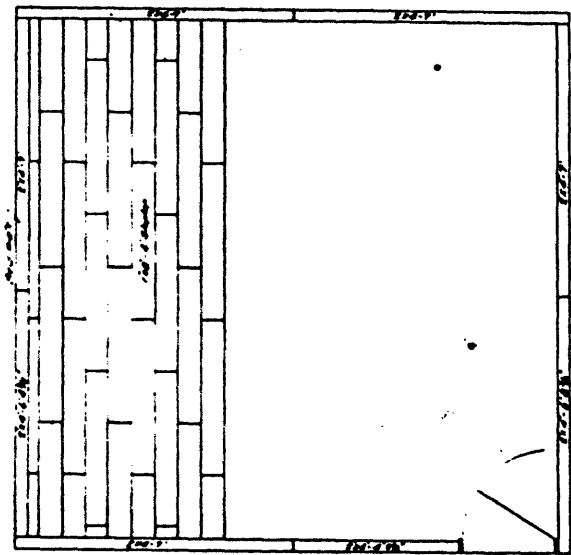
National Register of Historic Places Continuation Sheet

Section number 7 Page 56

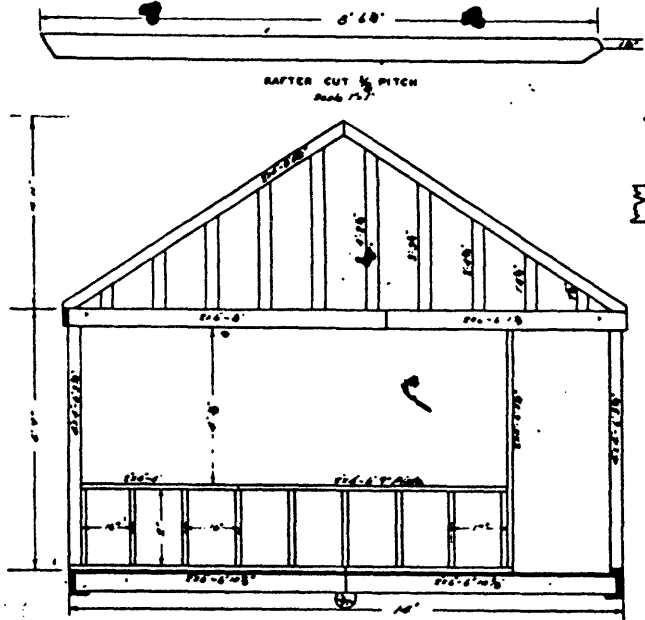
Figure 5 (5 sheets). Lookout house, Plan L-4, 1930 (1931
revision), Northern District No. 1.



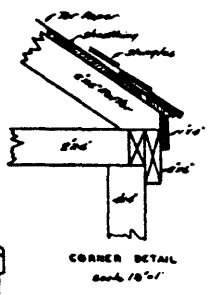
JOIST FRAMING PLAN



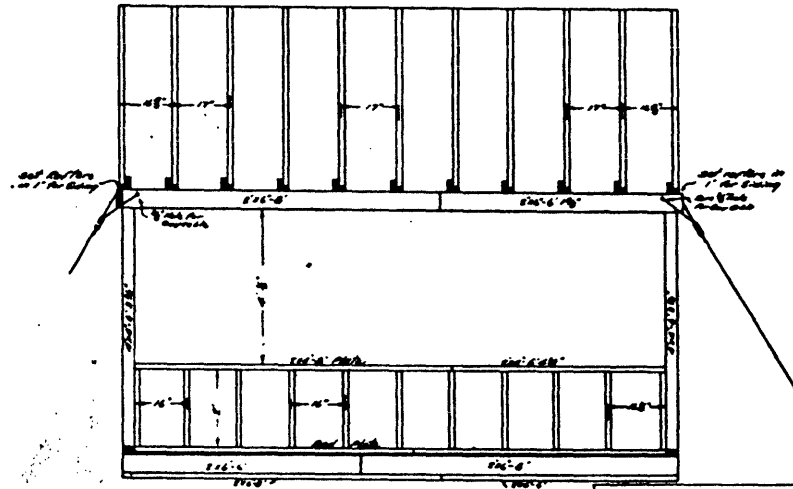
FLOOR PLAN



FRONT FRAMING DETAIL

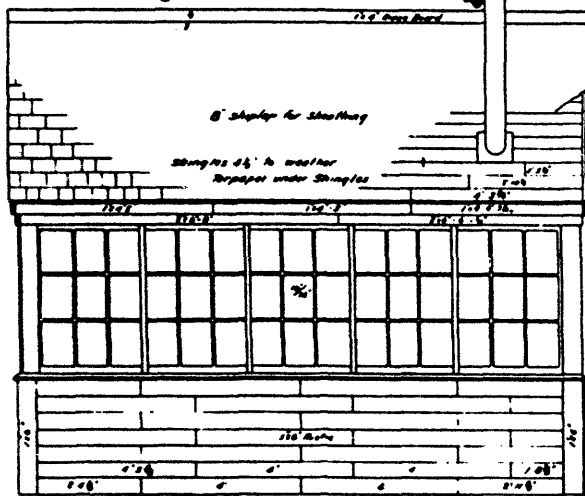


CORNER DETAIL



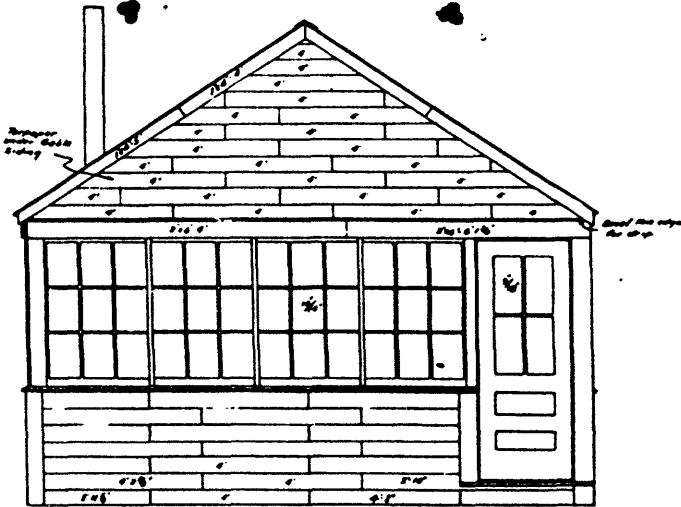
SIDE FRAMING PLAN

U. S. DEPT. OF AGRICULTURE
 FOREST SERVICE REGION NO. 1.
LOOKOUT HOUSE
 PLAN L-4
 DESIGNED BY C. P. FIERES
 APPROVED BY *[Signature]*
 DEC. 1939. SHEET 1 OF 8

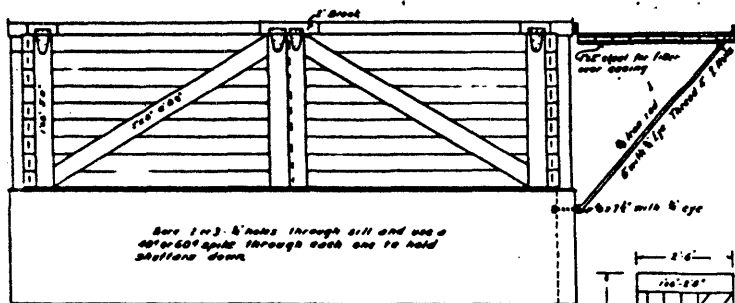


SIDE ELEVATION

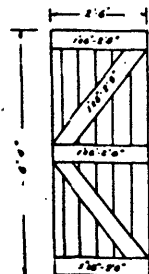
note - Put siding on from the top down over tar paper.



FRONT ELEVATION

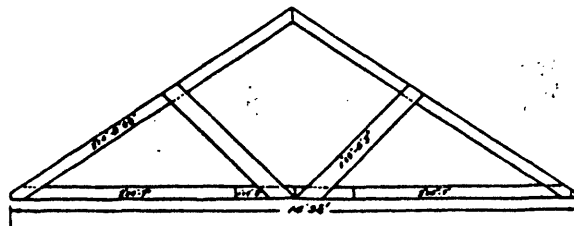


WINDOW SHUTTER DETAIL

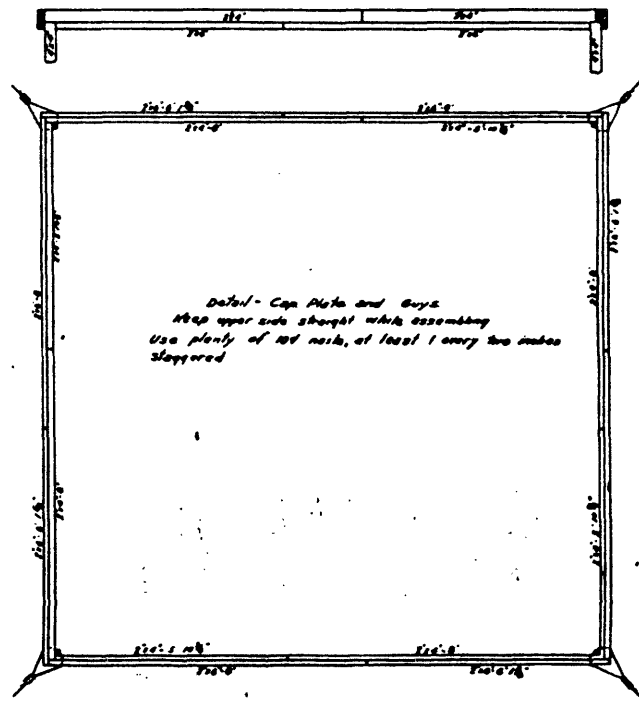


DOOR SHUTTER

Sash 1 1/2"



DETAIL OF SWAY BRACING



LOOKOUT HOUSE
PLAN L-4

DEC. 1930
207 No. 120

SHEET 2 OF 3

8 SIGNIFICANCE

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

SPECIFIC DATES 1905-1942

BUILDER/ARCHITECT USDA Forest Service
Civilian Conservation Corps

STATEMENT OF SIGNIFICANCE

Summary

The significance of the USFS historic fire detection facilities as a thematic group lies in their direct association (Criterion a - 36CFR60.6(a)) with (1) the history of the development of the Forest Service as it relates to fire protection and detection, specifically in this case, the Southwestern Region, from 1905 to 1942; (2) the political and legislative events of Roosevelt's New Deal policies, in particular, the development, implementation and coordination of the Civilian Conservation Corps (CCC) directly in US Forest Service projects from 1933 to 1942; and (3) to a somewhat lesser degree, the conservation movement and its influence on public land management from 1905 to 1942. Additionally, the USFS historic fire detection facilities, as a thematic group under Criterion c - 36CFR60.6(c), are significant in that they embody the evolution of a distinctive architectural style from 1905 to 1942 which in time became characterized by standardized plans as a result of the specific functional requirements: (a) fire detection and (b) provisions for the reasonable comfort and housing of those required to staff the often isolated facilities. All of the structures included in this thematic nomination have retained sufficient integrity of location, design, construction, setting, materials, workmanship and feeling and association to preserve their historic identities and their direct association with

- 1) the development of the Southwestern Region of the USFS with regards to fire detection and protection (1905 to 1942),
- 2) the utilization of the CCC during the depression era (1933 to 1942),
- 3) the influence of the conservation movement in terms of public land management (1905 to 1942) and
- 4) the development of a functionally specific architectural style (1905 to 1942).

The period of significance for this thematic group is from 1905 to 1942. The earlier date marks the formal establishment of the USFS in the Department of Agriculture with Gifford Pinchot as the first chief.

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The later date marks the termination of the CCC (organized in 1933) which played such an important role in the physical construction of so many lookouts in the Southwestern Region.

The significance of the lookouts in this nomination is at the state level for Arizona and New Mexico. It reflects national trends manifested at the state level and to a lesser degree at the local level.

The USFS fire lookouts and their support structures represent a thematic group related by historic context, architectural style and function. They reflect solutions to the problem of protective management of our National Forests as developed by the USFS from efforts initiated by the conservation movement. This group has an additional significance because of its strong and direct association with the Great Depression and efforts of the federal government to provide economic relief through programs such as the CCC. The fire lookouts also represent a variety of architectural styles that evolved through time and culminated in the development of standardized plans for lookouts in the 1930s. These historical associations are common in varying degrees for all the properties in the thematic group.

It is hoped that the results of this study can be used as a basis for the development of a management plan to protect and preserve these fire lookouts and their outbuildings. Most of the earliest lookout towers built prior to 1930 are gone and the remaining group represents an important nonrenewable historic resource that should be protected as an important example of the history and contributions of the Forest Service.

The historic context of these topics is discussed in detail in the following material.

Context 1: The Forest Service and Fire Detection in the Southwestern Region (1905 to 1942)

In 1891 the United States Congress passed the General Provision Act which enabled the President to designate and set aside certain specified areas of forested public lands as reserves. The first reserve created under this act was the Yellowstone Reserve in Wyoming. In the Southwest, the Pecos River Forest Reserve was established in 1892, followed by others including:

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- 1893 Grand Canyon Forest Reserve
- 1898 Black Mesa Forest Reserve
- Prescott Forest Reserve
- San Francisco Mountain Forest Reserve
- 1902 Santa Rita Forest Reserve
- Santa Catalina Forest Reserve
- Chiricahua Forest Reserve
- Lincoln Forest Reserve
- 1905 Tonto Forest Reserve
- Jemez Forest Reserve
- Portales Forest Reserve
- 1906 Galinas Forest Reserve
- Manzano Forest Reserve
- Magdalena Forest Reserve
- San Mateo Forest Reserve
- Mount Taylor Forest Reserve
- Baboquivari Forest Reserve
- Huachuca Forest Reserve
- 1906 Tumacacori Forest Reserve
- Peloncillo Forest Reserve
- Taos Forest Reserve
- 1907 Big Burros Forest Reserve
- Verde Forest Reserve

In February 1905, the Secretary of Agriculture, James Wilson, issued a directive that announced the transfer of the Forest Reserves, then under the supervision of the Government Land Office in the Department of the Interior, to the Department of Agriculture, Division R, soon to be renamed the United States Forest Service (USFS). This was to have a profound effect on the people of Arizona and New Mexico. It concluded a series of events begun under Franklin Kough in 1873, continued by Bernhard Fernow in the 1880s and 1890s, and ended by the efforts of Gifford Pinchot and President Theodore Roosevelt after the turn of the century to preserve and protect the forest lands of the United States. The growth of the American Conservation Movement was to continue and often take different paths from the policies of the Forest Service, but the Transfer Act in 1905 represented an important milestone in the development of the USFS, specifically the Southwestern Region.

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Because of the Transfer Act, twenty million acres of public lands in Arizona and New Mexico were to be administered by a district office of the United States Forest Service, headed in Washington, D.C. by one of the leaders of the American Conservation Movement and one of America's most able civil administrators, Gifford Pinchot. The policies of the Forest Service had a firm base in professional forestry which had been established during the previous twenty years by America's first professional forester, Bernhard Fernow. Now, Gifford Pinchot and his small group of student assistants, men such as Henry Graves, William Greeley and Ferdinand Silcox, were to refine and elaborate on a comprehensive system of management for the nation's forest resources with one of their major concerns being the control of wildfire on USFS lands.

In 1908, Chief Forester Gifford Pinchot appointed Arthur Ringland the first District Forester for the Southwestern District (later to be renamed Southwestern Region). The Forest Service was mandated to preserve the forest lands while allowing for their economic and recreational use. The Organic Administration Act of 1897 reflected the dual concern of Congress for not only the protection of federally administered forests but also the agricultural, timber, mining and livestock interests that were economically dependent on the resources of forest lands.

Although range management has been a major focus of the Forest Service in the Southwestern Region, forest fire control and prevention also have been critical concerns. The earliest foresters in the Southwest believed fire to be the preeminent threat to the forest resources (Tucker & Fitzpatrick 1972:49-59). In the initial inventories of the newly created forests, evidence of past forest fire damage was clearly evident. In the late seventeenth century, a fire in the San Francisco Mountains area burned over 18,000 acres (Leiberg, Rixon and Dodwell 1904:26-27). In the 1880s, forest fires near Santa Fe burned for weeks (Tucker and Fitzpatrick 1972:49). Lang and Stewart (1909:17-19) reported extensive fire damage on the Kaibab Forest Reserve, stating:

vast denuded areas, charred stubs and fallen trunks and the general prevalence of blackened poles seems to indicate their frequency and severity long before this country was explored by white men.

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During his inventory of the Grand Canyon Division of the Tusayan National Forest, Allison (1910:14-15) reported little evidence of fire damage, but in the Carson National Forest Loveridge (1921:11) noted extensive damage in the Douglas fir stands.

In 1922, the management plan for the Mount Graham Division of the Crook National Forest in Arizona noted that ground fires and grazing were highly destructive of seedlings and prevented regeneration. The Forest Service recognized early on that recently logged areas were high hazard zones for fire (Baker et al., 1986:183-184).

Leopold (1923) in a report on the forest conditions on the Santa Fe National Forest felt that the damage from grazing was more extensive than that from fire. He believed that damage from grazing since white settlement far exceeded any evidence of prehistoric fire episodes. Both grazing and fire contributed to the deterioration of the forests in the Southwest.

Before the forests of the Southwest came under the administration of the Forest Service in 1905, there was no systematic approach to fire control. Fire control consisted largely of patrols by rangers on horseback. In 1903, Tom Stewart started work as a ranger on the Pecos Forest Reserve. On his first patrol he rode to the top of the mountains and observed two smokes from fires (Tucker and Fitzpatrick 1972:49). During these patrols on the forests of the Southwest, rangers were to locate many mountain top sites for observation that would later be utilized for fire lookout structures.

The instructions given new rangers included patrolling the district and watching for smokes. The first Forest Service Use Book stated:

Officers of the Forest Service, especially Forest Rangers, have no duty more important than protecting the Reserves from forest fires.

In 1908 the initial systematic fire control program for the Southwest Region was prepared by Arthur Ringland, the first District Forester (Tucker and Fitzpatrick 1972:59-61). He suggested that a study of forest conditions and the development of a fire plan were necessary on all forests. He specifically recommended telephone lines to connect the lookouts to the ranger stations.

It appears that Ringland's suggestions were followed on several forests. On the Santa Catalina Forest, Stanley Wilson constructed a log fire lookout on Mount Bigelow in 1909. On the Datil National Forest, Supervisor W.F. Goddard asked his forester to develop a fire plan for the districts (Baker et al. 1986:189).

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Many events and developments outside of the Southwestern Region were to have a profound influence on fire management in the Southwest Region. The disastrous fires of 1910 in the Northwest shocked the nation and were in a large part responsible for the passage of the Weeks Act in 1911 that provided increased funding for fire control, state cooperative fire protection programs and research activities. New Mexico would join the state cooperative program in 1928, while Arizona, would be the last state to join, in 1974 (USDA Annual Reports, 1928 and 1974). In 1926, Congress passed the Clarke-McNary Act which supplanted the Weeks Act and greatly expanded federal assistance to the states for fire control programs. During the early years of these acts, a large portion of the financial assistance to the states was used to pay the wages of seasonal fire guards and lookout observers. These two acts would provide the basis of federal financial support for the next fifty years.

The use of fixed lookout points originated around the turn of the century and quickly expanded. The earliest form of lookout was simply a flat mapboard mounted to a post on top of a mountain with good visibility. From this point the early fire guard would spot a fire and then chase it down. Another early form of lookout was a platform mounted in a tree with slats or spikes nailed to the side of the tree to permit climbing. These early lookouts were used primarily by fire guards on patrol as observation points on their designated routes. Over time they were changed to permanent stations with telephone links to the ranger station. Most of the early lookouts were built with locally available materials, usually logs. The steel tower, the treated timber tower, and the concrete block tower came later along with development of standardized plans for the towers.

Zimmermann (1969:5-6) reported that the Forest Service and State Forestry Departments had constructed a total of 5,060 lookout towers by 1953. He noted a steady decrease since that time. His 1967 count indicated that of the towers recorded in 1953 thirty percent were gone. This was partially due to the increased reliance by the Forest Service on aerial patrols for detection. In the Southwestern Region the pattern seems to vary with the national trend, and the construction dates of the lookouts in this study reflect this pattern:

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<u>Year</u>	<u>Number of Towers Constructed</u>
1909	2
1917	1
1920s	12
1930s	47
1940s	4
1950s	17
1960s	14
1970s	1
1980s	2

It should be noted, however, that lookouts constructed during the 1950s and 1960s were largely replacements for those built in the 1930s by the CCC.

During his first years as Chief Forester, Pinchot authorized a series of studies on the history of forest fires in order to better understand the dangers of wildfire. He also authorized field investigations of fire control. These studies were to develop into the highly sophisticated analyses of fuel, combustion and weather (Steen 1976:135-136). Region 5 (California) was to provide the early leadership in conducting many of these studies.

From 1911-1914, Coert duBois had been conducting research on the problems of fire control in Region 5 (California). His comprehensive study was the first to address fire control in a systematic and scientific manner (duBois 1914) and was to serve as a model for fire control programs in the rest of the National Forests (Thornton 1986:15). In the fire detection section of the report he presented a standardized plan for a 12 feet by 12 feet, wood live-in lookout cab. He also endorsed the Aermotor Company's steel observation towers for use on the National Forests.

In 1911-1912, Chief Forester Henry Graves authorized S.B. Show to start his fire studies in Region 5. Show began his study of the Red River Lumber Company near Westwood, California (Steen 1976:135). Detection became a major interest and culminated in two major studies (Show et al. 1937a,b) that refined detection plans and were influential in the design of lookout systems in all parts of the country.

Much of the detection research focused on visibility and mapping of areas around existing or proposed lookout facilities. Sensitivity maps were made to correlate with fire occurrence zone maps to assist in determining of the effectiveness of given lookout points.

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In the early 1930s, Show formed a research group at the California Forest and Range Experiment Station (now the Pacific Southwest Forest and Range Experiment Station) that studied every aspect of fire including detection. The research group studied and published their findings on a variety of topics including lookout structure design, visibility patterns, lookout site designations (primary, secondary), and psychological factors affecting lookout observers. Show (1937a,b) consistently recommended the construction of additional lookouts to insure complete coverage. More often than not, however, individual forest budgets would not permit the development of the elaborate detection system which would have included additional the new lookouts that Show advocated.

Between 1919 and 1923, Aldo Leopold, Assistant District Forester, conducted an inspection tour of all the National Forests in Region 3. His reports (Leopold 1919-1923, 1924) noted that while most of the lookouts were in good condition, there was no systematic plan for their location. He also expressed doubt as to whether they were all needed. This may have been a reflection of his philosophy concerning the ecological nature of fire.

The most active period for lookout construction in the Southwest and the rest of the nation was the 1930s. The economic disaster of the Depression affected the Forest Service and lookout detection facilities in a surprisingly beneficial and significant way. Many of the recommendations of the California based research group were executed during this period. The creation of the CCC in 1933 provided the necessary manpower to carry out many of the construction plans recommended by Show's research group.

The report prepared by the Loveridge-Cliff Inspection Group (organized to evaluate fire control procedures across the nation) in 1945, noted the good record of fire control in the Southwest Region and devoted much of its discussion to grazing problems (Loveridge-Cliff Report 1945). However, the report did note the poor condition of many lookouts in the region and recommended improved maintenance or replacement. It appears that this was carried out in the 1950s and 1960s, when the Forest Service undertook the Increased Manning Experiment (Thornton 1986:20) and 31 new lookouts were constructed, often replacing earlier ones which were torn down. This was somewhat reminiscent of the 1930s when new CCC constructed lookout towers replaced many of the earlier wooden ones.

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During the 1950s and 1960s, regional fire plans called for the quick suppression of all fires. Each forest in the Southwestern Region had its own particular problems. For instance, the Lincoln National Forest has over 150,000 acres of patented lands and many vacation homes that increase fire danger. The influx of larger numbers of people from Tucson into the Santa Rita Mountains of the Coronado National Forest for recreation caused several inspectors to advise establishing additional detection stations (Baker et al. 1986:202). The rugged terrain of the Santa Fe National Forest creates blind spots for fixed detection and thus more reliance on aerial patrols was required (Baker et al. 1986:202).

The 1967 Regional Management Plan marked a change in the region's fire policy (Baker et al. 1986:203). The existing philosophy of fire suppression was challenged in an article by Collins (1967). The emphasis on total suppression was changed to one of control. In recent years the Forest Service has focused on the development of alternate means of detection and more efficient means of fire suppression.

The decline in fire lookouts has been attributed to a number of factors (Thornton 1986: 20-21):

- 1) More fire reports coming in from the public than lookouts.
- 2) The effectiveness of aerial patrols.
- 3) Better transportation routes and equipment.
- 4) Radio repeaters and improved communication methods.
- 5) Smog rendering many low elevation sites useless.
- 6) Inflation in maintenance and operation costs.
- 7) Fixed point detection with automated devices: Automatic Lightning Detection System (ALDS), satellites and ground optics.
- 8) Changes in fire policies that permit monitoring and management of some wildfires.
- 9) Forest Service concern over liability risk which has resulted in the demolition of some unstaffed lookouts.

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A final important factor not mentioned by Thornton is:

- 10) Wilderness designations. In a newly designated wilderness, some towers were perceived as nonconforming structures and were removed.

While some of these points are more specific to Region 5, a number of them do have relevance in explaining the decline in lookouts in the Southwestern Region.

Context 2: The Civilian Conservation Corps and the Forest Service in the Southwestern Region

The Great Depression was a severe crisis for America. It had a serious impact on the economic, social and political organization of the nation. Unemployment and dislocation of families were common and industry was disrupted. Over two million people were forced into a vagrant existence. Unemployment affected young workers with severity.

At the same time, the nation was becoming conscious of the serious problems of poor usage and exploitation of its national resources. Land use ethics (or more correctly, the lack of) had been largely governed by economic self-interest that resulted in eroded and exhausted soils, overgrazed grasslands and stripped forests. The loss of tree and grass cover threatened to accelerate erosion.

The CCC provided solutions to both these problems by employing young men in work focused on protecting national resources. The CCC involved the efforts of many governmental agencies and provided employment for thousands of young men. It was organized specifically to provide employment and deal with national conservation needs. In some circles, the CCC was labeled "Roosevelt's Tree Army." While forest planting was a major activity, CCC works included recreational development, soil conservation, aid to grazing and wildlife, flood control, reclamation, drainage, disaster and emergency relief and the protection and conservation of our national and state forests. The establishment of the CCC made available to federal, state and local governmental agencies for the first time an adequate supply of labor to carry out many of the conservation projects which had been planned but never executed due to a lack of labor and funds.

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The CCC was established in April of 1933 and terminated in 1942. This agency accomplished its goals of removing people from the welfare lines and putting them back to work as well as achieving many conservation goals. While other federal agencies, such as the National Park Service and the Soil Conservation Service, utilized CCC crews, nearly half of the public works projects were administered by the Forest Service. The Forest Service controlled most of the camps allocated to the Department of Agriculture.

On the National Forests, the CCC helped to educate the public on preventing forest fires and provided a large labor pool for fire crews to locate and extinguish forest fires. Across the nation, the CCC built 3,470 fire towers and houses for the detection of forest fires, laid 65,000 miles of telephone lines to provide a communication system linking the lookouts to the ranger stations and constructed over 90,000 miles of trails and roads (Lacy 1976:140).

During the CCC period, the Southwestern Region contained 14 National Forests, including the Coronado, Coconino, Crook, Kaibab, Prescott, Sitgreaves, Tonto and Tusayan in Arizona and the Carson, Cibola, Gila, Lincoln and Santa Fe in New Mexico. The Apache National Forest had lands in both states.

Initial plans called for camps in Arizona and New Mexico with an enrollment of 8,650 men (Otis et al. 1986:29). Thirty-seven camps were opened. The Sitgreaves, Tonto, Carson and Lincoln National Forests had two camps each. The Crook, Prescott, Cibola and Gila National Forests had three camps each while the Coronado, Santa Fe and Apache National Forests had four camps each. The Coconino National Forest had five camps (Otis et al. 1986:29). An average of 20 camps continued operating in the Southwestern Region until the CCC was disbanded in 1942.

Administered as part of Army Corps Area 8, the enrollees went to Fort Bliss in El Paso, Texas, and later to Fort Huachuca, Arizona, for conditioning and training programs. Several organizational changes occurred during the early period and eventually five districts were established: Phoenix, Tucson, Albuquerque, Silver City and Fort Bliss. Nearly 12,000 men went through the camps of the Southwestern Region.

The location of camps was dictated by the need to have access to reliable water sources. The earliest camps were established at Treasure Peak on the Coronado National Forest and at Pinal Mountain on the Crook National Forest (now the Tonto). One of the first structures built by enrollees at the Pinal Mountain camp was a lookout tower on Signal Peak.

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The Forest Service established many smaller side camps that allowed enrollees to be located closer to large projects. These smaller camps also were easier to supply with water. Work projects at the side camps included erosion control, rodent control, timber stand thinning, fencing of forest boundaries and range allotments, campground and recreation site construction and the building of trails, roads, bridges, telephone lines and fire lookouts. By the fall of 1933, fire lookouts had been constructed on Escudilla Peak on the Apache National Forest and Signal Peak and Webb Peak on the Crook (Tonto) National Forest. The exact number of lookouts and support structures built by the CCC in the Southwestern Region is not clear from the available records which are sketchy and incomplete. Of those sites that could be documented, at least 31 lookout towers and 25 outbuildings were constructed by the CCC. Twenty of which are included as part of the thematic nomination.

While CCC projects that involved range management, reforestation, water development and ranger stations often have received greater attention, important contributions were made by the CCC in improving the fire management capabilities of the Forest Service in the Southwestern Region through the construction of fire lookout facilities and related trails, roads and telephone lines. The Forest Service also became dependent on CCC labor for fire fighting crews.

The Forest Service fire lookouts and their support outbuildings represent a theme of the federal response to the Depression, as CCC accomplishments that enabled the Forest Service to develop a more systematic and effective fire detection capability. Another important association of these structures and the CCC is related to the benefits of the program provided to communities in Arizona and New Mexico through employment of local residents and financial relief to their families and communities.

Nearly half of the lookouts and many associated structures within this thematic group were built by the CCC. USFS research studies by Show and Kotok (1937a), du Bois (1914) and Show et al. (1937b) had urged the development of an extensive lookout system on National Forests to insure an adequate detection system. Lack of funding and manpower hampered the implementation of these recommendations. With the creation of the CCC in 1933 and until its termination in 1942, the USFS had available the necessary manpower to expand the lookout system. This is what occurred at the national level and in the Southwestern Region. The construction of lookouts in the Southwestern Region was one of several goals of the CCC during its years of operation. It permitted the USFS to develop a large and complex fire detection system through the construction of many new lookouts or the replacement of earlier ones.

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Context 3: Public Land Management and the Conservation Movement
(1905 to 1942)

Throughout the first century of United States history, the policy was established for the government to administer public lands in order to increase settlement, promote ownership of homes and develop resources for business and individual initiative.

The individuals and businesses that entered the frontier areas created conditions which required regulation. Resources of all sorts, particularly the forests, were ruthlessly exploited with no thought for future needs or generations. The sentiment was summed up aptly in the words of Senator Teller of Colorado in 1909 who said:

I do not believe there is either a moral or any other claim upon me to postpone the use of what nature has given me, so that the next generation or generations yet unborn may have an opportunity to get what I myself ought to get (Teller 1909).

For the first 75 years of our national history, there was little effort on the part of the government to regulate entry or control exploitation of resources on public lands. Men could enter lands, clear them by any method they chose and acquire ownership by occupation. This system resulted in conflicting claims and stripping valuable resources such as lumber or mineral. Lack of accurate surveys and orderly methods of title acquisition discouraged many from settling in the frontier area.

To remedy these and other disadvantages in the prevailing system of free entry and to encourage more rapid western development, the Congress passed the Homestead Act which permitted citizens to enter on a quarter section of land (160 acres) after it had been surveyed for a cost of \$1.25/acre.

Under this act, thousands of homesteads were filed in the western states. Due to misuse of entry laws, Arizona and other western states suffered considerable exploitation of their forests as a result of this act.

In 1877, it was evident that the provisions made in the Homestead Act of 1862 for 160 acre homesteads were not satisfactory or proper because arid, semi-desert lands require irrigation before becoming productive. On 3 March 1877, Congress passed the Desert Land Act which permitted 640 acre entries on desert lands with the provision that water systems would be developed to grow crops within three years. It was not the intention of this act to permit the filing of

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claims on timbered lands and while there are records of infractions of this sort, the worst result was the segregation of valuable grazing lands with independent water supplies.

However, the abuses to forest and grasslands under the Homestead and Desert Land Acts were insignificant in comparison to those that occurred under the Timber and Stone Act passed by Congress in 1878. The act authorized citizens to fell and remove timber from the public domain for mining and domestic purposes. It also allowed the purchase of public lands for \$2.50 per acre for timber and stone use. The motive was to prevent illegal cutting, a common practice at the time, and to provide for the needs of the settlers. The real result of the act was that there was no way by which timber could be secured for commercial purposes in an honest manner. The inevitable outcome was fraud by which large timber companies secured lands on a massive scale. The Commissioner of the General Land Office wrote in 1882:

...depredations upon the public timber by powerful corporations, wealthy mill owners and lumber companies are all being committed to an alarming extent.

The motives for passing the Timber and Stone Act were to give the settler in addition to his 160 acres of lands, lands to supply timber for his domestic use. Unfortunately, the abuses of its provisions were serious and frequent.

Lumber companies took advantage of timber and stone entries to acquire timberlands for their cutting operations. In Arizona, the Commissioner of the Land Office reported in 1901 that the Old Dominion Copper Mining and Smelting Company cut in excess of four million board feet of lumber in 1900 to 1901 from non-mineral lands. Abuses also occurred by the stockmen who managed to acquire, under the guise of this act, vast tracts of land for grazing. The act was finally amended in 1891 but abuses continued which resulted in the concentration of timber ownership in the hands of speculators and large companies.

During the 1870s, the conservation movement came into being in response to timber depredations of public lands as scientists and other educated men began to question the unrestricted use of natural resources on public lands and expressed their concern for the preservation of future supplies. In 1864, George Perkins Marsh published his important book, Man and Nature, which warned of environmental abuses and discussed the ethics of land use. Shortly after, the Annual Reports of the Department of Agriculture and Interior made reference to Marsh.

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At this same time, the states also began to develop concerns for the protection of their public lands. Although early efforts focused more on the protection of commerce and transportation, forest fires, forestation and trespass by timber companies began to receive rudimentary forms of regulation. For instance, in 1885 California created a forest board chartered to educate and conduct research but which had no powers to enforce regulation.

In the fall of 1875, the American Forestry Association was organized and held its first meeting in Chicago. The members agreed on the need for extensive research into the problems in timberlands. One of the delegates at this meeting who assume a leadership role was Dr. Franklin Hough of New York.

In 1873, Dr. Hough presented a paper at the annual meeting of the American Association for the Advancement of Science in Portland, Maine which summarized his own forest research in New York and argued for the need for management and preservation of the nation's timberlands. The American Association for the Advancement of Science endorsed his report and sent a memorandum to Congress urging that they organize and fund a study of the conditions of the nation's forests.

Several months later, Hough and Harvard botanist, George B. Emerson, traveled to Washington, D.C., where they met with Joseph Henry of the Smithsonian Institution and Commissioner of Agriculture, Frederick Watts. A meeting with President Ulysses S. Grant followed. Over the next three years, the idea of a forestry study moved back and forth in Congress. In 1876, Congress authorized funding and instructed the Department of Agriculture to create a position for a forestry agent to direct the study. Hough was chosen and within a year issued the first in a series of reports that were to analyze forest problems and emphasized the need for the development of a management policy to protect and preserve the forests. His reports had a strong influence on other government leaders. Secretary of the Interior, Carl Schurz worried about continued exploitation of timber resources on public lands.

In 1881, the Division of Forestry was established in the Department of Agriculture and Hough was named its first head. Political problems ensued and hough remained as head of the agency for less than two years. During that time, however, he managed to generate influential reports and he traveled to Europe to study professional forestry methods. His successor, Nathaniel Egleston, was ineffective. In 1886, he was succeeded by the first professional forester to be employed by the US government, Bernhard E. Fernow. Trained in Europe,

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Fernow had held a German Forestry license since 1869 and after arriving in the US worked as a consultant in Pennsylvania. Shortly after taking office, Fernow received more power to implement policies when Congress gave full statutory recognition to the Forestry Division in the Department of Agriculture. Reports continued to pour into Washington from the western states documenting numerous cases of land fraud in securing timber lands. Fernow drafted the first enforcement bill which Congress did not pass, but which proved to be a strong basis for later legislation.

Fernow strongly promoted the idea of establishing forest reserves and managing them through modern forestry techniques. He often spoke of the problems of forest fires and the need for more effective detection and suppression efforts.

Fernow's efforts in coordination with others in the Departments of the Interior and Agriculture resulted in the passage of the Forest Reserve Act in 1891 as an amendment to an act revising land laws. Seventeen forest reserves were created in three years by President Harrison and placed under the supervision of the Department of the Interior.

In 1897, a bill was passed by Congress that provided for the management of Forest Reserves. Fernow left office after political disputes in 1898 and went on to establish a forestry school at Cornell and became its first director. In 1907, he left to head the forestry school at the University of Toronto and continued to influence American forestry through his position as editor until 1923 of the Journal of Forestry. He published over 250 articles and an important book, Economics of Forestry (1902), that argued for modern forestry practices. Fernow made important contributions in education and the development of modern forestry techniques. Ralph Bryant, forestry professor at Yale wrote to Fernow shortly before his death:

No other man has been such a potent force in the advancement of forestry in this country and the wonderful foundation will always endure (Steen 1976:46).

Fernow's successor as Chief of the Division of Forestry was Gifford Pinchot who had studied forestry at Yale and after graduation went to Europe to study forestry practices. Returning to the US in 1892, Pinchot was asked by Fernow to become his assistant. He declined and took a position managing the private forests of George Vanderbilt's Biltmore Estate near Asheville, North Carolina. He also developed forestry management plans for New York state during which time he made the acquaintance of Theodore Roosevelt. In 1897, he became involved with plans to create a forestry commission at the National Academy of

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Sciences. In 1892, during western travels for this commission, he became acquainted with John Muir, founder of the Sierra Club.

After his appointment, Pinchot argued strongly for the permanent tenure of forest land, continuous management and employment of professional foresters. Pinchot began his effort to have the management of the Forest Reserves moved from the Department of the Interior to the Department of Agriculture, he began cooperative research programs and developed plans in increased forestation and fire protection. He fostered cooperation with the Department of the Interior and by 1901, the Agricultural Department was largely responsible for research and technical management decisions. During this period many technical reports and manuals were prepared, some of which provided the basis for fire protection studies of the next decade which advocated the development of systematic detection systems to provide early warning of fire so a quick suppression effort could follow. Pinchot also developed the program of using student assistants, which was to provide future USFS leadership for many decades to come. Arthur Ringland, first supervisor of the Southwest District, began his career as a student assistant to Pinchot in 1900. DuBois and Show, who were to conduct extensive research on fire detection systems in the coming decades, also started as student assistants. One of Pinchot's earliest and strongest emphasis was on fire protection.

In 1901, the Forestry Division was elevated to the status of Bureau and 1905, President Roosevelt transferred the forest reserves to the Bureau of Forestry in the Department of Agriculture. Pinchot soon changed the name to Forest Service and became its first chief. Two years later the reserves were renamed National Forests.

Pinchot began to develop a policy for the operation of the Forest Service and management of the National Forests. The first Use Book was published late in 1905 emphasizing the strong need for protection of the National Forests from fire. Pinchot directed duBois and Show to start research on the development of fire management plans which were to include recommendations for improved detection facilities through the construction of permanent fire lookouts.

Pinchot's contributions to the development of conservation philosophy were substantial and he strongly advocated that responsible, regulated use of the National Forests was compatible with conservation.

The two major threats to National Forests were timber depredation and fire. The inspiration that spurred the development of the

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conservation movement was the exploitation of timber resources on public lands by large private lumber companies. The key to eliminating these depredations and developing sound management plans included fire protection strategies (i.e., rapid detection of fires from lookout posts).

It is in this sense that these fire lookouts are the historic physical reminders of the methods utilized to protect the National Forests, a major goal initiated through those men and women involved in the conservation movement. The fire lookouts of the Southwestern Region can perhaps best be viewed as a physical outcome of the conservation movement that developed in the United States in the last three decades of the nineteenth century. The major goal of the conservation movement was government protection and management of the natural resources on the nation's timberlands. The philosophy of the conservation movement came to dominate the political life of the nation. One of the major results was the creation of the USFS in 1905 to protect and manage the timberlands of the nation. Early emphasis was placed on the protection of the forests from fire by the development of adequate fire detection methods through systematic patrol and the development of a lookout system.

The important connection between the conservation movement and fire lookouts is that fire lookouts represent an actual physical manifestation of the movement's philosophy, namely the protection of resources. By providing early detection of fires that threatened forests, fire lookouts fill this role in a clear and concise manner.

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Context 4: The Development of a Functionally Specific Architectural Style: Fire Lookout Types, Designs and Equipment (1905-1942)

In assessing the historical significance of a lookout tower, it is necessary to identify and compare individual types. Fire lookouts represent a single thematic group with a wide range of architectural designs. Thornton (1986:24-25) identifies and defines seven broad categories that include lookouts and associated structures:

- 1) Observation only lookout. In this category, the fire-finder is present in work area only and the lookout operator lives elsewhere. The majority in the Southwestern Region are metal Aermotor towers measuring 7 ft by 7 ft (one wood tower measures 7 ft by 7 ft), while a few are larger measuring 12 ft by 12 ft.
- 2) Live-in lookout. This category has the fire-finder located in the lookout operator's living quarters. It includes a variety of types: 14 ft by 14 ft Aermotor towers, blockhouse, L-4 houses, R-6 flats (CL-100-106 series) and CT-2 towers.
- 3) Cupola. For this category, a small cupola observatory structure containing the fire-finder was built on top of another structure to serve as a lookout. The first Forest Service standard plan was a D-6 cupola designed by Lige Coalman and in 1915 the prototype was placed on top of Mt. Hood in Oregon. It sat on top of a 12 ft by 12 ft house. The D-1 cupola designed by D.L. Beatty in the Flathead National Forest in Montana sat on top of a 14 ft by 14 ft log cabin (Kresek 1985:11-12). Although several D-1 and D-6 cupolas were constructed on mountaintops in the Southwestern region, none have survived.
- 4) Secondary. In this category, the fire-finder was located in a building with restricted visibility which was designed to cover blind spots of other lookouts. Although none of these types now exist in the Southwestern Region, review of old photographs suggests that in the 1920s and early 1930s some lookouts did exist that fit this description. They generally appear to have been a square or rectangular shed with an observation window on only one side.

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- 5) Dwellings. This category is used to include all other buildings associated with lookout towers, including living quarters (cabin or frame buildings), barns, sheds, storage facilities and outhouses.
- 6) Portable. In the early days of the USFS in the Southwestern Region, this category included tents. Today it includes only portable trailers of which there is only one example: on the Santa Fe National Forest in New Mexico.
- 7) Unclassified. This category includes examples of lookouts placed on top of structures built for other purposes. No examples of this type are known for the Southwestern Region.

An alternative classification system groups lookouts by fire plan designation:

Primary: Continuous seasonal use.

Secondary: Continuous seasonal use only in times of high fire danger.

Emergency: Manned only in times of high fire danger.

Project: Used for watching a specific project, such as construction activity, that may generate fire danger to a forest.

The majority of lookouts in the Southwestern Region fit into the primary and secondary categories. The archival materials reviewed for this classification group were fragmentary and unclear as to the structures involved.

These general categories are presented as a preliminary classification only for general information. The specific design types provide the means by which historical and architectural significance can be judged.

As Thornton (1986:25) suggests, fire lookout structures reflect architectural design concepts that occurred long before the

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development of organized fire detection systems. For example, residential homes and public buildings in colonial America utilized cupolas. Towers date to biblical times, and in the past two centuries various industries (farming and ranching), military forts and cities designed and built a variety of towers for observational and nonobservational use.

The lookout towers frequently have associated outbuildings, including cabins, storage sheds, privies, corrals and other structures at the site. The cabins were built to provide living quarters for the lookout guards, particularly for those sites with 7 ft by 7 ft observation towers. Information on cabin plans and designs was not always recorded. The cabins at lookout sites were not specifically designed for lookout sites, but also were used at other administrative sites. The earliest structures used for living quarters were log cabins built from materials at hand. Starting in the 1920s, these were gradually replaced by more standardized wood frame cabins. Storage sheds and privies also appear to have been built to standard plans. Barns and corrals provided shelter and confinement for horses and were common in the early decades, declining after the adoption of automobiles and trucks.

These associated structures are regarded as important parts of the lookout site complexes and also are evaluated when the inventory forms contained information on them. These associated outbuildings formed an integral part of each lookout site by providing shelter and location points for auxillary activities of the fire lookout person such as weather and rainfall monitoring, care of horses, sanitary facilities and water collection.

From an engineering standpoint, fire lookouts are relatively simple structures and have undergone few innovations over the years. The variety of types that were in existence at one time or another reflected individual innovation in the early days of the Forest Service. However, in later decades, systematic experimentation helped to achieve standardization. Lookouts also reflect, to a certain degree, the availability of local building materials and what could be reasonably transported to the proposed construction site.

The earliest lookout points were simply convenient mountaintop locations with good visibility which could be visited by fire patrolmen on their assigned routes. The first type of fire detection devices constructed at some of these sites was a simple alidade and protractor placed on a tree stump, post or rock so a precise bearing could be obtained. Judging from photographic evidence, some of these temporary locations were utilized into the early 1930s, and later became the sites of permanent lookout structures.

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At about the same time (ca. 1905-1920), lookout trees appear. In areas lacking a clear mountain top to set up a protractor and alidade, a lookout tree was utilized. A tall tree was selected that would afford a good view and the top of the tree was modified to support a crude platform. Access was provided by spikes driven into the side of the tree or by wooden ladders. Usually not permanently manned, lookout trees were probably utilized most commonly by the fire patrolman as he made his rounds of the district. They were also utilized in lower elevations to obtain a quick observation point when a more permanent lookout could not provide adequate information. Fire crews may have used lookout trees to monitor the progress of a fire or watch for spotfires. In some cases more elaborate platforms were constructed on the tops of trees and a small cabin built nearby which suggests more permanent use. Lookout trees are frequently found in the vicinity of modern day lookouts, indicating long-term use of the site for fire detection. While lookout trees were identified in the survey, they were not evaluated as part of this nomination.

The first observation-only wooden towers probably were constructed before World War I and into the early 1920s. Many of these early timber towers represent a design type borrowed to some degree from the oil and railroad industries (Thornton 1986:29). There was little standardization. A wide variety of styles was evident. Some of these early towers were constructed of logs cut on the site while others appear to have been constructed with commercial timber. Most of these early wooden towers used an x-brace construction design, although a few used a z-brace design. Most of the platforms on top of the towers were roofless and open on the sides with only a guardrail. A few were enclosed on the sides and a few had roofs. The San Antone Lookout in the Carson National Forest in New Mexico, probably constructed in the early 1920s, had a short tower attached directly to a log cabin. This unusual lookout survived into the late 1940s when it was razed by the USFS. None of these towers appear to have had any lightning protection.

It is of interest to note that in a 1919 photograph of the Sentinel Lookout Tower on the Chiricahua National Forest (now part of the Coronado National Forest) a telephone box can be clearly seen. Most fire guards stationed at a lookout in the early years of the Forest Service had to ride to a fire and extinguish it themselves or ride for help back to the ranger station. The need for better communication became an early focus of USFS research efforts (Gray 1982). The need to detect a fire and quickly report it necessitated the development of good field communication.

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A variety of methods was used including the telephone, carrier pigeons, heliograph stations and later radios. The earliest record of telephone use comes from the Siskiyou Forest Reserve in Oregon in 1905 (Adams 1906:468). The first telephone built and owned by the Forest Service, a 109 mile section on the Big Horn Forest Reserve in Wyoming, was constructed in 1906 (Adams 1906:468). In the Southwestern Region telephone lines installed on the Gila National Forest as early as 1914 connected a lookout on Center Baldy to the Little Dry Creek Ranger Station. Spoerl (1981a:8) cites the Alamo Advisor of April 1911 which reported the construction of telephone lines on the Fairchild Ranger District of the Lincoln National Forest in New Mexico. By the early 1920s, most fire lookouts in the Southwestern Region had a telephone link to the outside world.

The USFS in cooperation with the Vermont State Forestry Department began researching the use of the radio for communication as early as 1909 (Gray 1982:19). The Southwestern Region of the USFS made important early contributions to the development of the radio for communication purposes. In 1916 William R. Warner, posted at the Baseline Ranger Station on the Apache National Forest in eastern Arizona, was faced with the problem of stringing an expensive telephone line to his isolated ranger station. Gray (1982:19-20) reports that Warner, inspired by an amateur radio antenna he observed at a local ranch, purchased a similar radio from a mail order firm, constructed an antenna and started to experiment with transmitting. He caught the attention of R.V. Slonaker, a telephone engineer for the Southwestern District, who had, in 1914, recommended radio experiments in the Carson National Forest in New Mexico. On November 26, 1917, Warner transmitted the first official USFS wireless message from the Baseline Ranger Station on the Apache National Forest to Clifton, Arizona, a distance of forty miles.

Warner's experimental work was significant in that it encouraged the Southwestern District (Region) to conduct further research. Other forests in various parts of the country followed the lead of the Southwestern Region. In the late 1920s, the USFS regarded the radio as inadequate and too expensive (Grey 1982:28-29) so they curtailed the research for nearly five years. However, the first steps toward a modern communication system had been taken. By the early 1920s, some steel observation towers began to appear in the National Forests of the Southwestern Region. Historic photographs indicate that although the platforms are different, most of the towers were similar, utilizing an x-brace support system. These towers may have been manufactured by the Aermotor Company of Chicago, Illinois. An early brochure issued by this company (Aermotor 1903) shows tower designs very similar to these early steel lookout towers. It is not known how many of these steel platforms were erected in the Southwestern Region.

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Although standardization of lookout designs was not to be accomplished until the 1930s, the effort in this direction started two decades earlier. In his study of lookouts in California, Thornton (1986:14) mentioned early research on fire detection by Coert duBois as being significant in the development of modern techniques. In 1911, duBois, developed a plan for fire detection in the Stanislaus National Forest. He stressed the designation of key mountain tops as permanent lookout points and the recording of fire statistics. Graves (1910) had introduced the concept of "primary" lookouts several years earlier.

In 1914, duBois published a comprehensive study of fire control (duBois 1914). He introduced a standardized plan for a 12 ft by 12 ft wooden live-in cab and also recommended the use of Aermotor Company steel observation towers. Thornton (1986:15) reports that in 1917, duBois presented Plan Number 4-A, Primary Lookout Building Standard for District 5, which was for a 14 ft by 14 ft wood live-in cab. This plan established a basic design and floorplan for all live-in cabs built since that time. It is important to note that the major fire detection research sponsored by the USFS occurred in Region 5 from 1914 through the late 1930s. This research had an influence in other regions largely through the publication of articles on fire management in USDA journals. Other regions also conducted research and contributed to the modification and development of lookout design.

The early wooden live-in lookout towers in the Southwestern Region were modeled to some extent after the duBois design. Early photographs show lookouts on the Kaibab and Gila National Forests in the early 1920s that closely resemble the tower cabs in the duBois designs. The assumption is that they represented local design plans for which information is unavailable.

One of the early USFS standard lookout plans was the D-6 cupola designed by Lige Coalman in Oregon. The first D-6 cupola was placed in 1915 on top of Mount Hood outside of Portland, Oregon. The lower part of the frame house measured 12 ft by 12 ft with windows all around and a glassed-in observatory cupola on the roof. Kresek (1985:11) reports that over two hundred D-6s were built on mountaintops in Oregon, Washington, Idaho and Montana. While the D-6 cupola did not become as popular in the Southwestern Region, there were a number of them erected, on the Coronado, Coconino and Cibola National Forests. Unfortunately, none of these have survived. The D-6 cupola lookout houses represented one of the most attractive architectural forms in the variety of fire detection structures. Fortunately, a number have survived in the National Forests of the Northwest.

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The history of fire lookouts in the Southwestern Region has been one of type replacements over the years. The early nonstandardized towers were gradually replaced in many cases by Aermotor Company towers.

In the late 1920s, the L-4 lookout house came into prominence. It appears that this 14 ft by 14 ft structure was based largely on the earlier designs of duBois (1916). A number of these were built in the Southwestern Region and some have survived. The earliest L-4s had a gabled roof with heavy shutters that provided shade over the windows. The models built from 1933 to 1953 have a hip roof (Kresek 1985:11). Over a thousand of these L-4s were erected nationwide: some on the ground, but many on a tower. The L-5 was a scaled down L-4 which measured 10 ft by 10 ft. Kresek (1985:12) reports the L-5 was a log version of the L-4 designed on the the Nez Perce National Forest in Idaho.

The Aermotor Company of Chicago, Illinois, began manufacturing windmills, pumps and tanks in 1888 at 110 - 112 South Jefferson Street. The first president of the company was L.W. Noyes. This company came to have a special relationship with the USFS as a major supplier of prefabricated steel lookout towers. Endorsed by duBois in his 1916 report, some Aermotor towers were erected in the Southwestern Region in the 1920s:

- Deer Springs, Apache-Sitgreaves National Forest, 1923
- Promontory, Apache-Sitgreaves National Forest
(at one time the tallest tower in the region), 1924
- Weed, Lincoln National Forest, 1926
- Mayhill, Lincoln National Forest, 1927
- Rose Peak, Apache-Sitgreaves National Forest, 1929

The Aermotor Company provided thousands of lookout towers for both federal and state forestry departments for over fifty years. The company moved to several different locations in Chicago and remained in business until the late 1960s. Nearly fifty percent of the lookouts in this study are Aermotor towers. A variety of types was made: MC-39, LX-24, MC-99, MI-25, MC-24, LL-25 and LS-40. They differ primarily in design of cab shape, windows, stairs, ladder placement and size.

The earliest cabs on the towers measured 7 ft by 7 ft. Later, the Aermotor Company built larger cabs (up to 14 ft by 14 ft) that could be lived in. Cabs were constructed of both steel and wood. The towers were all battered (slanting gradually inward from the base; a lookout tower whose support members are not perpendicular with the plane of the ground surface) steel and utilized an x-brace support design.

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On the Lincoln National Forest in New Mexico, the Monjeau lookout, constructed in 1940 by the Civilian Conservation Corps, represents one of the most attractive and unusual types in the Southwestern Region. It is constructed of native stone with the living quarters located underneath the 7 ft by 7 ft observation cab. Illustrated in the 1938 USFS Standard Lookout Structure Planbook, Monjeau attracts thousands of visitors each year and is regarded as the pride of the Lincoln National Forest (Irwin 1986:1-5).

The lookout towers frequently have associated outbuildings, including cabins, storage sheds, privies, corrals and other structures at the site. The cabins were built to provide living quarters for the lookout guards, particularly for those sites with 7 ft by 7 ft observation towers. Information on cabin plans and designs was not always recorded. The cabins at lookout sites were not specifically designed for lookout sites, but also were used at other administrative sites. The earliest structures used for living quarters were log cabins built from materials at hand. Starting in the 1920s, these were gradually replaced by more standardized wood frame cabins. Storage sheds and privies also appear to have been built to standard plans. Barns and corrals provided shelter and confinement for horses and were common in the early decades, declining after the adoption of automobiles and trucks. These associated structures are regarded as important parts of the lookout site complexes and also are evaluated when the inventory forms contained information on them.

Lookout designs became standardized in the early 1930s. The research of Show and Kotch (1937a,b) in Region 5 at the Pacific Southwest Forest and Range Experiment Station was influential in the trend toward standardization that culminated with the publication of the Standard Lookout Structure Planbook in 1938. With the large pool of labor available through the creation of the Civilian Conservation Corps (CCC) and allied relief programs, the construction of lookouts accelerated in all regions of the country. Most of the lookouts built by the CCC in the Southwestern Region between 1933 and 1942 were constructed utilizing standard plans. By standardizing plans and preselecting sites, the USFS could order and ship all the necessary material to the regional or district offices.

The standardized plans included designs for cupola houses (D-6), towers and cabs. It is difficult to identify specifically all of the plans due to the multiplicity of designs being generated in different

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regions that eventually were brought together in the 1938 planbook. The plan drawings for the different design types readily identifiable in the Southwestern Region are shown in Figures 2 - 18. It should be noted that some of the plans represent lookouts that once existed in the Southwestern Region, but have since been destroyed and replaced.

Aermotor towers were incorporated into the standard plans. The USDA USFS L-1400 series standard plan represents a generalized Aermotor tower and cab. Other standard plans included the CT-1 observation-only and the L-501 wood platform. Standard plans for 12 ft by 12 ft and 14 ft by 14 ft observation live-in lookout structures included a variety of Aermotor type designs, the USFS CT-2 and the CL-100 to CL-106 series for towers and cabs.

The USFS in Region 3 (Southwestern) made extensive use of Aermotor towers. As mentioned earlier, they represent nearly one-half of the surviving lookout towers. The earliest ones date to the mid-1920s with the most recent ones dating to the 1960s. Several wood CT-1 and CT-2 towers were constructed at the time of World War II which may be reflective of metal shortages.

After the war, a few Aermotor towers were erected, but overall the number of new lookouts constructed dramatically dropped until the advent of the Increased Manning Experiments during the 1950s and 1960s when nearly twenty new lookouts were built, almost all on the standardized plan from the CL-100 to CL-106 series. These types, also known as R-6 "flats", were placed on steel towers and on concrete blockhouse bases.

There are a few lookouts in the Southwestern Region that were designed by companies other than the Aermotor Company, including the International Derrick Company, the Pacific Coast Steel Company and the McLintock-Marshall Construction Company.

The International Derrick Company provided steel towers and 7 ft by 7 ft steel cabs for lookouts on the Coconino National Forest (Lee Butte) and the Lincoln National Forest (Bluewater) in the 1930s. Both of these lookouts closely resemble Aermotor styles. No information was found on this company.

The Pacific Coast Steel Company designs were utilized for several lookout towers on the Coconino National Forest (Woody Mountain) and the Prescott National Forest (Horsethief, Towers Mountain and Mingus Mountain). The Pacific Coast Steel Company was incorporated in 1909 in San Francisco, California, for the manufacture of a variety of

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metal products including towers. In 1922 the company increased capital stock issues and became financially over-extended. The company was dissolved by court order in 1936 (Pacific Coast Steel 1909-1936). Their designs also were very similar to Aermotor Company types.

The McIntok-Marshall Construction Company of Pennsylvania and California also was involved in the construction of a lookout on the Prescott National Forest (Mingus). This company, incorporated in 1900 in Pennsylvania, was owned by H.H. McIntock, C.D. Marshall, and Andrew and Richard Mellon. The Mellon family of Pittsburgh provided the financial backing for the company which became a very large and prominent manufacturer of structural steel. The Mellons were responsible for the manufacture of the structural steel elements for the locks of the Panama Canal, the Grand Central Railroad Station in New York, the George Washington Bridge in New York, the Golden Gate Bridge in San Francisco and the RCA building in New York. The company was bought for 70 million dollars in 1931 and incorporated as part of Bethlehem Steel. The company apparently had a small subdivision that designed and constructed steel towers and cabs.

One piece of lookout equipment that deserves mention is the fire-finder, a device used to locate a fire on a map and a key element of equipment in a lookout of any design type. It determines the lookout operator's working location.

Several different fire-finders have been developed and utilized over the years. The Godwin fire-finder developed in 1912 was endorsed for use in Region 5 in 1914 (Thornton 1986:25). However, it was large and cumbersome and required a large platform that made it difficult to use in the small 7 ft by 7 ft observation lookouts.

In 1911, William B. Osborne, an engineer working on the Mt. Hood National Forest, developed the fire-finding instrument that was to bear his name and become a standard piece of equipment on almost all USFS lookouts. The Osborne, scaled down in size in 1934, became the standard for all lookouts. It was first used on the Larch Mountain lookout, Mount Hood National Forest in 1914. Similar to an engineer's transit, it was a high-precision instrument with accuracy to one-sixtieth of a degree. Many other fire-finders would appear over the years: the Koch Board, the Minnesota in 1949, the Kentucky, the Arkansas and the Wisconsin Conservation Department (Kresiek 1985:29). All would be short-lived.

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The prevention of wildfire was a major goal of the USFS from its inception. The detection of fires from lookouts placed at strategic locations on mountaintops became a major goal. Henry Graves (1910), Chief Forester, urged a concentrated effort at developing an improved fire detection system. The USFS at its Pacific Southwest Forest and Range Experiment Station in California supported research to develop an improved fire management system that included the construction of many new fire lookouts. The depression during the 1930s created a surplus of labor that was utilized through the CCC program to accomplish the construction of many new lookouts. Since that time the USFS has increasingly devoted financial and research efforts into developing alternate means of detection including aerial patrols and automated devices.

Fire lookouts have been on the decline since the end of World War II across the nation. The Increased Manning Experiment in the late 1950s and early 1960s provided a brief respite. It is estimated that fifty percent of the lookouts constructed in the Southwestern Region between 1905 and 1941 has disappeared. Some have been moved to new locations, some have been lost to fire, but the majority have been replaced by newer models or the sites abandoned.

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Significance

The fire lookouts and associated structures included in this thematic nomination have three major areas of significance: architecture, conservation and politics/government.

Architecture

USFS fire lookouts as a thematic group are significant under Criterion c - 36CFR60.6(c) in that they embody the evolution of a distinct architectural style which over time became characterized by standardized plans as a result of specific functional requirements related to fire detection. As a thematic group they represent a range of architectural styles. The lookouts and support structures in this thematic group are the physical remains of the traditional USFS role of fire protection. The types and styles of lookouts represent different periods in the architectural evolution of the lookout and historical developments in fire detection and suppression. They have evolved from simple tree lookouts with an associated tent in the 1910s and 1920s, through log or frame structures connected by telephones in the mid-1920s and early 1930s, to the numerous and standardized L-4s and Aermotor steel towers built in the 1930s and 1940s. The architecture of these lookouts and support structures is reflective of functional needs and has come to represent one of the USFS's most well known symbols of fire protection in the National Forests.

Conservation

USFS fire lookouts as a thematic group are significant under Criterion a - 36CFR60.6(a) for their association with the US conservation movement which began in the decade following the Civil War and still remains a potent political and philosophical force. Fire lookouts represent a distinct thematic group within the history of wildland fire management which in turn was a major component of the conservation movement in the US. In Arizona, the forests along the Mogollon Rim have one of the highest rates of lightning known in the US, so the threat of wildfire was and remains real and continuous for three to four months of the year.

The lookouts and their associated support structures represent the physical manifestation of the conservation movement's philosophy of land protection that was put into direct action with the Forest Reserve Act of 1891, the Organic Act of 1897 and the Transfer Act of 1905 that established the USFS as an independent agency within the Department of Agriculture. The goal of the conservation movement was to protect the nation's natural resources and with the establishment

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of the USFS in 1905 under the strong leadership of Gifford Pinchot, the protection and management of the nation's timberland resources became a reality. The lookouts and support structures in this thematic group represent a strong, clear, physical manifestation of the conservation movement.

Politics/Government

USFS fire lookouts as a thematic group are significant under Criterion a - 36CFR60.6(a) for their direct association (1) with history and the development of the USFS in the Southwestern Region as it related to an active management program for fire protection through rapid detection and suppression and (2) with the political and legislative events of Roosevelt's New Deal policies, in particular, the development, implementation and operation of the CCC directly in USFS projects. The CCC provided the USFS with the labor necessary to complete the development of a large and systematic fire detection network which had been strongly suggested by USFS fire researchers for nearly two decades. The lookouts also reflect certain changes in USFS administration and management of the forests of the Southwestern Region that centered for many years on the goal of rapid detection and suppression of wildfires. The lookouts were the key in this situation providing that early warning that allowed a wildfire to be attacked while still at a manageable stage.

From its inception in 1905, the USFS assumes a central institutional and intellectual role in fire control programs by its control of National Forest systems, development of cooperative programs of fire prevention with states and other federal agencies and by introducing professional forestry standards from Europe into the development of fire policy. The evolution of the US fire control program took place within the USFS. The fire lookouts represent a physical manifestation of this policy.

The lookouts represented the first step in a fire management policy, to discover the fire quickly and report its location accurately. They represent distinctive and specialized structures. They have served for a long time as a universal symbol of organized protection.

9 MAJOR BIBLIOGRAPHICAL REFERENCES

Please see Continuation Sheets.

10 GEOGRAPHICAL DATA

ACREAGE OF NOMINATED PROPERTY See Continuation Sheet.
 UTM REFERENCES See Continuation Sheets.

A	ZONE	EASTING	NORTHING	B	ZONE	EASTING	NORTHING
C	ZONE	EASTING	NORTHING	D	ZONE	EASTING	NORTHING

VERBAL BOUNDARY DESCRIPTION

Please see individual inventory sheets, #7.

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

STATE	Arizona	CODE	04	COUNTY	Various, see Continuation Sheets	CODE	Various, see Continuation Sheet
STATE	New Mexico	CODE	35	COUNTY	Various, see Continuation Sheets	CODE	Various, see Continuation Sheet

11 FORM PREPARED BY

NAME / TITLE

Peter L. Steere, Principal Investigator and Historian

ORGANIZATION

Cultural & Environmental Systems, Inc.

DATE

July 1987

STREET & NUMBER

P.O. Box 2324

TELEPHONE

(602) 622-2782

CITY OR TOWN

Tucson

STATE

Arizona 85702-2324

12 CERTIFICATION OF NOMINATION

STATE HISTORIC PRESERVATION OFFICER RECOMMENDATION

YES NO NONE

Shereen Berner

STATE HISTORIC PRESERVATION OFFICER SIGNATURE

STATE HISTORIC PRESERVATION OFFICER RECOMMENDATION

YES NO NONE

Thomas W. Hartman

STATE HISTORIC PRESERVATION OFFICER SIGNATURE

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

FEDERAL REPRESENTATIVE SIGNATURE

Wm J. Nellis

TITLE

AGENCY PRESERVATION CENTER

DATE

DEC 02 1987

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

See Continuation sheet for listing

DATE

DIRECTOR, OFFICE OF ARCHEOLOGY AND HISTORIC PRESERVATION

ATTEST:

DATE

KEEPER OF THE NATIONAL REGISTER

UNITED STATES DEPARTMENT OF THE INTERIOR
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**NATIONAL REGISTER OF HISTORIC PLACES
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National Forest Fire Lookouts in the Southwestern Region, USDA Forest Service

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GEOGRAPHICAL DATA FOR NOMINATED PROPERTIES

<u>Forest/Property</u>	<u>Quad</u>	<u>UTM</u>	<u>Acreage</u>	<u>State</u>	<u>County</u>
<u>Apache/Sitgreaves NF</u>					
PS Knoll Lookout Complex	Big Lake	12/648400E/3735900N	Less than 1	AZ (04)	Apache (001)
Bear Mountain Lookout Complex	Blue	12/672350E/3711750N	1.4 acre	AZ (04)	Greenlee (011)
Lake Mountain Lookout Complex	Sponseller	12/613520E/3780140N	Less than 1	AZ (04)	Apache (001)
Deer Springs Lookout Complex	Clay Springs	12/553350E/3796100N	Less than 1	AZ (04)	Navajo (017)
Promontory Butte Lookout Complex	Promontory Butte	12/498900E/3802700N	Less than 1	AZ (04)	Coconino (005)
<u>Carson NF</u>					
Canjilon Mountain Lookout Cabin	Cebolla	13/379150E/4047600N	Less than 1	NM (35)	Rio Arriba (039)
<u>Coconino NF</u>					
Moqui Lookout Cabin	Blue Ridge Reservoir	12/484785E/3824550N	Less than 1	AZ (04)	Coconino (005)
Woody Mountain Lookout Tower	Bellefont	12/431755E/3888880N	Less than 1	AZ (04)	Coconino (005)
Mormon Lake Lookout Cabin	Mormon Lake	12/460860E/3860360N	Less than 1	AZ (04)	Coconino (005)
Buck Mountain Lookout Tower	Happy Jack	12/461990E/3835980N	Less than 1	AZ (04)	Coconino (005)
Lee Butte Lookout Tower and Cabin	Stoneman Lake	12/450970E/3854610N	Less than 1	AZ (04)	Coconino (005)
<u>Coronado NF</u>					
Atascosa Lookout House	Ruby	12/486100E/3476120N	Less than 1	AZ (04)	Santa Cruz (023)
Barfoot Lookout Complex	Rustler Park	12/663275E/3532280N	Less than 1	AZ (04)	Cochise (003)
Lemmon Rock Lookout House	Mt. Lemmon	12/519850E/3588475N	Less than 1	AZ (04)	Pima (019)
Webb Peak Lookout Tower	Webb Peak	12/601030E/3619620N	Less than 1	AZ (04)	Graham (009)
West Peak Lookout Tower	Blue Jay Peak	12/590175E/3622420N	Less than 1	AZ (04)	Graham (009)
Heliograph Lookout Complex	Mt. Graham	12/607960E/3612880N	Less than 1	AZ (04)	Graham (009)
Monte Vista Lookout Cabin	Chiricahua Peak	12/659500E/3522100N	Less than 1	AZ (04)	Cochise (003)
Silver Peak Lookout Complex	Portal	12/670325E/3531200N	Less than 1	AZ (04)	Cochise (003)
<u>Gila NF</u>					
Mogollon Baldy Lookout Cabin	Mogollon Baldy Peak	12/724120E/3683780N	Less than 1	NM (35)	Catron (003)
Mangas Mountain Lookout Complex	Mangas Mountain	12/748620E/3771000N	Less than 1	NM (35)	Catron (003)
Reeds Peak Lookout Tower	Reed's Peak	13/233780E/3670600N	Less than 1	NM (35)	Grant (017)
Bearwallow Mountain Lookout Complex	Bearwallow Mountain	12/716810E/3703340N	1.8 acre	NM (35)	Catron (003)
Black Mountain Lookout Cabin	Black Mountain	12/758000E/3696440N	Less than 1	NM (35)	Catron (003)
Hillsboro Peak Lookout Tower and Cabin	San Lorenzo	13/240260E/3649260N	Less than 1	NM (35)	Sierra (051)
El Caso Lookout Complex	Slaughter Mesa	12/731110E/3776220N	Less than 1	NM (35)	Catron (003)

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Kaibab NF

Jacob Lake Lookout Tower	Jacob Lake	12/391650E/4062050N	Less than 1	AZ (04)	Coconino (005)
Big Springs Lookout Tower	Big Springs	12/380650E/4050400N	Less than 1	AZ (04)	Coconino (005)
Dry Park Lookout Cabin and Storage Sheds	DeMotte Park	12/389100E/4034650N	Less than 1	AZ (04)	Coconino (005)
Kendrick Lookout Cabin	Kendrick Peak	12/423180E/3918450N	Less than 1	AZ (04)	Coconino (005)
Volunteer Lookout Cabin	Garland Prairie	12/418560E/3897380N	Less than 1	AZ (04)	Coconino (005)
Grandview Lookout Tower and Cabin	Grandview Point	12/413950E/3979475N	Less than 1	AZ (04)	Coconino (005)

Lincoln NF

Monjeau Lookout	Angus	13/432020E/3699100N	Less than 1	NM (35)	Lincoln (027)
Wofford Lookout Complex	Cloudercroft	13/433640E/3650940N	Less than 1	NM (35)	Otero (035)
Ruidoso Lookout Tower	Ruidoso	13/438400E/3688070N	Less than 1	NM (35)	Lincoln (027)
Bluewater Lookout Complex	Avis	13/456440E/3622500N	Less than 1	NM (35)	Otero (035)
Weed Lookout Tower	Sacramento	13/447640E/3629770N	Less than 1	NM (35)	Otero (035)
Carrisa Lookout Complex	Bear Spring	13/441960E/3615360N	Less than 1	NM (35)	Otero (035)

Prescott NF

Mount Union Lookout Cabin	Groom Creek	12/371860E/3809800N	Less than 1	AZ (04)	Yavapai (025)
Mingus Lookout Complex	Hickey Mountain	12/396765E/3839510N	Less than 1	AZ (04)	Yavapai (025)
Hyde Mountain Lookout House	Camp Wood	12/324490E/3856500N	Less than 1	AZ (04)	Yavapai (025)

Santa Fe NF

Glorieta Baldy Lookout Tower	McClure Reservoir	13/427650E/3945220N	Less than 1	NM (35)	San Miguel (047)
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Tonto NF

Diamond Point Lookout Cabin	Diamond Point	12/482320E/3793850N	Less than 1	AZ (04)	Gila (007)
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**NATIONAL REGISTER OF HISTORIC PLACES
MULTIPLE PROPERTY DOCUMENTATION FORM**

NATIONAL
REGISTER

This form is for use in documenting multiple property groups relating to one or several historic contexts. See instructions in "Guidelines for Completing National Register Forms" (National Register Bulletin 16). Complete each item by marking "x" in the appropriate box or by entering the requested information. For additional space use continuation sheets (Form 10-900A). Type all entries.

A. Name of Multiple Property Listing

AMENDMENT TO: National Forest Fire Lookouts in the Southwestern Region,
USDA-Forest Service

B. Associated Historic Contexts

- 1). Development of forest fire prevention, detection, and control by the USDA-Forest Service between 1905 and 1940.
 - 2). The conservation movement and its influence on public land management from 1905 to 1940.
 - 3). Development of a distinctive type of construction.
-

LOOKOUT TREES ON THE KAIBAB NATIONAL FOREST

This is an amendment to the thematic National Register of Historic Places nomination written under contract to the USDA Forest Service by Peter L. Steere of Cultural and Environmental Systems, Inc. and dated July 1987. It includes an additional property type, lookout trees, which were not considered in the original nomination. Lookout trees relate to two of the three historic contexts discussed in the original nomination. As the thematic approach to National Register nominations is no longer used, this amendment uses the Multiple Property format. Continuation sheets are used for description and historic context discussion, and each lookout tree is nominated on an individual form.

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CONTINUATION SHEET

Section number 7 Page 1

Summary

The properties in this amendment are National Forest fire lookout trees built between 1905 and 1940 on the Kaibab National Forest, Arizona. Lookout trees are simple structures that provided an expedient and inexpensive visual network for fire fighters high above the forest. Now a rare and fragile resource, lookout tree remains represent the earliest physical manifestation of Forest Service fire management planning at the local level. These long-abandoned facilities are now historic archeological sites that, despite the ravages of time, retain integrity of location, design, feeling, and association. Integrity of workmanship, materials, and setting is less strong for some properties. Nevertheless, the nominated lookout trees all possess qualities that qualify them for National Register listing.

Location

All of the nominated properties are located on the Kaibab National Forest in north-central Arizona (Figure 1). Situated on the Colorado Plateaus, the 1.6 million acre National Forest contains vast commercial timber stands and extensive grazing lands. It surrounds Grand Canyon National Park and the city of Williams. The forest has a complex administrative history. First set aside as the Grand Canyon Forest Reserve in 1893, it became part of the Coconino National Forest in 1908. In 1910, The lands south of the Colorado River became the Tusayan National Forest and the lands north of it became the Kaibab National Forest. Grand Canyon National Park was carved out of these two National Forests in 1919.

In 1934, portions of the Kaibab National Forest and the Tusayan National Forest were combined to form the Kaibab National Forest as we know it today. The Forest is divided into four administrative units called Ranger Districts: The Williams (D1) and Chalender (D2) Ranger Districts surround the city of Williams; the Tusayan (D4) Ranger District is adjacent to Grand Canyon National Park South Rim; and the North Kaibab (D3) Ranger District is north of Grand Canyon National Park North Rim. Lookout trees are most common on the North Kaibab Ranger District, with fewer found on the Tusayan Ranger District. Only one was identified on the Chalender Ranger District and none on the Williams Ranger District (see Figure 2).

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Setting

Because Forest Service rangers were charged with the mission to protect timber from forest fires, fire detection facilities are located in timbered areas. Lookout trees are built into tall coniferous trees in locations that provide panoramic views of the countryside, often on ridges or hilltops, but also in areas of low relief. Lookout trees are often located near roads, for easy accessibility during fire patrols. The setting around most trees has not changed much since the historic period, although recent timber sale activity has temporarily altered the setting of some. Modern structures, screened by trees, have been built near others.

Description

The nomination "National Forest Fire Lookouts in the Southwestern Region, USDA Forest Service" defined one basic property type, the fire lookout (Steere 1987: item, 7 page 7). Three categories of structures within this property type were noted: Lookout Towers, Lookout Houses, and Associated Structures. This amendment adds a fourth category within the property type: Lookout Trees.

These simple structures have little variability, however, they appear in two forms: with a platform or without one. These sub-types are related to function and relative importance in the fire detection network. They are discussed in more detail below.

Ladder Trees: Access to the tops of these trees is provided by wooden ladders or by spikes (or lag bolts) driven into the side of the tree. (Lookout Trees in Grand Canyon National Park have metal ladders [personal communication, Dave Lorenz, 1990].) The limbs are removed from the ladder side, and some limbs are also removed from the tree top to provide a view. These lookouts were meant only for short-term transitory use, as they have no associated features in them such as telephone line, fire finder, or platform. Simple and inexpensive structures, these lookouts were scattered through areas with low relief. Fire crews would use these lookouts to monitor the progress of a fire or during routine patrols (USDA-Forest Service 1989: 14, 15). These points would supplement permanent lookout vistas. Occasionally, ladder trees are located next to a platform on the ground which held a map board for a fire finder (or its predecessor, the alidade and protractor) to aid locating the fire on the map.

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Platform Trees: Wooden ladders or spikes (also known as "lag bolts") provide access to a platform built into the top of the tree. The top ten feet or so of the tree is sawn off (and often found near the tree base) and a wood frame platform measuring about six to eight feet on a side is built into the top of the tree. The platform usually had a railing around it and a hatchway leading up to it. Features in the platform included a seat and a map board for the fire finder. Telephones were often located in the lookout tree for quick communication with a ranger station. Lightning protection and guy wires were often installed (Figure 3). Remnants of these features can still be seen today in these trees. Often, a nearby tent provided housing for the fire lookout (USDA-Forest Service 1989: 14, 15).

Registration Requirements

Because these lookout facilities are built into living trees their appearance is affected by the condition of the tree. Lookout trees often fall victim to lightning strikes, insect and disease infestation, or simply old age. Many trees are still standing and healthy, others are dead and standing snags, while others have fallen down. Lookout trees are considered to be historic archeological sites and therefore some degradation of the resource can be expected. The acceptable level of integrity depends largely on whether or not the tree still conveys to the observer its original function. The relative rarity of the site type also influences its National Register eligibility. Integrity of location, design, feeling, and association is most critical to retain for these resources. Integrity of workmanship, materials, and setting is less strong for some properties, and less critical as well.

To be eligible for listing on the National Register, a lookout tree must retain those features that distinguish it as a fire detection facility. Ladder trees must retain their ladders or spikes to be eligible. Removal of the lower rungs for safety purposes would not adversely impact their integrity. Platform trees must retain their ladders or spikes and retain at least a discernible remnant of their platform. Associated features like telephone lines, insulators, map boards, and guy wires contribute to the overall integrity of these sites.

Because the essential function of lookout trees was to provide a lofty position for fire observers, they should still be standing to qualify for the National Register. However, exceptions may be made in cases of rarity or if there are associated features (such as a ground based map board for the fire finder, tent platform, or replacement lookout tree) within the site that also relate to the fire detection

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function. On the North Kaibab Ranger District, for example, ladder lookout trees are relatively common and therefore to qualify for National Register listing the tree must still be standing or associated with a standing tree. Lookout trees are rare on the Williams and Chalender Ranger Districts, where only one tree was located in nearly 600,000 acres. This tree (Summit Mountain) has fallen, but its rarity and association with a ground-based map board qualify it for National Register listing. Trees that have fallen may be eligible under Criterion A for their historic association, but not under Criterion C, as they may no longer be "best examples" of a type of construction.

Summary of Identification and Evaluation Methods

This study and nomination of lookout trees was prompted by the 1987 National Register of Historic Places nomination entitled "National Forest Fire Lookouts in the Southwestern Region, USDA Forest Service." In the evaluation report for that project, the author wrote that ". . . during the survey several lookout trees were noted, but little information was collected because that study focused only on structures. As lookout trees represent the earliest surviving form of fire detection structure in the Southwestern Region, it is strongly recommended that they be recorded and photographed and that steps be taken to preserve and protect at least a sample of the surviving ones" (Steere quoted in USDA-Forest Service 1989: 51). This amendment complements the original nomination by adding this missing property type and nominating outstanding examples from the Kaibab National Forest.

Some lookout trees were located during cultural resource surveys of proposed timber sale areas. These surveys have been conducted over approximately 15 percent of the 1.6 million acres of the Kaibab National Forest. These sites were recorded, mapped, and marked for avoidance pending a final determination of their National Register eligibility. Some lookout trees have been reported to archeologists by field personnel, and they were recorded when time allowed. When this project was proposed, all Kaibab National Forest personnel were requested to report any known lookout trees. Old maps and historic photographs suggested possible locations, and these were field-checked when possible. On the southern three districts, only four trees were located. All are eligible and are being nominated. Another known tree, once atop Bill Williams Mountain, no longer exists.

On the North Kaibab Ranger District, lookout trees are more common than elsewhere. A 1959 map shows the locations of 33 lookout trees. Eleven of these were field-checked. Of the eleven, four had fallen and were determined ineligible for the National Register. The remaining seven are in good condition and are being nominated. They are located throughout the district and thus present a good geographic sample of lookout trees for the area. It is likely that some of the other lookout trees have been removed during timber sales, but some may remain.

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Significance

Lookout trees on the Kaibab National Forest are significant under Criterion A [36 CFR 60.6] for their association with 1) the development of forest fire prevention, detection, and control by the USDA-Forest Service between 1905 and 1940, and 2) the conservation movement and its influence on public land management from 1905 to 1940. They are also significant under Criterion C [36 CFR 60.6] because they embody the distinctive characteristics of a type of construction, the earliest and simplest form of fire detection structure, built into living trees.

Item 8 pages 1-31 in the nomination "National Forest Fire Lookouts in the Southwestern Region, USDA Forest Service" (Steere 1987) adequately discusses the context for this nomination, and need only be briefly summarized and quoted. This amendment for lookout trees does not include association with the Civilian Conservation Corps, as no such association could be demonstrated for lookout trees. The period of significance begins with the establishment of the Forest Service in 1905, and ends in 1940.

Context 1: The Forest Service and Fire Detection in the Southwestern Region (1905 - 1940)

In February of 1891, Congress initiated a national policy of conservation when it passed the General Provision Act. It enabled Presidents to set aside public lands as Forest Reserves to halt the destruction wrought by uncontrolled development. The first in Arizona was the Grand Canyon Forest Reserve, set aside in 1893. In 1905, Forest Reserves were transferred from the Department of the Interior to the Department of Agriculture and the newly formed Forest Service. Forest Reserves were soon renamed National Forests. "It concluded a series of events begun under Franklin Hough in 1873, continued by Bernhard Fernow in the 1880s and 1890s, and ended by the efforts of Gifford Pinchot and President Theodore Roosevelt after the turn of the century to preserve and protect the forest lands of the United States. The growth of the American Conservation Movement was to continue and often take different paths from the policies of the Forest Service, but the Transfer Act in 1905 represented an important milestone in the development of the USFS, specifically in the Southwestern Region" (Steere 1987: item 8, page 3).

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The first Forest Service manual for rangers, dubbed the Use Book stated that ". . . Officers of the Forest Service, especially forest rangers, have no duty more important than protecting the reserves from forest fires" (Secretary of Agriculture 1905: 65). In 1908, District Forester Arthur Ringland initiated a fire control program for the Southwestern Region (including Arizona), suggesting that a study of forest conditions and the development of a fire plan was necessary for all forests.

Inventories were conducted north of the Grand Canyon in 1909 and south of the Grand Canyon in 1910. On the north, rangers found ". . . vast denuded areas, charred stubs and fallen trunks and the general prevalence of blackened poles [indicating fire's] frequency and severity long before this country was explored by white men" (Lang and Stewart 1909: 17-19). Inventory south of the Grand Canyon revealed little evidence of fire (Allison 1910: 14-15).

Funding for fire control increased after passage of the Weeks Act in 1911 and the Clarke-McNary Act in 1924. These two laws would provide the basis of federal financial support for the next 50 years (Steere 1987: item 8, page 6).

"The use of fixed lookout points originated around the turn of the century and quickly expanded. The earliest form of lookout was simply a flat mapboard mounted to a post on top of a mountain with good visibility. From this point the early fire guard would spot a fire and then chase it down. Another early form of lookout was a platform mounted in a tree with slats or spikes nailed to the side of the tree to permit climbing. These early lookouts were used primarily by fire guards on patrol as observation points on their designated routes" (Steere 1987: item 8, page 3).

A two-person crew, consisting of a lookout and a lookout fireman, or smokechaser, would work the fire patrol together. The lookout would climb the tree, spot the fire, and report its location via telephone or radio to the ranger station. The smokechaser would pack up his fire fighting gear and ride horseback to fight the fire. The lookout monitored the smoke in the meantime (USDA 1959).

Forest Service Ranger Henry L. Benham remembered one lookout tree on the Kaibab. "We didn't have too many lookouts when I first came, only on Bill Williams Mountain (see Photo 1). [Ranger] Sevier and I took turns in riding from Camp Clover [Ranger Station] up the north trail on Bill Williams. We had an old spruce tree up there that we cut the top off of and built a little platform about three feet square. . . . We'd take our glass up there and look over the country for signs of smoke, and if we saw smoke anywhere we'd head for Camp Clover and get a fresh horse, get a partner and the two of us would ride back to find the fire. Sometimes we never found it; it had burned out before we got there. Mostly they were little lightning fires. In the three years . . . I was here we didn't have any disastrous fires on the Forest, either lightning or man-made" (quoted in Tucker 1989: 142).

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It is not presently known when the first lookout tree was built on the Kaibab National Forest. The earliest documentation for the presence of lookout trees is 1916. A photograph dated 1916 shows the Hull Tank Lookout Tree (AR-03-07-04-868) near the south rim of the Grand Canyon. A newspaper reference to another tree on Summit Mountain (AR-03-07-02-871) appears in the same year: "Mr. Benham has accepted a position as Forest ranger for the summer. Monday of this week, he started work on a trail and phone line to the top of Mt. Summit where he will establish a lookout station" (Williams News April 27, 1916). Judging from old maps and extant evidence, it appears that lookout trees were not extensively used on the Kaibab National Forest south of the Grand Canyon. The many mountaintops in the area may have precluded the need for lookout trees.

There is less documentation for lookout trees on the North Kaibab Ranger District. According to one old timer, lookout trees were in existence there by 1927 (personal communication, Cecil Cram, 1990). Historic photographs depict lookout trees in 1930. It is likely that lookout trees were built in the late 'teens and early 1920s there, as elsewhere. It is certain that lookout trees continued in use on the North Kaibab Ranger District into the 1960s (personal communication, Veldon Judd, 1990; Pyne 1982). It may have been the last area in the United States where lookout trees were still used. In the late 1960s, after the trees were no longer used to scout fires, the bottom rungs of many tree ladders were removed as a safety measure (personal communication, Paul McCormick, 1990)

Development of a fire detection lookout and control system depended on having good visibility from fixed points. Sensitivity maps were made showing viewsheds from various points and correlating them with fire occurrence zone maps to assist in determining the effectiveness of given lookout points. One such map was developed for the Kaibab National Forest in 1937 and is still used today (USDA Forest Service 1937).

The most active period for lookout construction in the nation was during the 1930s, when the Civilian Conservation Corps provided the manpower that the Forest Service desperately needed to upgrade their fire detection facilities from lookout trees and wooden towers to steel towers. Often, lookout towers replaced lookout trees, such as on Bill Williams Mountain. On the Kaibab National Forest, five lookout towers from the CCC era remain (three are listed on the National Register). Another active period of lookout tower construction took place in the 1950s and 1960s, when many of the aging CCC-era structures had to be replaced.

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Despite the addition of permanent steel towers, lookout trees continued to be used on the North Kaibab Ranger District to augment the viewshed. Numerous detection points were needed on flat terrain to adequately monitor fires. Thirty-three lookout trees appear on a 1959 map, and they were used until the late 1960s (pers. comm. Paul McCormick, 1990; Pyne 1982). Since then, aerial surveillance has supplanted the need for lookout trees.

Context 2: Public Land Management and the Conservation Movement (1905 to 1940)

The Lookout thematic nomination (Steere 1987: item 8, pages 13-18) summarizes the conservation movement and its influence in the formation and direction of the US Forest Service and need not be repeated fully here. The following quotations are particularly applicable, however.

"The two major threats to National Forests were timber depredation and fire. The inspiration that spurred the development of the conservation movement was the exploitation of timber resources on public lands by large private lumber companies. The key to eliminating these depredations and developing sound management plans included fire protection strategies. . . . It is in this sense that these fire lookouts are the historic physical reminders of the methods utilized to protect the National Forests, a major goal initiated through those men and women involved in the conservation movement. . . . The important connection between the conservation movement and fire lookouts is that fire lookouts represent an actual physical manifestation of the movement's philosophy, namely the protection of resources. By providing early detection of fires that threatened forests, fire lookouts fill this role in a clear and concise manner" (Steere 1987: item 8, pp. 17, 18).

Fire lookout trees, as the earliest physical representation of the fire detection facility, are significant in this context.

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Context 4: The Development of a Functionally Specific Architectural Style: Fire
Lookout Types, Designs, and Equipment (1905 - 1940)

The Lookout thematic nomination summarizes the development of fire lookout facilities, from the earliest forms, and is repeated here:

"From an engineering standpoint, fire lookouts are relatively simple structures and have undergone few innovations over the years. . . . The earliest lookout points were simply convenient mountaintop locations with good visibility which could be visited by fire patrolmen on their assigned routes. The first type of fire detection devices constructed at some of these sites was a simple alidade and protractor placed on a tree stump, post or rock so a precise bearing could be obtained. Judging from photographic evidence, some of these temporary locations were utilized into the early 1930s, and later became the sites of permanent lookout structures."

"At about the same time (ca. 1905 - 1920), lookout trees appear. In areas lacking a clear mountain top to set up a protractor and alidade, a lookout tree was utilized. A tall tree was selected that would afford a good view and the top of the tree was modified to support a crude platform. Access was provided by spikes driven into the side of the tree or by wooden ladders. Usually not permanently manned, lookout trees were probably utilized most commonly by the fire patrolman as he made his rounds of the district. They were also utilized in lower elevations to obtain a quick observation point when a more permanent lookout could not provide adequate information. Fire crews may have used lookout trees to monitor the progress of a fire or watch for spotfires. In some cases more elaborate platforms were constructed on the tops of trees and a small cabin was built nearby which suggests more permanent use. Lookout trees are frequently found in the vicinity of modern day lookouts, indicating long-term use of the site for fire detection" (Steere 1987: item 8, page 21, 22).

As a distinctive early form of fire detection structure, lookout trees are significant under this criterion.

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Tucker, Edwin A. (compiler)

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- 1932 Instructions & Specifications for Protection Against Lightning of Lookout Houses, Towers and Other Structures On Exposed Points. USDA-Forest Service.
- 1937 "Fire Control Visible Area Maps," Kaibab National Forest, Region 3. On file at the Williams Ranger District Fire Office, Williams, Arizona.
- 1959 Fireman's Guide. Pacific Southwest Region, San Francisco.
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Williams News

1916 April 27, 1916 issue.

Primary location of additional documentation:

- | | |
|---|---|
| <input type="checkbox"/> State historic preservation office | <input type="checkbox"/> Local government |
| <input type="checkbox"/> Other State agency | <input type="checkbox"/> University |
| <input checked="" type="checkbox"/> Federal agency | <input type="checkbox"/> Other |

Specify respository: Kaibab National Forest, Williams, Arizona

I. Form Prepared By

name/title	<u> Teri A. Cleeland </u>	Assistant Forest Archeologist
organization	<u> Kaibab National Forest </u>	date <u> Dec. 5, 1990 </u>
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city or town	<u> Williams </u>	state <u> AZ </u> zip code <u> 86046 </u>

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Multiple Resource Area
Thematic Group

Name National Forest Fire Lookouts in the Southwestern Region TR
State ARIZONA and NEW MEXICO

Nomination/Type of Review	Date/Signature
Cover Substantive Review	(a) Keeper <u>Patrick Andrus 1/28/88</u>
1. PS Knoll Lookout Complex Substantive Review	Keeper <u>Patrick Andrus 1/28/88</u> Attest _____
2. Bear Mountain Lookout Complex Substantive Review	Keeper <u>Patrick Andrus 1/28/88</u> Attest _____
3. Lake Mountain Lookout Complex Substantive Review	Keeper <u>Patrick Andrus 1/28/88</u> Attest _____
4. Deer Springs Lookout Complex Substantive Review	Keeper <u>Patrick Andrus 1/28/88</u> Attest _____
5. Promontory Butte Lookout Complex Substantive Review	Keeper <u>Patrick Andrus 1/28/88</u> Attest _____
6. Canjilon Mountain Lookout Cabin Substantive Review	Keeper <u>Patrick Andrus 1/28/88</u> Attest _____
7. Moqui Lookout Cabin Substantive Review	Keeper <u>Patrick Andrus 1/28/88</u> Attest _____
8. Woody Mountain Lookout Tower Substantive Review	Keeper <u>Patrick Andrus 1/28/88</u> Attest _____
9. Mormon Lake Lookout Cabin Substantive Review	Keeper <u>Patrick Andrus 1/28/88</u> Attest _____
10. Buck Mountain Lookout Tower Substantive Review	Keeper <u>[Signature] 1/28/88</u> Attest _____

1/28/88

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Multiple Resource Area
Thematic Group

Name National Forest Fire Lookouts in the Southwestern Region TR
State ARIZONA and NEW MEXICO

Nomination/Type of Review

Date/Signature

11. Lee Butte Lookout Tower and Cabin
~~Substantive Review~~

Keeper Patrick Andrus 1/28/88
Attest _____

12. Atascosa Lookout House
~~Substantive Review~~

Keeper Patrick Andrus 1/28/88
Attest _____

13. Barfoot Lookout Complex
~~Substantive Review~~

Keeper Patrick Andrus 1/28/88
Attest _____

14. Lemmon Rock Lookout House
~~Substantive Review~~

Keeper Patrick Andrus 1/28/88
Attest _____

15. Webb Peak Lookout Tower
~~Substantive Review~~

Keeper Patrick Andrus 1/28/88
Attest _____

16. West Peak Lookout Tower
~~Substantive Review~~

Keeper Patrick Andrus 1/28/88
Attest _____

17. Heliograph Lookout Complex
~~Substantive Review~~

Keeper Patrick Andrus 1/28/88
Attest _____

18. Monte Vista Lookout Cabin
~~Substantive Review~~

Keeper Patrick Andrus 1/28/88
Attest _____

19. Silver Peak Lookout Complex
~~Substantive Review~~

Keeper Patrick Andrus 1/28/88
Attest _____

20. Mogollon Baldy Lookout Cabin
~~Substantive Review~~

Keeper Patrick Andrus 1/28/88
Attest _____

12/14/88

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Multiple Resource Area
Thematic Group

Name National Forest Fire Lookouts in the Southwestern Region TR
State ARIZONA and NEW MEXICO

Nomination/Type of Review

Date/Signature

21. Mangas Mountain Lookout Complex
~~Substantive Review~~

Keeper Patrick Andrews 1/28/88
Attest _____

22. Reeds Peak Lookout Tower ~~Substantive Review~~

Keeper Patrick Andrews 1/28/88
Attest _____

23. Bearwallow Mountain Lookout Cabins
and Shed
~~Substantive Review~~

Keeper Patrick Andrews 1/28/88
Attest _____

24. Black Mountain Lookout Cabin
~~Substantive Review~~

Keeper Patrick Andrews 1/28/88
Attest _____

25. Hillsboro Peak Lookout Tower
and Cabin
~~Substantive Review~~

Keeper Patrick Andrews 1/28/88
Attest _____

26. El Caso Lookout Complex
~~Substantive Review~~

Keeper Patrick Andrews 1/28/88
Attest _____

27. Jacob Lake Lookout Tower
~~Substantive Review~~

Keeper Patrick Andrews 1/28/88
Attest _____

28. Dry Park Lookout Cabin and
Storage Sheds
~~Substantive Review~~

Keeper Patrick Andrews 1/28/88
Attest _____

29. Big Springs Lookout Tower
~~Substantive Review~~

Keeper Patrick Andrews 1/28/88
Attest _____

30. Kendrick Lookout Cabin
~~Substantive Review~~

Keeper Patrick Andrews 1/28/88
Attest _____

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Thematic Group

Name National Forest Fire Lookouts in the Southwestern Region TR
State ARIZONA and New Mexico

Nomination/Type of Review

Date/Signature

31. Volunteer Lookout Cabin
~~Substantive Review~~

Keeper [Signature] 1/29/88

Attest

32. Grandview Lookout Tower and Cabin
~~Substantive Review~~

Keeper Patrick Andrews 1/28/88

Attest

33. Monjeau Lookout
~~Substantive Review~~

Keeper [Signature] 1/29/88

Attest

34. Wofford Lookout Complex
~~Substantive Review~~

Keeper Patrick Andrews 1/28/88

Attest

35. Ruidoso Lookout Tower
~~Substantive Review~~

Keeper [Signature] 1/29/88

Attest

36. Bluewater Lookout Complex
~~Substantive Review~~

Keeper Patrick Andrews 1/28/88

Attest

37. Weed Lookout Tower
~~Substantive Review~~

Keeper Patrick Andrews 1/28/88

Attest

38. Carrisa Lookout Complex
~~Substantive Review~~

Keeper Patrick Andrews 1/28/88

Attest

39. Mount Union Lookout Cabin
~~Substantive Review~~

Keeper Patrick Andrews 1/28/88

Attest

40. Mingus Lookout Complex
~~Substantive Review~~

Keeper Patrick Andrews 1/28/88

Attest

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date entered

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Multiple Resource Area
Thematic Group

Name National Forest Fire Lookouts in the Southwestern Region TR
State ARIZONA and NEW MEXICO

Nomination/Type of Review

Date/Signature

41. Hyde Mountain Lookout House
Substantive Review

Keeper

Patrick Andrews 1/28/88

Attest

42. Glorieta Baldy Lookout Tower
Substantive Review

Keeper

[Signature] 1/27/88

Attest

43. Diamond Point Lookout Cabin
Substantive Review

Keeper

Patrick Andrews 1/28/88

Attest

44.

Keeper

Attest

45.

Keeper

Attest

46.

Keeper

Attest

47.

Keeper

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48.

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Attest

49.

Keeper

Attest

50.

Keeper

Attest

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National Register of Historic Places
Continuation Sheet

Section number _____ Page _____

National Forest Fire Lookouts in the Southwestern Region TR Coconino County, ARIZONA

Date Listed

COVER	ADDITIONAL DOCUMENTATION	Substantive Review	Date Listed
		Substantive Review	1/13/92
1.	Cooper Ridge Lookout Tree	Substantive Review	1/13/92
2.	Corral Lake Lookout Tree	Substantive Review	1/13/92
3.	Fracas Lookout Tree	Substantive Review	1/13/92
4.	Grandview Lookout Tree	Substantive Review	1/13/92
5.	Hull Tank Lookout Tree	Substantive Review	1/13/92
6.	Little Mountain Lookout Tree	Substantive Review	1/13/92
7.	Summit Mountain Lookout Tree	Substantive Review	1/13/92
8.	Tater Point Lookout Tree	Substantive Review	1/13/92
9.	Telephone Hill Lookout Tree	Substantive Review	1/13/92
10.	Tipover Lookout Tree	Substantive Review	1/13/92
11.	Tusayan Lookout Tree	Substantive Review	1/13/92