Little Boxes on the Hillside:

An Inventory and Analysis of Wildfire Lookout Structures in the
Pacific Northwest Region 06 of the United States Forest Service

Terminal Project
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For a Master of Science (M.S.) in Historic Preservation
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Cover photo: Buck Mountain Lookout c.1960 on the Willamette National Forest. Photo by R. Resler, USFS Negative no.505566; foresthistory.org

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Terminal Project Approval Page

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ABSTRACT

Fire watchmen have been employed by the United States Government to serve as guardians over the Nation's timber since before the establishment of the USDA Forest Service, originally the National Forest Reserves, at the turn of the 20th Century. Very early in its history, the Forest Service realized the value of providing an enclosed space or shelter for their firewatchers. This led to the advent of two types of lookout structures—Live-in and Observation-only—expressed through 16 different architectural styles. With the advancement of technology, it is no longer economically feasible for the Forest Service to employ fire watchmen at every established patrol point. Steadily over time, the Forest Service began to abandon or decommission their lookout structures while at the same time converted certain lookouts into profitable recreation rentals or communication relay sites. Several different departments and specialties within the Forest Service actively manage lookout structures including Fire, Recreation, Heritage, Facilities, and Special Uses; however, Region 6 does not have the means to manage every lookout.

The goal of this Terminal Project is to provide a single document that all departments within the Forest Service can use to make a holistic assessment of the remaining lookout structures and use as a tool to determine which lookouts to invest in, which ones to nominate for inclusion in the National Register of Historic Places (NRHP), and which ones to decommission. This is achieved through three means by providing:

1) An historic context that outlines the history and character defining features for the different lookout styles,
2) An inventory for all 17 Forest units, and
3) Metrics to help guide preservation efforts and maximize use.

The Pacific Northwest Region (Region 6) of the Forest Service has 173 standing lookouts within its administrative boundary—52 of which are in Washington, 119 in Oregon, and two in Idaho. Of the 173 total lookouts, only 139 are actively managed.

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DICTIONARY OF TERMS & ACRONYMS

Terms used to describe lookouts and outbuildings, wildfire detection and suppression activities, logging and forest health management, and other specialized equipment are somewhat unique to this region. The following terms and acronyms were compiled during research and it is meant to assist the reader as well as to explicitly differentiate and solidify the intended meaning of the author. This is by no means a complete compendium and it is important to note that not all of the terms and acronyms referenced below are mentioned in this Terminal Project. They do however, encompass information relevant to lookouts via wildfire management and forest health.

Term/Acronym	Definition
Adelaide	"A straight edge or pointer attached to the fire-finder 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." (Steere, 1987:149)
AWS	Aircraft Warning Service
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." (Steere, 1987:150)
Battered	A tower or frame that slants inward and is not perpendicular to the ground.
BLM	Bureau of Land Management
Bracing	Refers specifically to towers; it is the cross-brace pattern that provides structural support for the tower frame. They are usually described by a letter of the alphabet that they closely resemble (i.e., K-brace, H-brace, Z-brace, etc.)
Cab	Refers to a small square house or cabin that is situated on top of a tower or foundation platform. Cabs can be either live-in or observation-only.
Cabin	Refers to a small wood frame house or log cabin that serves as living quarters for the fire watchman. These are always live-in dwellings, where the main performative space is not for fire detection. These are residential dwellings and are constructed on the ground, usually near a lookout tower.
Catwalk	Decking with a balustrade around the exterior of a lookout cab. They serve as both a walkway and an observation platform.
CCC	Civilian Conservation Corps
Concrete Pier	Typical foundation footing for wooden and steel lookout towers.
CT	Creosote Tower
Cupola	A small squarish structure located on the roof of a cab or cabin. They are usually windows on all four elevations that provide the watchman an addition half-story for observation.
DAHP	Department of Archaeology and Historic Preservation. This is the preferred acronym for the Washington SHPO.

Term/Acronym	Definition
District _	Before regions were established, the Forest Service system had Districts. Once Regions were established and individual forest units, the term District referred to offices and posts established within a forest.
DNR	Department of Natural Resources. They manage Washington State Forests.
DOI	Department of the Interior
Enclosed Tower	Where the frame, as well as the cab, of the tower is enclosed. This area provides additional storage and sometimes living space.
FAA	Federal Aviation Administration
Fire Suppression	The act of minimizing the damage of a wildfire.
FFLA	Forest Fire Lookout Association
Flat	Refers to the roof configuration (i.e., the terminology "R-6 Flat" is an R-6 cab with a flattop/flat roof).
Gable	Refers to the roof configuration (i.e., the terminology "L-4 gable" is an L-4 cab with a gable roof). The gable is the triangular end of a building from cornice to the roof ridge. This triangular roof pitch allows water and snow to amass on either side of a singular ridge.
Guard Station	A booth or post that houses Forest Rangers and guards.
Gyppo	"A small logging operator who usually works on a contract basis" (Merriam-Webster)
Heliograph	A method of long-distance communication that uses mirrors to capture the sun and shutters to convey a Morse code.
Hipped	Refers to the hipped roof configuration (i.e., "L-4 hipped" is an L-4 cab with a hipped roof). The most popular roof finish on lookouts, the hipped roof is pyramidal at the base with a roof ridge rather than a point. This allows water and snow to amass on all four sides of the roof ridge.
IFC	Interagency Fire Center
Lookout	A term that can refer to both the watchman and the structure.

Term/Acronym	Definition
Live-in Lookout	A category of lookout where the watchman resides in the structure. These are usually utilitarian in form and function - typically with a modest kitchen and sleeping space, equipped with a fire-finder. This way the watchman can complete daily chores while keeping an eye on the timber. These include cupola cabins, cathedral cabins, L-4, R-6, etc.
Lookout Structure	A structure where the main performative space is used for wildfire detection. There are two types of lookouts -- Observation-only, and Live-in.
Lookout Style	Architectural and ornamental details applied to the exterior. Lookout styles include Cathedral, Cupola, D-1, D-6, L-4, L-5, Octagon, etc.
Lookout Type	There are two types—Live-in and Observation-only. The configuration of the floor plan and massing of structural components is what separates the two.
Megafire	Defined by the IFC as a wildfire that burns more than 40,500 hectares, or 100,000 acres, of land.
NHLR	National Historic Lookout Register
NRHP	National Register of Historic Places
Observation-only Lookouts	A category of structure where only the fire-finder is present and the watchman lives elsewhere.
ODF	Oregon Department of Forestry. They manage Oregon's State Forests.
Osborne Fire-finder	Developed by W.B. Osborne in 1909, this device is used to triangulate the location of a wildfire on the landscape and was widely implemented throughout Region 6.
Precontact	Refers to the time period before Indigenous peoples made contact with an outside culture.
Protohistoric	Refers to the time period between the precontact and historic during which a culture without writing has been in contact and documented in the written history of an outside culture.
PT	Pole Tower
Region 06	Washington, Oregon, and parts of Western Idaho and California.

Term/Acronym	Definition
SHPO	State Historic Preservation Office
Smokechaser	A term for a Forest Service employee who is deployed for the initial attach phase of fire suppression.
Silviculture	The science of growing and cultivating trees.
Snag	Standing dead tree
Spar Tree	A limbed and topped tree that serves as an anchor point for mechanized logging. The tree is selected for its height, strength, health, and location. After the tree is selected, it is limbed and topped. Block and tackle are added to the tree in order to affix a cable for dragging felled trees to a staging area (decks or landings) for transportation. The tree's strength is meant to withstand the weight and pressure of the trees being logged. Spar trees are often the sole tree left standing in clear-cuts and are a symbol of strength for loggers.
Steam Donkey	Steam-powered winch that enabled mechanized logging. It required four men and a horse to operate; the "choker-setter" or line-setter, the "donkey puncher" or engineer, the "spool tender" or line-guider, and the "whistle punk" or signaler (Johnson, 1996). The Steam donkey was integral to early mechanized high-volume logging.
TT	Timber Tower
USFS	United States Forest Service
Visibility Mapping	"The identification of and marking on maps of all areas seen by a particular lookout." (Steere, 1987:150) These markings are often recorded on panoramic photos circa 1930.
Watchman	Sometimes referred to as a Forest 'Guard, Ranger, or Lookout', these terms refer to USFS seasonal employees who work in fire lookout structures specifically for the purpose of detection and suppression of wildfires.
Wilderness	"An uncultivated, uninhabited, and inhospitable region"—Oxford Dictionary
WWLL	World-Wide Lookout Library
WPA	Works Progress Administration
WUI	Wildland Urban Interface

TABLE OF NATIONAL POLICY AND EVENTS AFFECTING REGION 06

Period	Event	Year	Impact
	U.S. Public Domain established	1781	Public domain was created when states ceded 233 million acres to the Federal government
	Constitution Article 4, Section 3, Paragraph 2	1789	Established Congressional authority over the public domain, including the sale of land
	Act of August 14	1848	Established territorial government of the Oregon Territory, which included Washington
	Act of March 3	1849	Established the Department of the Interior to manage all public domain
	Donation Land Claim Act	1850	Permitted settlers to claim unsurveyed land in the Oregon territory without legal subdivisions
	Treaties with Oregon tribes	1850-1855	20+ treaties were signed between Indian agents and Oregon tribes. None were ratified.
	Treaties signed in western Oregon tribes	1853-1855	Seven treaties total; ratified between 1854-1859. American Indians removed from Willamette Valley
	Treaties signed for Puget Sound and Olympic Peninsula	1854-1855	They were not ratified until 1858
	Rogue River Wars	1855-1856	Between miners from California and Native tribes. Natives were eventually defeated by miners and the US Army - moved to neighboring reservations.
	Oregon Statehood	1859	33rd state to ratify on February 14
	Homestead Act	1862	Adult citizen could claim 160 acres and were required to improve the land by erecting a dwelling and cultivating the land
	Department of Agriculture established	1862	Separated agriculture from the Department of the Interior

Period	Event	Year	Impact
	Union Pacific Railroad and Central Pacific Railroad grants	1862	Railroad lands were granted to the transcontinental lines
	Northern Pacific Grant	1864	Land grants were given to the first transcontinental railroad in the Pacific Northwest
	Oregon and California land grant	1866	Land grants to second railroad in the Pacific Northwest
	Timber Culture Act	1873	Allowed homesteaders to acquire an additional 160 acres if they planted trees on a quarter of their land
	William H. Brewer publication (early US forestry publication)	1874	*Woodlands and Forest Systems of the U.S.*
	President Grant addresses congress	1874	"…to indicate concern that the forests of the United States were being depleted by over cutting and by fire" (Carricker, 6)
	American Forestry Association est.	1875	
	Office of Special Agent in the Dept. of Agriculture est.	1876	Created by Congress to assess the Nation's forests
	Nez Perce War	1877	Chief Joseph surrenders
	SOI Annual Report, Fiscal year 1877	1877	Made first reference to the loss of public timber via fire.
	Timber and Stone Act	1878	Sale of 160-acre forest tracts from public domain in Oregon, Washington, California, and Nevada
	Division of Forestry created	1881	Under the Department of Agriculture

Period	Event	Year	Impact
	C.S. Sargent publication (early US forestry publication)	1885	*Report on the Forests of North America*
	Act of June 30	1886	Created Forestry branch of the Department of Agriculture
Forest Reserve Period	Dawes Allotment Act	1887	Created 160-acre land parcels for individuals and families, the remaining lands were sold off to non-Natives. Massive tribal lands were lost for the Colville, Grand Ronde, and Siletz.
	Washington Statehood	1889	
	William G. Steel	1889	Organized the Oregon Alpine Club, later called the Mazama's, were instrumental in early conservation and outdoor recreation on public lands
	General (Land) Revision Act	1891	Increased public land ownership and decreased timber and mineral extraction rights to private landowners
	Forest Reserve Act	1891	Authorized the President to withdraw timberland from the DOI and reserve from the public domain; established Forest Reserve policy
	Harrison Administration Reserves	1891-1893	Bull Run Reserve established in Oregon and the Pacific Reserve established in Washington. Bull Run merged with Cascade NF 1908
	Cleveland Administration Reserves	1892-1893	Cascade Reserve and Ashland Reserve in Oregon were established
	National Academy of Science	1896	Sent a Forestry Commission to survey forests in the western states
	Cleveland Administration Reserves	1897	Mt. Rainier Reserve and Olympic Reserve were established in Washington

Period	Event	Year	Impact
	Organic Act	1897	This Act was provided for the administration of Forest Reserves. Gifford Pinchot was hired as a Special Forestry Agent
	Act of July 1	1898	Appropriated funds to manage forest reserves
	USDA	1898	Gifford Pinchot became Chief of the USDA Department of Forestry
	USDI	1901	Forestry Division created in the Department of the Interior
	Division of Forestry renames	1901	now the Bureau of Forestry
	Yalcolt Fire	1902	Burned 500,000 acres in southwest Washington
	Crater Lake National Park est.	1902	
	Steven Puter indicted	1903	"King of the Oregon Land Fraud Ring" indicted for two conspiracies of falsifying homestead claims and bribing GLO inspectors
Early Forest Service Period	Forest Transfer Act	1905	Transferred Forest Reserves from GLO to the Department of Agriculture. United States Forest Service established
	American Antiquities Act	1906	Created protection for cultural sites on public lands
	Act of June 30	1906	Designated that ten percent of revenues from Forest Reserves would go to local governments
	Forest Homestead Act	1906	Opened agricultural lands within the Forest Reserves for settlement
	Siskiyou National Forest est.	1907	GLO lands transferred in 1906
	Cascade National Forest est.	1907	Also known as Cascade Range National Forest, disseminated in 1933
	Colville Forest Reserve	1907	Became Colville National Forest

Period	Event	Year	Impact
	Umpqua National Forest est.	1907	
	Coquille National Forest Est	1907	Lands combined with Siskiyou NF in 1908
	Act of March 4	1907	Created National Forests and forbade the President to create additional National Forest land
	Gifford Pinchot National Forest established	1908	Originally known as the Columbia National Forest, part of the Mount Rainier Forest Reserve
	Deschutes National Forest Est.	1908	
	Crater National Forest est.	1908	
	Washington Forest Fire Association est.	1908	Formed by former timber owners
	Chelan National Forest est.	1908	
	Mt. Hood National Forest est.	1908	Originally known as Oregon National Forest
	Freemont National Forest Est.	1908	Originally part of the Goose Lake Forest Reserve in 1906
	Great Fire of 1910	1910	3 million acres burned throughout Idaho, Montana, Washington, and British Columbia
	Weeks Act	1911	Allowed the Federal government to purchase private land, largely rivers and watersheds. Also promoted fire protection and suppression efforts through National, local, and private cooperative agreements. It also increased funding for fire protection, watershed protection, and forest land acquisitions

Period	Event	Year	Impact
	Paulina National Forest est.	1911	Contained portions of Cascade, Crater, Deschutes, Freemont, and Umpqua NF. Lands disseminated in 1915, now part of the Rogue River-Siskiyou NF
	Santiam National Forest est.	1911	Absorbed in 1933 to create Willamette NF
	Ochoco National Forest est.	1911	Formally part of the Deschutes NF
Intermediate Period	Chelan National Forest absorbs Okanogan	1921	Chelan absorbed partes of the Okanogan National Forest
	"Black Tuesday"	1929	U.S. stock market crash
	Crater National Forest re-named	1932	Known as Rogue National Forest.
Depression-era	Willamette National Forest est.	1933	Absorbed Santiam NF and parts of Cascade NF
	WWII	1939-1945	Aircraft Warning Service (AWS) was established to watch for enemy planes, Incendiary bombs landing along west coast and further inland

Period	Event	Year	Impact
World War II and the Post-War Period	Bombing of Pearl Harbor	1941	The United States entered WWII
	Lookout Air Raid	1942	Bombardment from Japanese fighter piolet, Nobuo Fujita in the Siskiyou NF, outside of Brookings, OR. Smoke reported from lookout and fire watchmen were dispatched.
	FS acquired Crooked River National Grasslands	1954	Originally called the Central Oregon Land Utilization Project. Name changed in 1960.
	Klamath Termination Act	1954	Indian termination policy set to assimilate Native tribes to American mainstream society. 1,660 of the 2,133 members of the Klamath tribe withdrew their membership, accepted compensation for land, and moved to urban settings. Other tribes affected include the Modoc and the Snake Indians.
	Western Oregon Indian Termination Act	1954	61 tribes west of the Cascade mountains were affected by the termination of sovereign status.
	Portions of Chelan NF renamed back to Okanogan	1955	

Period	Event	Year	Impact
Modern-Era	Multiple Use - Sustained Yield Act	1960	Mandates that the Secretary of Agriculture develop and administer renewable resources associated with timber, range, water, recreation, and wildlife for multiple use and the sustained yield of forest products
	Winema National Forest Est.	1961	
	Termination Act	1961	All federal aid and supervision over Klamath tribal lands ended.
	Columbus Day Storm	1962	Widespread damage throughout Oregon, wind gusts were reported between 145-179 mph, destroying vast amounts of timber and infrastructure
	Wilderness Act	1964	Created a legal definition for wilderness. This definition established regulations and use restrictions for long-term preservation of wilderness areas
	National Historic Preservation Act	1966	Outlines the role and level of involvement required from a Federal nexus in regards to the management of historic resources.
	National Environmental Policy Act	1969	A process to foster excellence that protects, restores, and enhances our environment through an Environmental Assessment (EA) or an Environmental Impact Statement (EIS)--tools to identify the potential for adverse effects required for any Federal undertaking.
	Forest and Rangelands Renewable Resources Planning Act	1974	Authorizes long-term planning by the FS to ensure a future supply of forest resources while maintaining environmental integrity.
	National Forest Management Act	1976	Requires a resource management plan for each unit of the NF system. The management plan requires an evaluation of resources based on multiple-use and sustained-yield principles
	Public Law No. 95-195, 91 Stat. 1415	1977	The sovereignty of the Confederated Tribes of Siletz Indians was restored

Period	Event	Year	Impact
	Cooperative Forestry Assistance Act	1978	Provides financial and technical assistance to private landowners to protect their wildlands from insects and parasites, wildfire, water quality, and recreational development
	Eruption of Mount St. Helens	1980	Most destructive eruption in US history. The eruption decimated old growth habitat for the Northern Spotted Owl.
Contemporary	Mount St. Helens National Volcanic Monument est.	1982	Originally part of Gifford Pinchot NF
	Public Law 97-391 96 Stat. 1960	1982	The sovereignty of the Cow Creek Band of Umpqua Tribe of Indians was restored
	Public Law No. 98-165, 97 Stat. 1064	1983	The sovereignty of the Confederated Tribes of the Grand Ronde was restored
	Public Law No. 98-481, 98 Stat. 2250	1984	The sovereignty of the Confederated Tribes of Coos, Lower Umpqua, and Siuslaw were restored.
	Klamath Restoration Act	1986	Reestablished the Klamath tribe as a sovereign state
	Public Law 101-42	1989	The sovereignty of the Coquille Indian Tribe was restored
	Northern Spotted Owl added to Endangered Species list	1990	Led to protections for Northern Spotted Owl habitat in old growth forest and sparked logging wars and illegal cutting of old growth. Olympic National Forest had to cut 80% of their personnel as a result of these protections and timber not being harvested.
	Tyee-Hatchery Fire	1994	Consuming roughly 135,000 acres
	Freemont-Winema NF est.	2002	Administratively combined
	Rogue River-Siskiyou NF est.	2004	Administratively combined

INTRODUCTION

Fire watchmen were first employed in droves by the United States Federal Government throughout the Northwest states to protect the Nation's timber after the Great Fire of 1910[1] that burned over 3 million acres of timber in Idaho, Montana, Washington, and British Columbia. This wildfire was the largest forest fire America had experienced--taking the lives of 86 citizens, eviscerating entire towns, and destroying an estimated 8 billion cubic board feet of merchantable timber (US Forest Service [USFS] Great Fire of 1910: 1-3). The Great Fire of 1910 was the first megafire that the USG was invested in suppressing—three future Forest Service chiefs were involved. The Buffalo soldiers were even deployed to Wallace and Avery, ID where they saved the citizens and entire town of Avery when it was completely surrounded by flames. From this catastrophic event, the infamous legend surrounding Edward Pulaski occurred where he saved his fellow firefighters in the mouth of a mining tunnel. This single disaster influenced the Agency to create a National fire protection policy. The Great Fire of 1910 was a catalyst for the establishment of over 800 lookout structures in Oregon alone (Kresek, 1984: 5; Hill, 2004: 105).

The landscape in the Northwest region is harsh and dramatic. However, not all landscapes were conducive for a single style of lookout structure and many different styles were tested. There are two types of lookouts—Observation-only and Live-in. Live-in lookouts are a type of lookout where the watchman resides in the structure. These are usually utilitarian in form and function, typically with a modest kitchen and sleeping space, and equipped with a fire-finder. This way the watchman can complete daily chores while keeping an eye on the timber. Observation-only lookouts are generally elevated in a tower or spar tree and have much smaller cabs where only a fire-finder is present; the watchman lives elsewhere. These two types were designed to accommodate patrol points in both the higher mountainous regions as well as the lower rugged valleys. Lower elevation patrol points would require forest rangers to create make-shift observation-only structures in spar trees to peer over the timber; whereas, at higher elevations, rangers could get an unobstructed 360-degree view and didn't need to be elevated but needed living quarters.

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[1] Also referred to as *The Great Idaho Fire* and *The Big Blowup*.

Standardization began in the Forest Service with the replication of what is known as the D-6 (District 6, now Region 06) lookout, based on a model constructed by Lige Coleman on Mt. Hood. Other standardized lookout construction plans provided by the Forest Service included the L-4, L-5, L-6, D-5, and many more. Different regions adapted different styles of lookouts for the variety of landscapes that they managed. Region 06 also approved plans for steel Aermotor towers, Octagons, and what is known as the R-6 lookout structure. Before the advent of radar, infrared, and fiberoptic technology, these administrative structures were essential to the security of our Nation's timber as well as the surrounding rural communities. It has now become less cost effective to fund a full-time fire watchman in some areas when technology can relay the same information more accurately and efficiently.

The Forest Service, and many other government agencies, still employ fire watchmen to use these structures for fire detection—their original intended use. Some lookouts have been developed into communication sites—housing radio repeaters, Federal Aviation Administration (FAA) equipment, generators or they are adorned with satellite dishes and antennae. Others have been converted into recreation rentals to accommodate overnight guests and collect fees for the lookout's maintenance. While the remainder have not been evaluated for inclusion in the National Register of Historic Places (NRHP) and/or have fallen into disrepair.

Fire lookout structures are symbols of the Forest Service's protective presence in the Pacific Northwest. Fire lookouts are older and arguably more symbolic of the Forest Service's dedication to wildfire management than Smokey the Bear. Fire lookout structures are deeply woven into the history and development of the Pacific Northwest. They are tangible representations that embody the value of public safety and community service; while, at the same time, offering spectacular views. Lookout structures were some of the earliest administrative facilities developed by the Forest Service that aided in the execution of its mission[2]. Constructed and/or assembled by forest employees and local carpenters, fire lookouts are an integral component to

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[2] other examples of the earliest developed facilities included trails, trail shelters, roads, bridges, and telegraph and telephone lines (Atwood et al., 2005: 65).

ensure protection over the region's abundant timber supply which, in turn, supports the regional and national economy.

PROBLEM STATEMENT

Federal law requires the USFS to identify, evaluate, and preserve cultural resources on federally-owned public lands under its jurisdiction. These requirements are mandated under the Antiquities Act of 1906, the 1966 National Historic Preservation Act (NHPA), Executive Order 11593 of 1971, the 1974 National Environmental Policy Act (NEPA), the 1976 National Forest Management Act, and the 1979 Archaeological Resources Protection Act (ARPA).

The total number of lookouts ever constructed on Forest Service land at any given time is still unknown. According to Forest Service records available in the National Resource Manager (NRM), a system of database tools for managing information across the Agency, there are only 139 managed lookout facilities out of the total 10,506 facilities managed by the Forest Service in Region 6. Managed lookouts as a type, represent 1.32% of the total number of structures on Forest Service lands in this region. Of the facilities managed, lookouts represent a maximum deferred maintenance cost of over $4million. Outside of managed facilities, this inventory found that there are 34 lookouts and possibly more that are heritage assets and not managed facilities. Region 06 does not have the funding or resources to maintain all 173 lookouts on its lands.

There are 16 different styles of lookouts remaining on Forest Service lands in Region 06, all of which present different preservation challenges. Due to the degradation and unmaintained tower structures, the biggest challenge lookouts face is public safety. Lookouts are isolated in the depths of the forest where emergency services or law enforcement aren't readily available, and the Forest Service could be liable for injuries if they occur from of the lack of structural integrity. Some Forests have posted signs at several lookout locations that warn users to avoid climbing on unstable lookouts, but because they are visited by a number of enthusiast groups and tourists, lookouts receive a high level of vandalism that includes the theft of tower parts to initials being carved into its members to spray painting the envelope.

Many lookouts also lack energy efficiency or modern utilities which makes their conversion to a profitable use, like a rental, challenging. Lookouts need to be accessible by either trail or roads that require maintenance. The structure itself needs to be able to withstand the elements and climate change has increased the frequency and severity of weather-related damage. Located in the depths of the forest, lookouts are susceptible to extreme weather conditions and the materials and composition of certain lookouts cannot withstand the elements that include heavy snowfall, treefall, heavy rain, hurricane winds, wood-boring insects, termites, or other vermin that can carry disease. Furthermore, they are not immune from being ravaged by wildfire which claimed several lookouts throughout the Nation in this past year. All of this contributes to the overall deferred maintenance for these structures.

SCOPE

The administrative boundaries for this terminal project are limited to the Pacific Northwest Region 06 of the USDA Forest Service which includes 17 national forests in Oregon and Washington that extend into parts of Idaho and California. There is one national grassland area, two national recreation areas, two national scenic areas, and two national volcanic monuments. The six national forests in Washington State are Colville, Gifford Pinchot, Mt. Baker-Snoqualmie, Okanogan, Olympic, and Wenatchee. The 11 national forests in Oregon are Deschutes, Fremont-Winema, Malheur, Mt. Hood, Ochoco, Rogue River-Siskiyou, Siuslaw, Umatilla, Umpqua, Wallowa-Whitman, and the Willamette. The national grassland is the Crooked River in the Ochoco National Forest. The two national recreation areas are Hells Canyon and Oregon Dunes; the national scenic areas are the Columbia River Gorge and the Cascade Head; and the two national volcanic monuments are Mount St. Helens and Newberry. The Pacific Northwest Region 06 is one of nine National Forest Regions throughout the United States that are administered by the Department of Agriculture under the direction of the Chief Forester. The Agency's main headquarters are in Washington, DC and is referred to as the Washington Office. The headquarters for the Pacific Northwest Region 06 are located in Portland, Oregon.

The temporal boundaries for the historic context portion of this study extends from 1905, when the earliest administrative and recreational developments occurred, to present, which surpasses the National Register nomination requirements that require the resource be of 50 years of age, unless otherwise noted as significant in the modern era. Contextual information is provided which pre-dates 1905 and this is to provide a framework for the development of the National Forest system in the Pacific Northwest as well as provide a context for policies, laws, and philosophies which impacted the management of Federal lands in this area. The inventory includes all lookouts, including contemporary construction. The last lookout to be constructed in Region 06 was in 2004.

The term lookout is vague. Although the term "Lookout" is a more commonly used term to refer to someone who mans a Lookout structure, this paper will continue to refer to them as "Fire Watchmen" to avoid confusion between the person and the building. For the sake of this paper, the term lookout will refer to a structure specifically constructed for wildfire detection. Some ranger stations and guard stations were used to detect wildfire; however, they were not constructed for that specific intended use and are not included in this inventory and analysis. Some lookouts are no longer a performative space for fire detection but still retain the original construction elements and features that make them lookout structures. These are included.

A lookout is considered standing if all foundation supports and cab walls are intact. With regard to tree structures, the tree itself has to still be erect—live or dead.

METHODOLOGY

This Terminal Project is divided into three major sections—Historic Context, Analysis, and Metrics. This tome will serve as a basis for making future management decisions as well as an aid for evaluating unevaluated lookout structures, both eligible and ineligible, within Region 6.

PART I - HISTORIC CONTEXT

The first part of this terminal project presents an historic context. The historic context is based on existing secondary resources including context statements, historic overviews, National Register nominations, Region 06 databases, lookout plans, photographs and other internal agency reports and letters, in addition to nationally published sources on Forest Service history. The historic context is divided into periods of significance that have already been predetermined by the Forest Service as denoting significant architectural trends in this Region, outlined in *Utility in Service* (Kay Atwood, Sally Donovan, Dennis Gray, and Ward Tonsfeldt) in 2005. These periods represent important shifts in patterns of development of the Forest Service at both the regional and national levels. These periods of significance have been approved by the Oregon SHPO and Washington DAHP through previous National Register nominations and Federal publications. Within these periods of significance, a brief context to historic trends, technology used during the period, and lookout styles constructed will be provided. Each of these Periods of Significance relates to the development of lookout styles and these are each expanded upon within their chronological period. These periods are:

- Forest Reserve Period: 1897-1904
- Early Forest Service Period: 1905-1911
- Intermediate Period: 1912-1932
- Depression-era: 1933-1941
- World War II and the Post-War Period: 1942-1960

The historic context will also include relevant information on lookouts for the period between 1960 and 1980, referred to as the Modern era and the period from 1980 to present, referred to as the Contemporary period.

The historic context also outlines the known preservation issues and past management practices concerning lookouts. This foundation provides a context for how these sites developed—identifying key landscape features, secondary structures, and cultural material associated with these sites.

PART II – ANALYSIS

This section analyzes the inventory collected and provides a comparative analysis of the remaining styles. Maps and images are provided for context. The qualitative data was collected through document research and review of Forest Service Facility and Engineering records in the NRM database, Mark Swift's Lookout Inventory, heritage program records in the INFRA legacy database and NRM, Forest Fire Lookout Association's (FFLA)[3] Worldwide Lookout Library (WWLL), Rex Kamastra's Pacific NW Forest Lookout webpage[4], Will Hite's *Outdoor and Travel Adventures*[5] blog, Ron Kemnow's *Forest Lookouts* webpage[6], and the National Historic Lookout Register (NHLR)[7]. Several of these sources include their own inventories.

The Federal Aviation Administration (FAA) completed a survey in 2019 for several lookout sites in the Region to conduct condition assessments and encourage development or decommissioning of these communication sites. The mission of the 2019 FAA survey was to identify sites which could be developed for annunciation displays and to identify decommissioned communication sites. Their survey strategy was derived directly from the USDA USFS Region 06 Facilities records for all known lookout sites ever constructed on forest lands in Washington and Oregon; however, the FAA survey team did not visit every lookout communication site in the region and only went to a selection of forests based on the forest's response. Some forests in the region were not included in the 2019 FAA survey due to lack of response and correspondence. The update by the FAA to the Forest Service Facility records include spatial data, structure condition, type or style employed, landscape features, secondary structures, construction and/or decommissioning dates, engineering specifications, National Register status, as well as historic aerial photographs and more recent detailed photographs. The survey that the FAA completed provides the most recent and accurate information regarding a selection of lookouts on National Forest lands in Region 06.

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[3] Firelookout.org
[4] Firelookout.com
[5] Willhiteweb.com
[6] oregonlookouts.weebly.com
[7] NHLR.org

The information gathered for this terminal project included the following data on each lookout in the region: district, site number (if assigned), common name, style, year constructed, NRHP status, unit type (administrative, developed rec, etc.), accessibility, if in designated wilderness, building type (basic or complex), primary building material, planning status, current use, seasonality of use, facility condition, date of last condition assessment, geographic location (Latitude/Longitude [Lat/Long]), partner groups, and other historic details/relevant remarks.

The photos provided in this tome and associated presentations were derived from the National Historic Lookout Register, the Firefighter Lookout Association, Rex Kamastra's *Forest Fire Lookout* Page, National Register of Historic Places nominations, Will Hite's *Outdoor and Travel Adventures* blog, and USFS Architectural histories. Each photo is individually cited.

PART III – METRICS

The metrics consider management decisions outlined in Recreation Site Facility Maintenance Plans (RSFMPs) and Facility Maintenance Plans (FMPs), facility type, current use, spatial distribution (micro and macro), temporal distribution, recreation rental adaptability, and NRHP eligibility and significance. These metrics were developed to help guide program managers in deciding if the lookout they are managing should be retained or decommissioned.

Fire lookouts are generally erected as administrative structures--strategically constructed to be used and staffed by Forest Service employees for successful completion of the Forest's mission. Since these structures are no longer required for daily operations and fire detection, they are either converted into a recreation rental, treated as a relay point for telecommunication devices through a Special Use Permit (SUP), or they become abandoned. The purpose of this section is to identify solutions to keep these lookouts in continual use and the metrics developed are for this purpose. Management options include multi-property nominations, Special Use Permits (SUPs), recreation rentals, interagency agreements and partnerships, identifying special interest groups, relocation, and adaptive use potential under Section 111 of the NHPA. All of the lookout sites that the FAA determined ideal for developing, installing communication

devices, or continuing services to will need to be managed collectively by the region in order to uphold this Interagency Agreement. Therefore, all of the sites that the FAA recognized during their assessment will be included in the inventory and should be accounted for in preservation management plans moving forward.

Lookouts include several different types and styles; the majority of which were modeled after standard plans developed by Regional Offices. To discern which lookouts are worth preserving or developing, a series of evaluation criteria was employed. For a lookout structure or site to be included in the representative sampling, it must either be:

i. significant to local, regional, or national history through either:

   1) association with events that have made a significant contribution to the broad patterns of our history (NRHP Criterion A, 36 CFR 60.4(a));

   2) association with significant people (NRHP Criterion B, 36 CFR 60.4(b));

   3) embodying the distinctive characteristics of a type, period, or method of construction (NRHP Criterion C, 36 CFR 60.4(c));

   4) being fifty years old, or if under fifty years old, demonstrate exceptional significance (NRHP Criteria consideration G, 36 CFR 60.4(g));

ii. possess integrity from the historic period in which it was constructed. The lookouts must have integrity of location, design, setting, materials, workmanship, feeling and association (36 CFR 60.4);

iii. currently used or possess potential for continued use

   1) currently in-use through a SUP or Interagency Agreement,

   2) converted, or able to be converted, into a recreation rental and asset.

PART 1: HISTORIC CONTEXT

CHAPTER 1: DEVELOPMENT OF THE U.S. FOREST SERVICE IN REGION 06

The Pacific Northwest (Region 06) of the Forest Service encompasses the 17 national forests, grasslands and the Columbia River Gorge National Scenic Area within the states of Oregon and Washington, and portions of western Idaho[8]. Although the region does not include the entire Pacific Northwest, the region's development is closely related, and a vital contributor, to the history of the Northwest as a whole. The Pacific Northwest has a unique cultural identity that comes from precontact history, protohistoric contact, geography, and inimitable bioregionalism.

Geographically, the Pacific Northwest is defined as the watershed of the Columbia River; however, the Puget Sound, coastal rivers, and Southern Oregon are also included. The Columbia River and its tributaries connected Native peoples in this region. These tributaries provided routes for communication, trade, and travel through the wilderness and Indigenous groups lived along the river valleys where the runs of anadromous fish species were vital to their food supply. These tributaries to the Columbia River provide a tangible resource that connects the western valleys with the inland areas of Oregon, Washington, Idaho, and portions of western Montana. The drastic landscape of the Northwest is complex, with river valleys and mountain ranges extending from sea level to 14,000 feet.

Most of the Forest Service land that remains in this region is oriented along the Cascade mountain range, which is the most vertically dominant landform in the region. This major mountain range extends from southern British Columbia, through Washington and Oregon, and terminates in Northern California. The Cascade Range divides the dry high plains desert of the east from the moist temperate zones in the west. Other prominent mountain ranges in the region include the Siskiyou Mountains in southern Oregon, the Oregon Coast range[9] along the

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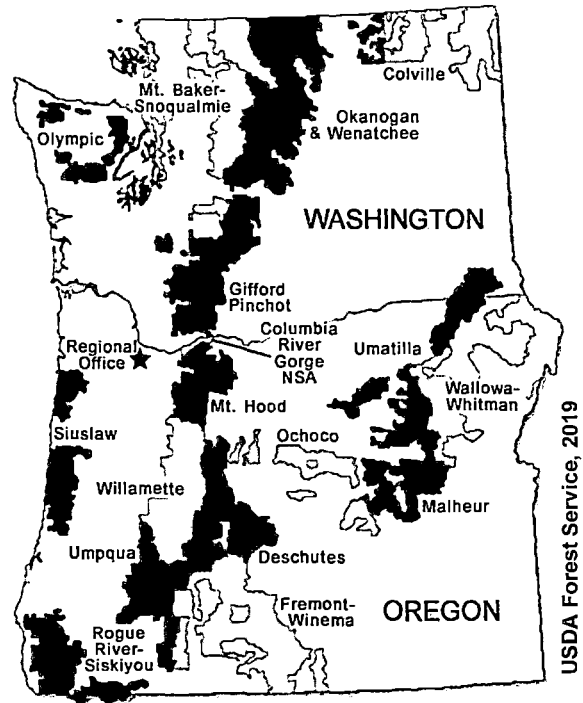
[8] Management of the two lookouts in western Idaho is administered by the Wallowa-Whitman National Forest.
[9] Also called the, "Pacific Coast Range".

Pacific Ocean, the Olympics' in northwest Washington, the Blue Mountains in eastern Oregon and southeast Washington, and the Rocky Mountain foothills in the Northwest corner of Washington. These sublime, mountainous areas are the location of fire lookout structures.

Beginning in the 1840's, emigration west of the Mississippi opened a new frontier with public lands extending to the Pacific Ocean, called the Oregon Territory. A territorial government was formed in 1848 and government leaders applied themselves vigorously to allocate the public domain (Atwood, et al.; 2004: 5). The Department of the Interior (DOI) was created in 1849 for the purpose of distributing lands by means of various homestead programs, state land claims, and large grants that were allocated to railroad companies participating in the transcontinental railway system circa 1850. All of these programs required the clearing of mass timber land which ultimately led to a decline in overall biomass nationwide.

The Department of Agriculture was established in 1862 and initially only oversaw food and agricultural production, nutrition science, natural resources, and rural development; the science of Forestry and silviculture would not gain popularity until the mid-1870's. The DOI initially managed all forested lands, known as Forest Reserves, until the Forest Transfer Act in 1905 which transferred management of the Forest Reserves to the Department of Agriculture.

In 1870, Oregon, Washington, and California collectively produced 521 million cubic board feet of timber that was only 4% of the nation's total timber, which was thought to be an insignificant amount. Prior to 1870, Congress and the American people had little interest in forest conservation and there were very few laws in place that protected timberlands[10]. However, a surge of interest in landscape conservation led to the development of silviculture in the US. Silviculture and Forestry began in German universities and became an emerging interest at American universities like Harvard and Yale during this time (Atwood, et al.; 2004: 5). Managed forests, plantations, and stands of timber were not a new concept in Europe. A large proponent to forest conservation efforts in the US were in part due to a paper written by botanist Franklin B. Hough entitled, "On the Duty of Governments in the Preservation of Forests" which he presented to the American Association for the Advancement of Science in 1872 (Atwood, et al.; 2004: 5-6). That same year, Congress set aside Yellowstone National Park and passed the Timber Culture Act the following year. Enthusiasts for this new science established the American Forestry Association in 1875 and the Department of Agriculture created the Division of Forestry in 1876.

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[10] Two laws were passed by Congress prior to 1870. One included the establishment of timber reserves for the US Navy and the other controlled timber trespass on public land (Atwood, et al.; 2004: 5).

In 1878, Hough presented his report on the diminishing condition of the Nation's Forests to the Secretary of Interior, Carl Schurz, who ordered and disseminated 25,000 copies (Atwood et al.; 2004: 5). That same year, Congress passed the Timber and Stone Act which established 160-acre timber claims for individual citizens but otherwise forbade unauthorized cutting on public lands. In 1879, Schurz asked congress to establish timber preserves in California (Atwood et al.; 2004: 5).

Euro-Americans who began to enter the Northwest territories in the middle decades of the 19th Century were drawn to the remoteness of the Oregon country based on a Christian-bias of a pristine and unspoiled wilderness. These "Eden seekers" tended to be unwavering God-fearing peoples, embodying the spirit of Jeffersonian self-sufficiency (Atwood et al., 2004: 7). Missions were established to assimilate the Native populations to Euro-American religion and culture. Until the transcontinental railroads reached Oregon and Washington in the 1880's, the Pacific Northwest was remote and difficult to reach—the most reliable access was by ship. The gold rush of 1849 in California (Region 05) hastened the fervor for settlement in the west. However, as the lodes were claimed and depleted, the miners migrated north into Jacksonville, Oregon in the Applegate Valley around 1850. This entanglement of cultures in southern Oregon as well as Eastern Washington between 1840 and 1850's led to the mass slaughter and dispersal of Native peoples to reservations—most famously the Whitman incident in 1847 near Walla Walla, Washington and the Rogue Indian Wars in southern Oregon between 1855 and 1856. This erasure was a key factor to the 'taming' of wilderness areas and allowed white settlement to commandeer forest lands in the years to come.

> "Timber depredation, as much as they are to be guarded against, are by no means the most serious danger that threatens the great pine forests... It is fire that is most to be dreaded. The forest fires in the timber regions of Montana, Wyoming and the other Western Territories have destroyed more trees in the past summer than have been lost by all the depredations from the beginning of the first settlement until the present data."
>
> -Secretary of Interior
> Annual Report, 1889

Many years of arguing over the role of the USG, timber management and wildfire suppression resulted in the Organic Act of 1897. For the first time, personnel were hired to manage the Forest Reserves (Carricker, 1991: 8). At this point, Forest Reserve land was open for timber harvest, recreation, irrigation, mining, and grazing which increased the risk of wildfires.

Recreation enthusiasts in the late nineteenth century formed organizations that advocated for the creation of national park lands and for the preservation of wilderness, which

was vital to the development of the USFS in the Pacific Northwest. Boone and Crockett Club was founded in 1887 and attracted membership from several national figures including Theodore Roosevelt and Gifford Pinchot (Atwood, et al., 2004:6). John Muir campaigned throughout the Pacific Northwest and spent several summers on the Upper Klamath Lake in Oregon. Roosevelt and Muir wrote tirelessly about the outdoors and were able to reach a substantial audience through books and magazine articles. These books and essays were educational and motivated the public to support the creation of Crater Lake National Park in 1902 and the Cascade Forest Reserves in 1907 (Atwood, et al., 2004: 4, 6).

Politically, however, Forest Reserves set aside large swaths of land without compensation to state and local governments; the reserved land was removed from property tax roles which would have otherwise generated income. For example, 80 percent of Washington's Skamania County was part of the Mt. Rainier Forest Reserve (Atwood, et al., 2004:8) which meant that local governments would need to provide community services to the citizens living on the reserves without being able to tax the land. The services that the states and local governments were charged with included road construction and maintenance through the reserves as well as a management plan for natural disasters such as wildfire and floods. Many counties throughout the northwest considered dissolving and aligning with adjacent counties to create an adequate tax base

> *"In consequence of the absence of a well-developed system of administration, the value of this [public] forestry property is annually decimated by the fire and by illegal and wasteful cutting."*
>
> *-Senate Committee on Agriculture and Forestry, 1892 (Wengert et al., 1979)*

(Atwood, et al., 2004: 8; Mack and McClure, 1992: 12). In 1906, legislation was passed that mandated the return of 10% of all revenue from national forest lands to local governments (Atwood, et al., 2004: 9) as well as the Forest Homestead Act that opened forested land to homesteading.

The Act of July 1, 1898 allocated funds for forest rangers and personnel to manage and patrol the forests which provided steady employment revenue to the local communities. The Act also provided a management structure--Superintendents managed the lands at a State level, Supervisors to manage individual reserves, and Rangers who patrolled the backcountry on horseback. There were so many applicants for ranger positions at the Cascade Forest Reserve alone that a personnel policy had to be established to limit the applicant pool and ensure that only the "vigorous, vigilant, and fearless" (Rakestraw and Rakestraw, 1989 :16; Atwood, et al.,

2004: 11) were employed. Trails were the primary means for accessing the Forest Reserves at that time, the majority of which were of Native American origin.

CHAPTER 2: EARLY FOREST SERVICE PERIOD (1905-1911)

The National Forest Service system was established in 1905 when Congress transferred forest reserves (Transfer Act) from the General Land Office (GLO), under the DOI, to the United States Department of Agriculture (USDA). Along with the transfer of property, management practices and philosophies differed from the DOI and the USDA. Forest reserves established under DOI were managed from a position of conserving the timbered areas; whereas, the USDA emphasized utilization of the resources (Atwood, et al., 2004: 11-12) and from 1905 to 1907, seventeen additional reserves in Oregon and Washington were set aside. This gave the Pacific Northwest the highest percentage of reserved land in the nation.

The Transfer Act provided national forests with financial security and independence. Receipts from all forest resources including grazing and timber extraction were to go into a special fund for the management and expansion of National Forests. This freed the Forest Service from having to be dependent on operating funds and appropriations from Congress (Atwood, et al., 2004: 12). Although the Forest Service had its financial autonomy, the Oregon land fraud scandal in 1902 undermined the public's confidence in the forest reserve system to self-regulate[11]. To stand apart from the previous management, the Forest Service instituted civil service exams to test the Ranger's knowledge of forestry laws and conservation principals, identification of trees by their Latin name, animal packing, surveying, riding, shooting, building structures, and basics for cooking over a camp fire (Atwood, et al., 2004: 13-14, 66). The *Use Book* was published in 1907 by Gifford Pinchot which clarified points of public tension from the old policies and outlined the new management roles of the National Forest Service system.

~~████████████████████████████~~ The Great Fire of 1910, colloquially known as *The Big Burn*, scorched a tremendous area of land throughout the Pacific Northwest and British Columbia. This large loss of timber was a major catalyst for the Forest Service to become a forest-fire suppression organization. Directly related to the 1910 fire season, the Weeks Act of 1911 authorized the USG to purchase private land, largely to protect rivers and watersheds, but also to promote a fire protection system. This system outlines a collaborative suppression effort between National, State, and private agreements.

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[11] High level politicians were implicated for improprieties while the lower-level supervisors and rangers were viewed as "opportunistic and dilatory" (Atwood, et at., 2004: 13).

Aside from the Great Fire of 1910, a critical proponent and advocate for making wildfire detection and suppression part of the Forest Service mission, was its Chief, Gifford Pinchot (1898-1910). Pinchot and his constituents promoted wildfire detection, prevention, and suppression and his vision would shape the future of the Forest Service (Grosvenor, 1999: 95; Thornton, 1986: 14). Pinchot's system focused on early fire detection, establishing observation and patrol points, and establishing telephone communication lines. However, when President Theodore Roosevelt left office in 1909, Pinchot lost a valuable ally in the White house and eventually President Taft had him removed in 1910. This, along with a lack of designated funds, would restrict the development of fire lookout sites and other administrative structures on the Forest Service until 1920 and 1930.

EARLY FOREST RANGERS

Early Rangers possessed a veritable mixed bag of skills ranging from barely literate to engineers who studied at Yale (Atwood et al., 2004; 10-11). Rangers were responsible for enforcing Federal regulations including mineral extraction, grazing, and timber policies. The Forest Rangers were the original field employees who carried out agency goals and missions by surveying land, building cabins, counting sheep, building corrals, constructing trails and roads, fighting wildfires, and whatever else was required.

Due to the vastness of timber lands in the Pacific Northwest, the labor supply was often inadequate. At the time, the Forest Service had very little strategy developed or even any systematic organization for fire detection and suppression other than individual efforts of these Forest Service employees, whom often depended on the neighboring ranchers and farmers. The earliest forest rangers were hired for the fire season in the summer months and spent much of

their time "chasing smokes" and battling wildfires with hand tools (Atwood et al., 2005: 66). During the early part of the century, national forests had developed very few roads and trails beyond Native American travel ways. This is important because access into the forest was limited and sometimes would require the ranger to go off-trail for miles—knowledge of the landscape and land features was critical to reach the fire and limit the spread.

Ranger riding the trail on fire patrol to Bald Knob in Oregon c.1908, foresthistory.org

Among the many other duties, Rangers were responsible for building pack trails into the wilderness. This created an interconnected trail system that connected remote fire guard and ranger stations. Fire watchmen initially established lookout posts on the highest peaks, which offered a 360-degree panoramic view. If there was not a view available, watchmen would establish a Crow Nest structure in the tallest tree with a camp in the nearby vicinity. Eventually these structures became more sophisticated and permanent as the fire watchman became an essential asset to daily operations and forest development.

During the early Forest Reserve period, rangers had very little opportunity to prevent, detect, or suppress wildfires. The fire watchmen, affectionately called "smoke chasers," were typically the first to respond by foot or horseback using shovels and axes to fight the fire. The Forest Service created policies regarding fire prevention in the form of regulating timber sale contracts and requiring loggers to dispose of slash before it became hazardous. The Forest Service used citations and fines to educate recreational campers and stockmen about fire safety and prevention (Bach, 1989: 84). Logging railroads that burned coal were mandated to use oil instead. The Southern Pacific Railway cooperated with these early Forest Service programs and they patrolled their tracks and provided fire suppression equipment and aide in the form of railroad cars (Rakestraw and Rakestraw, 1988:

"The Rangers are the men who carry out the work on the ground. They are directly under the Supervisor. They must thoroughly know the country, its conditions, and its people. They live in the forests, often in locations far from settlement and sources of supply. The Ranger must be able to take care of himself and his horses under very trying conditions; build trails and cabins, ride all day and all night; pack, shoot, and fight fire without losing his head."

-the Use Book, 1907

53). However, the most successful of these fire prevention management tactics was the construction of a network of lookouts stretching across the forest system.

EARLY FOREST PERIOD TOOLS AND TECHNOLOGY

Lookouts were strategically placed at what are known as, Patrol Points. Patrol Points were stopping points for backcountry Rangers on horseback patrols that offered overviews of the forest lands. Even if a lookout structure had not been established, Rangers would take advantage of the views that they offered. If there was a smoke on the horizon, Rangers would use a triangulation device such as an Alidade, to pin-point the exact location. Often times, Rangers and watchmen were the first to detect the fires and the first to

Rangers testing a firefinder from a Crow Nest. Photo from 1911.

respond. Fires were attacked using basic hand tools like a hoe, axe, and shovel to create a fire line and to try and reduce the overall amount of fuels. The purpose of Fire Lines is to create a break in the biomass in order to quell the spread of the fire. Hand tools are used to dig into the ground until bare mineral soil is exposed. Fire response and suppression was informal as the national framework for handling wildfires had not been conceptualized. Although the Osborne Fire Finder was developed and tested by the Forest Service as early as 1911, they did not become a popular tool and an installation in the lookout until lookouts became standardized during the Intermediate Period.

Alidade and fire finders are early examples of the Forest Service's commitment to developing what is known as a "fixed-point detection" system that was comprised of a network of fire observation locations that provided optimal views and were strategic in detecting and locating wildfires in timberland (Atwood et al., 2005: 66).

ALIDADES & PLANE TABLES

An alidade is a surveying tool that is used to measure distance through triangulation of horizontal and vertical angles from a reference point (Hill, 2013: 5-6). This is done through a scope on a flat plane, tripod, or platform in conjunction to a datum on a topographical map and a scoping device that provided an azimuth, similar to a sexton. The stands were generally chest height with a square plane top, roughly two to three feet in height, and a map affixed to it (Carricker, 1991: 27). Many early fire detection structures and patrol points utilized alidades, sometimes placed plainly on a stump, to locate the fire.

Olympic National Forest Supervisor and District Ranger using alidade. Date unknown

S.L. Hoover with an alidade on a stump at Maiden Peak in 1921, Deschutes NF.

CRANK TELEPHONES

Good field communication is vital when, "a minute may mean millions[12]". The earliest surviving record of line construction was in 1905 on the Siskiyou Forest Reserve that was completed by a private logging company (Forest History Society). Because rangers patrol the remote regions of the forest, crank telephones were used at lookout sites well into the 1960's. The transmitter box located at the patrol point or lookout was powered by batteries and the crank action was used to rotate an internal belt that was essentially a hand generator (DOI, 1958: 7.1-7.2). The telephone boxes were originally made for use in mines and the cast-iron boxes were resistant to explosions and vandalism. In the early days, nearby residents could use the Forest Service telephone in exchange for their services as per diem fire personnel.

Devil's Peak "Iron Mine telephone and a crude temporary alidade whittled from shakes. - E.W. Smith, 1915", NPSHistory.com

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[12] "Use of Telephone Lines in Fighting Fires," American Forestry 27, No.8 (August 1911): 468.

Later, in 1915, the Forest Service entered a long-term agreement with the American Telephone and Telegraph company (AT&T) where the Forest Service received a 50% discount for toll calls if they would not construct lines for their competitors. A significant development in communication came from the notorious Forest Service telephone engineer, "Ring Bell" Adams from Region 1, who designed a portable handheld phone that could be clipped to a telephone line (Forest History Society). In Region 6, Clay M. Allen created a vine maple telephone bracket that held the line away from the tree and was strong enough to withstand inclement weather. However, the telephone still had many limitations including cost, terrain, or even being ravaged during a wildfire.

Charlie Lewis using a #9-wire telephone line in the field, Olympic NF. Photo by Asahel Curtis
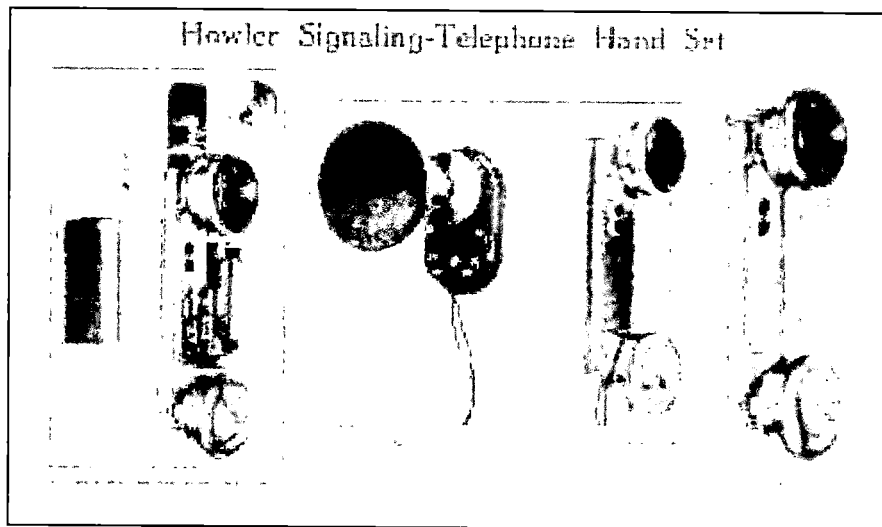
Portable telephone handset and "howler" signaling device (foresthistory.org).

EARLY FIRE DETECTION STRUCTURES (1905-1911)

Although ranger stations and guard stations[13] are not considered lookout structures, they aided and housed Rangers that utilized the lookout structures and patrolled the forest. These are the first administrative properties to be placed in the forest system. These buildings are limited in number[14] and represent the earliest period of the National Forest presence in Region 6. Lookouts from this period were temporary and observation-only aside from cabin structures. Guard stations Ranger stations, and cabins were the first permanent structures on the forests and they established a Northwest, or Cascadian, aesthetic that is mimicked in the construction of Live-in lookouts in periods to come.

The early ranger stations were small rectangular structures generally made of log with gable roofs, small multi-light windows, and some covering over the porch. The Olallie Meadow Guard Cabin (1910) in the Mt. Hood National Forest has a front-facing gable roof covered with wood shakes, wood shingles on the gable ends, horizontal round logs walls with timbers chinking, and a shed roof supported by log posts. This is one of the few surviving seasonally used cabins from this era. The Packwood Lake Guard Cabin (1910) in the Gifford Pinchot National Forest represents the early period of dispersed Forest Service administration when much of the terrain was accessible only by trail. Built by a private hydroelectric company, the 18' x 20' rectangular log building became a fixture in Forest Service use and around 1916, the building provided housing for backcountry patrolmen.

Fire watchmen and guards established a variety of temporary shelters and tree stands. Lookout styles

EARLY ADMINISTRATIVE BUILDINGS

Olallie Meadow cabin constructed in 1910 on Mt. Hood NF in Oregon.

Packwood Lake Guard Cabin constructed in 1910 on the Gifford Pinchot NF in Washington.

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[13] Guard stations and Ranger stations are not included in the lookout inventory. They are included here to provide context of the built environment in Region 06 during this time period.
[14] Unfortunately, most of these buildings have either been demolished or remodeled.

constructed during this period included pup tents or rag camps in clearings; crow nests, tree platforms, and spar tree lookouts in tall trees, tower platforms, and small log cabins during this period.

RAG CAMPS

Fire watchmen, more commonly referred to as "Lookouts", watched over the Nation's timber from the top of strategic mountain peaks, buttes, and vistas. Fire watchmen often stayed overnight in a tent, or rag camp, at a nearby spring and they would hike to the summit or lookout every morning. Some of the first lookouts simply consisted of a knob, or knoll, with no structure.

Stephenson Tree Platform with rag camp below, Crooked River National Grasslands. Date unknown.

Rag camps usually accompanied other lookout sites like patrol points, Crows Nests, or platform towers. Camps were generally used at secondary or tertiary patrol points and were often replaced with permanent live-in structures (Carricker, 1991: 22). There are two surviving examples of rag camps in Region 6 from this period and likely more in the archaeological record. The examples are Hickman Butte (1906) on Mt. Hood and North & South Baldy (1909) on the Colville.

Eagle's Aerie spar tree lookout on Cook Creek constructed in 1929. Notice man standing on rung halfway up the tree, Olympic NF.

SPAR TREE

This type of lookout has a wide range in variability and they were also sometimes described as being synonymous to a tree platform. An important component to spar trees that set them apart as an architectural style is that they are an anchor point for mechanized logging. A spar tree is selected for its height, strength, health, and location within a stand. After the tree is selected, it is limbed and topped. Block and tackle are added to the tree in order to affix a cable for dragging felled trees to a staging area (decks or landings) for transportation--called yarding. The strength of a spar tree is

meant to withstand the weight and pressure of yarding felled trees. Their height is significant too because they contribute to some of the tallest of the tree lookout structures. Another difference between Spar Tree lookouts and other tree lookouts is that Spar Trees supported both platforms and enclosed cabs.

Some spar tree lookouts are referenced as being a simple platform without a railing to which an alidade was affixed. In some instances, a small enclosed cab was placed at the top. The lookout cab was either 6' x 6' or 7' x 7' feet and the spar tree was sometimes affixed with an L-6 (Swift, 1992c: 1-18). The top of the Spar Trees was accessed through several styles of innovative ladders—some with spiral ladders and metal spikes. The cabs were accessible via a trap door. Spar tree lookouts were used for observation-only and there are no longer any known standing spar tree lookouts in Region 06.

TREE PLATFORMS

Tree platforms and Crow Nests were some of the earliest elevated lookout structures built by fire watchmen and their names are often used interchangeably. Crude in design and construction, these structures were placed on the tallest tree on the peak. The trees were strategically chosen based on the view it provided and the trees ranged anywhere from 10 feet to 176 feet in height (Swift, 1992: 1; Carricker, 1991: 29). Tree platforms consist simply of ladders which have either been placed against or nailed into the tree trunk—the fire watchman would observe the landscape from the top rung. The tree top was often removed and an alidade or triangulation device would be placed on the remaining stump. Occasionally, a board would be affixed to the tree top or stump to provide a flat surface for the alidade (Hill,

Black Mountain Tree Platform built c.1937 (photo from 1937), Ochoco National Forest

2013: 21-22). Tree platforms are the first lookout structures to be developed for fire detection in the region. Many of the lookout trees were only in service for a few years before being replaced by a freestanding lookout structure. There are no known surviving Tree Platforms from the Early Forest Service period; however, several still remain on the adjacent summits from later periods and were even constructed well into the 1930's.

CROW NESTS

Wolf Mountain West, built c.1921 (photo from 1923), Ochoco NF

Crow nests are similar in design to tree platforms and they are distinguished by a wooden platform with an enclosed catwalk on the top of large spar trees. This platform could support the weight of the person as well as the Alidade. These trees were sometimes completely limbed and the top removed. Ladders were still used to reach the Crow Nest platform; however, variations of spiral ladders made of metal spikes were also used. In some instances, a series of platforms were built connecting two or more treetops to leverage the view available. Watchmen would take up residence at rag camps at either the base of a lookout tree or in a flat clearing adjacent to the lookout. There are no known surviving Crow Nests from this period. Much like the Tree Platform, several still remain from later periods on the adjacent summits and new ones were constructed well into the 1930's.

PLATFORM TOWERS

Platform towers are less common and were placed in areas to cover blind spots. These structures were often temporary and constructed in the event of an emergency. Some towers are free-standing and others incorporate living trees and snags. Platform towers are made with at least three to four pole legs and a plank floored platform, ranging from 6 to 10 sq. feet (Swift, 1993: 1; Carricker, 1991: 30). The top platform was for an alidade to triangulate the location of

Monument 83 Platform Tower built sometime in the 1920s (photo c.1930), Okanogan-Wenatchee NF.

Salmo platform tower on the South side c.1929 with a cabin at the base, Colville NF.

Ned Hill Platform Tower built in 1933, Olympic NF.

the smoke. These towers were not uniform in style or construction and the builders often used what resources were available on site. Due to their temporary nature, platform towers were moved or abandoned as the Forest Service invested in more permanent live-in structures. Platform towers are for observation-only and are the first example of the Forest Service's attempts in creating a free-standing lookout. There are only four Platform Towers remaining in Region 6.

LOOKOUT CABINS

Lookout cabins have a wide range of variability and were the earliest examples of Live-in lookout structures. The lookout cabin protected the watchmen from the elements but also provided modest living accommodations. Cabin structures were small in size, not typically any larger than 14' x 14' and were assembled with locally acquired timber and stone. The timber used in these structures were hewn on-site. There are no known surviving lookout cabins from the earlier periods and the oldest surviving lookout cabin in Region 6 is Walker Mountain cabin on the Deschutes National Forest, constructed in 1917[15]. Walker Mountain cabin is also the only lookout remaining in

Mt Bonaparte slant-walled cabin with open air viewing platform, c. 1914. USFS photo.

Region 6 where the envelope was composed of locally acquired stone.

Walker Mountain Lookout Cabin, date unknown. Deschutes National Forest, USFS photo.

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[15] this is also the oldest Administrative building on the forest.

CHAPTER 3: INTERMEDIATE PERIOD (1912-1932)

This period was economically tumultuous for the United States, ranging from prosperity and growth from WWI production around 1920 to economic despair of the Great Depression in 1932. For the Forest Service specifically, this period signifies its maturation as an agency. The Forest Service began to cultivate a distinct culture focused on "timber production, fire suppression, forest research, and recreation" (Atwood, et al., 2004: 15). Early mountaineering clubs, hikers, and alpinists were numerous as well as active in the conservation and outdoor recreation movement. Alpine clubs erected lodges and ski areas on many forests including Mt. Hood, Mt. Baker-Snoqualmie, Olympic, and Wenatchee National Forests.

The Agricultural Appropriations Act of 1912 appropriated 10% of the income generated from forest receipts for new road and trail construction (Atwood, et al., 2004: 20). This Act marks the beginning of this era because it greatly expanded the infrastructure on National Forest land. As automobiles were becoming more affordable and reliable, the expectations on road conditions from the American public raised. The Agricultural Appropriations Act of March 4, 1915, created a policy that allowed recreational leases and land holdings where individuals could build cabins, lodges, churches, summer camps, and other businesses (Atwood, et al., 2004: 20-21; Lelande,1998:12-13). A key component to all of these areas was that they were accessible by automobile. Hot springs throughout the region attracted visitors and nearly every forest had at least one developed hot springs area for tourists.

Under the USDA, biological research and Silviculture became vital to the development of wood products and technology. In 1928, the McSweeney-McNary Act provided funding for a nationwide timber survey and they began in

SHASTA LEILA HOOVER

S.L. Hoover was the first female fire watchman in Oregon who also worked at the highest Forest Service peak at the time. She began her career during WWI on Bachelor Butte and ended her career in 1924. During her posts, she survived being trapped in a 3-day ice storm, spent several days without food or sleep during a severe fire incident, travelled 2miles roundtrip for fresh water, and trained squirrels to come when she called, "Here kitty, kitty" (Kresek, 1998, 68).

"Selfie" of S.L. Hoover c.1924. In her right hand is a squirrel and in her left hand is the string pulled to trigger the photograph.

Region 6. The survey concluded in 1935 and confirmed that "Region 6 held the greatest volume of quality timber remaining in the U.S." (Atwood, et al., 2004: 21, Doig, 1976: 13). This survey specifically was valuable in rebuilding the United States' economy after the Great Depression and providing valuable timber for war efforts during WWII.

At this time, the FS began training personnel in fire suppression tactics and created a hierarchy for fire crews during this period. At the beginning of this period, most of the labor pool were locals—mostly farmers and ranchers, with no real training. When WWI broke out, the Forest Service began hiring female fire watchmen. With more men being sent overseas, women were often the only applicants. As early as 1920, seasonal personnel gradually included more college students who worked as "laborers, lookouts, and fire chasers (Atwood, et al., 2004: 20)". Because the best views are located at higher elevations, watchmen were vulnerable to direct sun exposure, heavy winds and rain, lightning strikes, hail and snow, as well as wild animals. Eventually, fire watchmen and the Forest Service realized the value of an enclosed space (Hill, 2013: 21-22). Rather than constructing tree houses, the Forest Service began moving toward developing permanent live-in cabs that were functional and could provide a 360-degree view. In areas where the watchman needed to be above the tree line, the cab would be placed on tower structure—in rare circumstances, a tower platform placed on the roof of the cab.

The Pacific Northwest began to feel the pressure of the looming Great Depression as early as 1927 with declining sales and excess production (Atwood, et al., 2004: 21-22). For many rural communities, the timber industry was the only employer--logging and mill work being the primary source of income. The drought throughout the Midwest states, colloquially known as the Dust Bowl, worsened during the 1920 and caused many families to abandon their farms and attempt to start new lives further west. Many of these farmers arrived in the Northwest without the means to start a new farm and lacked sufficient knowledge to acquire work in the forests or at the mills (Atwood, et al., 2004: 21-22). The immigrant farmers to these rural timber communities began to saturate the labor pool beyond the few jobs that were available, and this situation was devastating in many communities when the mills shut down. Some communities became self-sufficient and relied on gardening, hunting, fishing, and rearing livestock; however, like most people throughout the Nation, communities in the Pacific Northwest found themselves in desperate situations.

Advancements in communication and technology, combined with regional analysis and planning, have been a vital contributor to the form and use of lookout architecture as well as vital for the Forest Service to successfully accomplish their mission. During this period, a system was created based on the philosophy of detecting and suppressing wildfire efficiently. Comprehensive maps of fire occurrence (fire intervals) were made throughout the 1920's to help the agency determine a fire detection system where smokes could be observed within a 15-mile radius of any given lookout and detection should occur within 15 minutes (Hill, 2013: 20; Thornton, 1993: 12-13). Fire Interval maps were then used to determine the most effective and appropriate locations to construct lookouts.

"Take horses and ride as far as the Almighty will let you and get control of the forest fire situation on as much of the mountain country as possible. And as to what you should do first, well, just get up there as soon as possible and put them out."

-Instructions to a Ranger from B.M. Huey, 1927 "The First U.S. Forest Ranger", Journal of Forestry 45, No. 10: 765

Prior to this period, structures throughout the region were largely vernacular in style and represented the skills of the builders. Bungalow and Craftsman styles were popular at the time and most buildings often exhibited some characteristics and features of the two. Common architectural features of Early Administrative buildings throughout Region 6 include, "gable or hip roofs often with dormers, 1 to 1-1/2 stories, eave overhangs with exposed rafter tails, shiplap, clapboard, wood shingle or shake, or drop siding, 1/1 or multi-pane double-hung windows, and full or partial porches. The more remote administrative buildings were sometimes log structures with gable roofs, porches, and multi-light windows" (Throop, 1995: 5). The earliest of these designs lacked standardization (i.e., cabins and cupola cabins). Considerations for standardization began as early as 1911 and continued into the Intermediate Period. This standardization is a key element in the design styles to come in the Intermediate Period in the form of kits designed specifically to maximize fire detection. The earliest standardized lookout kit was the D-6.

CHANGES IN TECHNOLOGY

The earliest known permanent structure built in Region 6 for the sole use of being a fire lookout was a cabin constructed in 1910 on Table Mountain in Mt. Hood National Forest[16] in Oregon (Swift, 1993). However, the first lookout structure that was architecturally designed
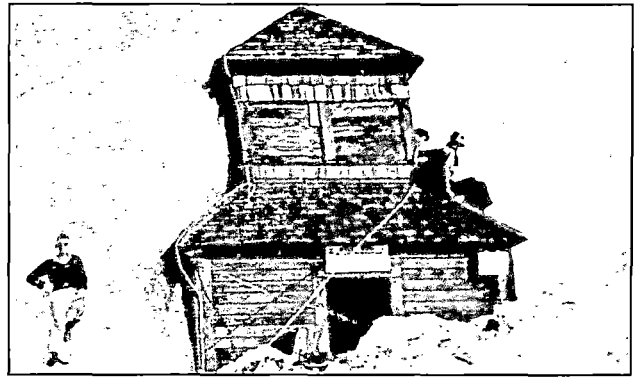
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[16] This area was part of the Oregon National Forest.

specifically to accommodate fire- watching was a prototype for the D-6[17] Cupola designed by Elijah 'Lige' Coalman on Mt. Hood in 1915.

The 2-story live-in cab was a 12' x 12' framed house with fenestrations on all facades and a smaller cupola observatory on the second floor. The roof was hipped to divert snow which encrusted the structure most of the year. The success of this

Mt. Hood lookout July 1934. Lige Coalman is in photo left. USFS photo.

structure on Mt. Hood led to the placement of this specific style of fire lookout on some of the Pacific Northwest's most formidable mountain peaks.

But not all forested landscapes have mountain peaks. Some of the most strategic areas for fire watching were not above the timberline and there was a need for the lookout cab to be elevated above the treetops—areas where Crow Nests and Tree Platforms are located. Coert Dubois, the first District Forester in Region 5 (California), designed a 14' x 14' floor plan that was first introduced in California in 1917. This floor plan would be the basis for all live-in cabs to come (Grosvenor, 1999: 97). The cab design could be placed on a timber tower which meant it could be raised above the timber line and could be utilized at every kind of lookout location, even where the viewshed was obstructed. This design made it so that the fire watchmen would have the ability to have a 360-degree panoramic view of the Forest while completing everyday menial tasks. Cupola lookouts were placed on the ground and also raised on towers.

Previously, the Forest Service's role in the Region was largely custodial--Rangers patrolled and chased smokes before the forests engaged in large scale landscape planning. The majority of the fire lookouts in service were in remote areas, void of traversable roads. During the Intermediate Period, development of travel-ways continued through prioritizing the development of interconnected trails and telephone lines, that allowed communication between District offices and open communication with the lookout (Atwood et al., 2004: 56). Trails, roads, and other linear services were the primary means of accessing the forests and construction standards were developed quite early and evolved as public use expanded in later periods. The construction of these services was completed by Forest Rangers and local hires. The construction standards and materials used "reveal much about the Forest Service as a land

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[17] The "D" stands for District, the term used before "Region".

managing agency, its mission, and its priorities" (Atwood et al., 2004: 54-55). Trail shelters, roads, bridges, and communication facilities were also developed at this time to aid in fire suppression and the Forest Service's overall mission.

As early as 1917, airplanes were used alongside Fire Lookouts; a tactic which was thought to be a cost-effective management plan to identify and locate wildfires especially during electrical storms where wilderness areas are heavily impacted. In 1927, Washington experienced another devastating fire season that highlighted the need for lookout structures to be constructed on secondary or intermediate peaks throughout the Region (Carricker, 1991:12). The need for an increased number of lookouts emphasized the need for a more functional lookout that would be simple to build, habitable, and easy to transport. Unlike its cumbersome cupola counterpart (D-6), the L-4 was developed to be more versatile and practical alternative. Although steel tower designs were approved c. 1924, their use in Region 6 did not begin until after the 1927 fire event. Both the Great Fire of 1910 and the 1927 Washington fire seasons emphasized the need for more infrastructure.

CARRIER PIGEONS (1919-1921)

The use to carrier, or homing, pigeons to communicate proved very effective in the mountainous northwest region. The idea to use carrier pigeons came from the Navy where they recorded flights up to 600 miles per day (Forest History Society). The first use of pigeons during an emergency wildfire incident was during the 1919 fire season in Oregon. The successful journey conveying messages directly from the fire-line to agency offices led to the purchase of more pigeons and equipment from the Navy in 1920[18].

Ranger ready to release carrier pigeon with a fire message on Deschutes National Forest, Ore.c.1920. Forest History Society.

"As a means of quick and certain communication with the Ranger out on the fire-line and headquarters, the carrier pigeon has no competition."

- "Rangers Use Carrier Pigeons,"
Forestry Kaiman 4 (1922): 35

[18] "Carrier Pigeons Aid Foresters," American Forestry 25, No. 11 (November 1919): 1504 and "Pigeons for Forest Fire Fighting," American Forestry 26, No. 2 (February 1920): 122.

FIRE FINDERS

William Bushnell Osborne, Jr., created the "Osborne Fire Finder" in 1910-1911 while working for the Engineering office for the USFS on Mt Hood in Oregon. This tool was a great technological advancement and proved to be highly effective in triangulating a smoke over the alidade. The instrument is essentially a round disc on a level stand with a map of the surrounding area under a dial with compass degrees etched on the rim. The watchman can swivel the Fire Finder to 'sight-in' the direction of the fire. This allows the watchman to precisely pinpoint the location of a fire within 1/60th of a degree (Hill, 2013: 38; Kresek, 1985: 29). The device was simpler to operate than the alidade and less fragile. Many versions of the Fire Finder were produced[19] as they were later incorporated into the center of the lookout structure; however, the Osborne was the preferred device. Some historic fire lookouts still have an operable fire finder's remaining in the cab.

Osborne Fire Finder on a rocky knoll c.1915, Rogue River-Siskiyou NF, USFS photo.

HELIOGRAPH

A heliograph consists of a system of mirrors and shutters on tripods that are positioned to reflect sunlight. By manipulating the shutters and creating flashes, the watchmen were able to communicate from long distances. The Forest Service explored this form of communication between fire watchmen as well as the ranger districts during the early 1910's. Heliographs were first used and largely successful in the Southwest Region of the Forest Service in Arizona and New Mexico; however, they proved challenging in the Pacific Northwest due to lack of sun exposure. "Its flash could carry 50 miles or more in clear air, and its message could be delivered in a matter of minutes, which meant a fire crew could be working on a new fire many days earlier." (McCarty, 2010).

Ranger Smith using a Heliograph in 1912 on Black Butte Lookout in California--Region 5. U.S. Forest Service photo courtesy of the Forest History Society, Durham, N.C.

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[19] From 1915-1934, a fire finder was marketed in Portland, Oregon by the Luepold-Volpel and Company. This was also a popular model in the Northwest.

PANORAMIC LANDSCAPE PHOTOGRAPHS & PHOTOGRAMMETRY

In the 1930s, Region 6 used panoramic photographs to recreate the viewshed from lookouts. These were used to record and identify physical attributes on the landscape to better provide precise location data of smokes. Each photograph has a horizontal reference line that correlates with the elevation of the lookout and a vertical scale is provided to correlate with the line of sight (DOI, 1958: 6.9). There are usually a set of three photographs that cover the entire viewshed from the lookout—often taken from the rooftop. These, along with a fire finder, were valuable tools to aid the watchmen in locating and describing landscape features like drainages and peaks, especially at night.

Dispatcher Phelps leveling panorama camera. Fremont NF, 1928. Photo Courtesy of the Forest History Society, Durham, NC.
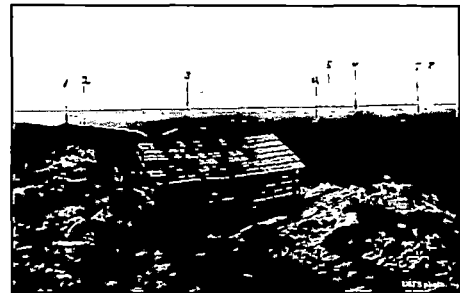
Photogrammetry of North Twentymile Cabin, Okanogan-Wenatchee NF, date unknown

INTERMEDIATE PERIOD FIRE STRUCTURES

What makes structures from this time period so unique is that they were built under the direction of Forest Officers, with guidance from the Regional Office, regarding cost and appearance before funding and labor became available through the Great Depression work-relief programs (Throop, 1995: 6). The Intermediate Period marks the initial investment from the Forest Service in permanent mission critical infrastructure like roads, trails, administrative offices, and outbuildings. For lookouts, this is characterized by the transition from temporary patrol points for observation-only lookouts (i.e., Crow Nests and Tree Platforms) with associated rag camps to live-in lookout structures strategically designed to facilitate fire detection.
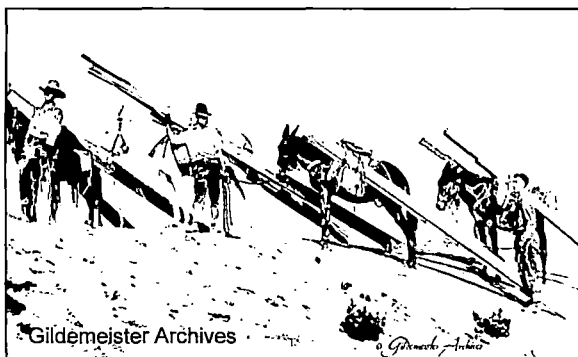
Forest Rangers on Mule Peak in 1926 with parts to assemble an L-4-AR, Wallowa-Whitman NF.

Considerations for standardization began as early as 1911 and continued into the Intermediate Period. This standardization is a key element in the design styles to come in the Intermediate Period in the form of kits designed specifically to maximize fire detection. The lookout kit was a key concept when developing styles known as the D-6 and the L series. The L series maximized the efficiency of the lookout kit.

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A benefit to standard plans is that they came with a list of exact measurements and parts with detailed packing and assembly instructions. This streamlined not just the lookout style, but the entire construction process. Tower structure plans were also provided and constructed by hand.

The Lookout kit was often constructed or assembled by the forest rangers who occupied them. The region provided approved designs and plans that were meant to be replicated by each forest. These designs varied for the different landscape needs where different materials (i.e., the need for a tower at varying heights) would need to be constructed. The approved designs provided a list of building materials to acquire and location specific restrictions (Hill, 2013: 27). It also provided guidance on how to pack the materials and distribute the weight. These kits were then assembled at the patrol point by the watchmen and forest rangers. According to Carrick, "A total of 78 lookout points were established between 1910 and 1915."

Because the focus changed from temporary patrol points to establishing permanent dwellings and workspace, the footprint of a lookout on the landscape expanded into a complex that includes other permanent structures and fixtures on the landscape. These include, but are not limited to, flagpoles, outhouses, garages, ladders and stairs, telegraph wire and insulators. Lookout trees, platforms, and Crow Nests were still used and erected during this period; however, they were used in a temporary or emergency incidents. Three live-in lookout designs emerged during this period—cupola lookouts, cathedrals, and the L series; and three observation-only lookout types—metal Aermotor towers, L-5s, and L-6s.

CUPOLA LOOKOUTS

The original cupola design is credited to Lige Coleman who was the first person to develop a lookout structure on the summit of Mt. Hood in 1915. This lookout was a feat of engineering that amazed tourists—postcards of the lookout were sent around the nation and the lookout was an overnight sensation. The lookout became so popular that the Forest Service in Region 06 decided to standardize the design for it to be placed on multiple peaks throughout the region. This model was known as the District 06, or D-6 lookout. The D, or District, in D-6 stands for the Pacific Northwest Region of the Forest Service when their Regional offices were called Districts.

At this time, the Regions were regarded as Districts and other districts in the Nation also created their own plans for a standardized cupola lookout (i.e., the D-1, L-3, L-2, L-1, R-3). The Forest Service constructed several non-standard cupola designs including log and frame cabins retrofitted with cupolas, structures built with stone, slant-walled frame cupolas, and open-air cupola designs (Swift, 1993; Williams, 1991). The D-6 cupola design became a common

architecture style employed by the Forest Service across the Nation in the early part of the 20th century into the 1920s and became synonymous with fire suppression in the Northwest region.

The D-6 lookout came in a pre-cut kit that was packed to the lookout location and assembled by the watchman. The wood frame construction kit included a 12' x 12' floor plan with a 6' x 6' cupola centrally located on a hipped cedar shingle roof; the cupola also has a hipped roof. The design for the envelope would be cladded with either a double "v" rustic or clapboard siding. Both the main elevation and the cupola would have wooden awning windows and shutters on all four sides. The interior included either tongue-in-groove wall cladding and flooring or a wallboard sheathing like Celotex, an insulated fiberboard sheathing. The D-6 lookout was the most prolific lookout until the L series was designed to replace it.
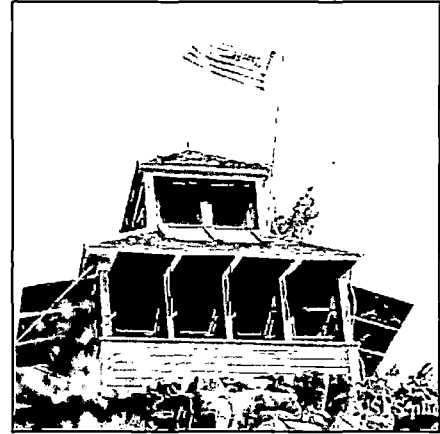
Dutchman Peak (1925), D-6 on Rogue River-Siskiyou NF. Photo from 1925.

The L-2[20] style was developed by Clyde Fickes on the Idaho panhandle in the late 1920s. This design was intended to be a low-cost model that could be constructed by a single person in the field. The L-2 style mimicked the D-6 with gabled rooflines and a main floor which measured 12' by 14' with a stick frame construction, rather than the 12' x 12' D-6 model. The L-1 was also a 12' x 14' but was a saddle-notched log cabin with a gabled roof; however, the cupola on the L-1 had a frame construction (Carricker, 1991: 33-34).

The D-1 style (also sometimes referred to as the L-3) was a regional adaptation originally developed on the Flathead National Forest in Montana by D.L. Beatty (Hill, 2013: 25; (Hartmans, 1991: 27). A D-1 is characterized by a 14' x 14' log cabin with dovetail-notching and a gabled roof and a "quarter-sized gable roofed cupola" (Swift, 1993: 1). This style is widespread throughout Idaho and Montana and to a lesser extent in Oregon and Washington. The only surviving D-1 was constructed by the Okanogan-Wenatchee and it was later determined that the lookout was actually located in British Columbia. This lookout is now Canada's southernmost lookout.

Monument 83 (est. circa 1920s), D-1 Cupola, Okanogan-Wenatchee NF (found later to be in British Columbia), Photo c. 1930s

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[20] The L stands for Lookout and numbering denotes the variations in this case. The Intermountain Region is Region 1.

The R-3 style was originally developed on the Nez Perce National Forest and is characterized by a log cabin style lookout with hand hewn logs and dovetail corner notching (Swift, 1993: 1; Kresek, 1985). There were only 30 R-3s ever constructed throughout the nation—all of which have been destroyed.
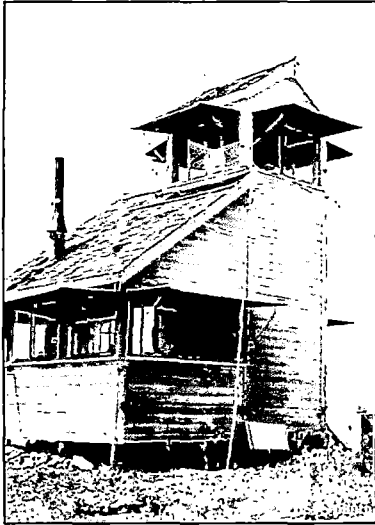
Bald Mountain Two-story Cathedral (1929- late 1960's), Siskiyou NF. Abandoned in 1967, photo from 1934.

CATHEDRAL LOOKOUTS

This lookout style was employed during a transitional period between the D-6 cupola to the prolific L-4 and Cathedrals were only constructed for three years. Unlike the Cupola lookouts, the Cathedral style has an "L" shaped composition (roughly 12' x 12') with a quarter-sized second story (roughly 6' x 6')—the second story was placed above only one side of the ell and the rest of the structure was a single story (Swift, 1992: 1; Carricker, 1991: 34). The first story had a sloped shed style roof and the cupola had a gable roof and window openings on all four sides. Fewer than 10 of these structures were built in Region 06. No cathedral lookouts were built in Region 01, 02, 03, or 05 according to regional reports and Forest inventories—this style might have only been built in Region 06.

THE L-SERIES

Originally, the L series was developed in Region 05 with a prototype in 1917 and they were constructed well into the 1950s. The model is a 14' x 14' square wooden cab that was placed on the ground as well as towers over 80 feet in height. The L-4 pre-cut lookout house kit was less cumbersome to assemble than the cupola models and they were constructed on lookout sites from 1929 through 1957.

The model got rid of the second story cupola and combined the living quarters with the observation platforms into a single story. The L-4 model also introduced a unique awning-inspired shutter system where wooden panels were mounted horizontally over the two-over-two

windows to provide shade and better visibility in the summer. In the winter, these panels are lowered to cover and protect the windows from winter storms. The model also included materials for a wood-shingled roof and materials for a tongue-in-groove interior and exterior siding. The model could be placed on the ground or elevated on a timber or pole tower. This versatility of the L-4 is what makes this model stand out against its counterparts.

High Rock (1929) L-4 Gable, Gifford Pinchot NF. Photo from 1987, Ray Kresek.

The L-4 is the most prolific lookout to be utilized by the Forest Service throughout the history of Region 06—erecting over 600 in the Pacific Northwest Region alone.

The L-4 live-in lookout was not only designed to accommodate the ranger and his gear but also provided a kitchen with cupboards, a bed, and an Osborne Fire Finder. The earliest L-4 models had a gabled roof and were replaced with a hipped roof in 1932 (Atwood et al., 2004: 57). There have been five variations of the L-4 over the 40 years it has been in service including the L-4-A, the L-4-AR, the L-4 Gable, L-4 Hip and the Standard '36 (Swift, 1993: 1; Carricker, 1991: 38). Other models in the L series that were constructed in Region 06 include the L-5 and the L-6.

The L-4-A was the first model in L series. Developed by Region 05 from 1917 to 1923, the L-4-A is a 14' by 14' live-in house with a very steep pitched hip roof and was never in service in Region 06. However, Region 06 took the initial design on the L-4-A and made alterations known as the L-4-AR, or locally known at the C.C. Hall Special (Swift, 1993: 1). Changes to the 4-A design included changing the six windows per side to five with one upper and one lower pane. The door and entryway on the L-4-AR replaced the middle window while the rest of the design configuration remained the same.

Calamity Butte (1927) C.C. Hall Special (L-4-AR), Malheur NF. Photo from 1942

The L-4-AR is distinctively identified by its very steep

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hipped roof[21] with minimal eaves. The L-4-AR model was first built in 1923 and the last one in 1929—a total of six years.

The L-4 Gable was developed in Region 01 as a modification to the L-4-AR, the most obvious of these modifications being a gabled roof; however, the roof pitch is not as steep as previous versions. Other modifications included five windows on each side with nine panes per window. The door was moved from the center to the right end, replacing the window on the gable end. The L-4 Gable was built between 1929 and 1933 and was the first of the L series to be introduced into the region. The short lifespan of this model was due to the lack of functionality of the low-pitched gable roof in the snowy mountainous regions of Oregon and Washington.

The Standard '36 was a revision in 1936 that retained all of the characteristics of an L-4 except, "ceiling joints extended beyond the walls of the lookout house to which perimeter blocking was connected. The shutters were then secured with lag bolts to this perimeter blocking" (Carricker, 1991: 38). The L-4's constructed post 1936 generally followed this model with minor modifications into the 1950's.

The L-5 originated in Region 05, the Intermountain Region, and is a much smaller version of the L-4 models. The L-5 is a 10' x 10' precut wood-frame cab with a hipped roof and was constructed primarily at secondary lookout points during the 1930s (Atwood, 2004: 59). The L-5 was also a designation given to several 14' x 14' gable log cabins in Idaho and Montana which can make this designation confusing (Kresek, 1998: 11; Atwood, 2004: 59). Until this survey, it was believed that there

Meebee Pass c.1935, willhiteweb.com

were no more remaining L-5 lookout cabs in Region 6; however, there are two remaining— Pig Iron on the Umpqua and Meebee Pass on the Okanogan-Wenatchee. This model was generally used as a secondary lookout.

The L-6 is an even smaller version of the L-5 and measured anywhere from 6' x 6' to 8' x 8' on very tall wooden towers—usually 80 to 100 feet. The pre-cut wooden-frame cab had a cedar shake hipped roof with slight eaves and horizontal exterior siding. The fenestrations were three 6-pane windows were covered with large window shutters that hinged from the top to create a shade panel for viewing (Atwood, 2004: 59-60). L-6 towers were placed at secondary

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[21] "The L-4-AR has a 12:12 pitch roof line while the L-4 has an 8:12 pitch roof line" (Carricker, 1991: 37)

patrol locations and were usually only used during emergency incidents (Kresek, 1993: 11; Hill, 2013: 28). Like Aermotor steal towers, these observation-only towers also had separate living quarters. The tower design was originally designed and intended for oil drilling and windmill use and was only constructed between 1932 to 1942—10 years (Atwood, 2004: 59-60). The L-6 cab was accessed through a trapdoor in the floor and sometimes had a catwalk for viewing.

Frazier Point (1936) L-6 tower, Malheur NF. USFS photo from 1956.

The earliest and most common tower design in the Northwest was a Timber tower (TT) which was borrowed from similar designs used for several years by the oil industry (Grosvenor, 1999: 96). TTs, also covered in creosote and called CTs, supported all of the L-series. Timber towers were covered in creosote and approved in Region 06 to be constructed at heights of either 47, 60, 81, or 100 feet. Each height was given a corresponding abbreviation of *CT*, or Creosote Tower—CT-1 was 47' tall, CT-2 was 60', CT-3 was 81', and CT-4 at 100'. TTs, followed the same height designations as the CTs (i.e., the TT-1 is also 47' tall). Steel towers were constructed in Region 06 and were largely designed by the Aermotor Company of Chicago; however, other companies that made steel towers were also placed in the Region. Because these were observation-only cabs, fire watchmen would construct a live-in cabin or storage shed nearby.

The Aladdin Co.[22] manufactured L-4 pre-cut kits as early as 1929 ranging from $500 to $700 to build. The Aladdin company advertised "Readi-cut" and "Built in a Day" home kits ordered through home catalogs, similar to home kits ordered from a Sears catalog.

AERMOTOR TOWERS

By 1914, the Forest Service in several regions had approved 6' x 6' and 7' x 7' wood or metal cabs on steel towers produced by Aermotor, a windmill manufacturing company in Chicago. The Aermotor Company had been manufacturing steel windmill towers and military observation towers since the 1890s and started to market their military towers for fire watching

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[22] There are references to there being a Portland company also called Aladdin that supplied lumber and hardware for lookout kits. It is unclear if they are a subsidiary of the larger Aladdin Homes based out of Bay City, Michigan that was in operation from 1906 to 1981.

early in the 20th century (Thornton,1993: 13; Atwood, 2004: 57). These towers were not meant to be lived in by the fire watchman and were strictly for observation only—there is always a ground house or camp associated with observation-only towers. Metal tower lookouts are more prevalent in southeastern states and somewhat rare in the Pacific Northwest because the accessibility and availability of wood products. However, Aermotor towers were still cheaper[23] to construct than wooden towers and this is possibly why they appear in the Northwest Region. Aermotor set themselves apart by becoming the main supplier of all steel lookout towers throughout the nation in the 1930s (Hill, 2013: 29-30).

West Myrtle Butte Aermotor, c.1930. Malheur National Forest.

Compared to its wooden counterparts, the modular steel design was relatively easy to construct—they could be disassembled and relocated almost anywhere (Thornton, 1993: 79; Hill, 2013: 29-30). Aermotor designed towers at 45-, 60-, 80-, 100-, and 120-foot increments and were anchored onto a concrete slab or concrete footings. Earlier models of Aermotor towers used a ladder on the exterior of the tower frame to gain access to the cab whereas older models adapted to a stepped staircase on the interior of the tower (Hill, 2013: 31-32; Thornton, 1993: 28; Atwood, 2004: 57).

The earliest was a 30-foot windmill tower on Olallie Butte in Mt. Hood National Forest in 1915 with a 6' x 6' cab. Saddle Blanket Mountain on the Willamette National Forest was constructed in 1927 originally with a ladder and later wooden stairs were added (Atwood, 2004: 57). Smaller lookout cabs strictly for observation-only fire detection were an advancement over Crow nests and tree platforms by providing an enclosed space for the watchmen. However, they became cumbersome for the watchmen to spot smokes and conduct essential day-to-day activities like cooking or going to the bathroom. Aermotor towers emphasized the need for the interior of lookout cabs to accommodate living quarters, a kitchen, and storage (Atwood, 2004: 57).

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[23] Atwood, 2004: 80

CHAPTER 4: DEPRESSION ERA (1933-1941)

The timber industry was hit hard by the Great Depression in the Pacific Northwest. There were large railroad mill operations in Portland, Tacoma, and Everett; however, many mills in rural areas nearer to the timberlands could not compete and were forced out of business. Excess production and declining sales of milled lumber as early as 1927 caused several small-town lumber mills throughout the Pacific Northwest to permanently shut down. Although the timber industry was taking a severe hit, New Deal programs provided funds for infrastructure improvements, constructing new buildings, and conservation work which provided additional labor to these struggling communities (Atwood, et al., 2004: 23). The construction of Timberline Lodge on Mt. Hood in 1937 and the creation of Olympic National Park in 1938 made forest recreation more accessible and visible on a national level.

The summer of 1933 was disastrous for Oregon; small forest fires in the most productive area of Oregon's Coastal Mountain Range combined into one large megafire, commonly known as the Tillamook Burn[24]. At its worst, the fire burned along a 70-mile front for 20 hours and consumed 12 billion cubic board feet of mature Douglas Fir timber (Atwood, et al., 2004: 26-27; USDA *Tillamook Burn,* Kemp, 1967: 77). This environmental disaster resulted in the loss of roughly $275 million of merchantable timber. This wildfire incident was a National ecological disaster that highlighted the importance of fire safety and timber management during this era.

By the end of the 1930s, larger mills with extensive land holdings were not able to acquire loans or financial backing that they had been dependent on. With the larger mills closed, smaller operations were able to flourish (Atwood, et al., 2004: 27-28). They were able to purchase small timber sales from the National Forest and began using combustible mechanized equipment and did not need the initial investment capital that railroad logging required. These vehicles were typically personal trucks or tractors that the miller owned or contracted. Slowly, the automobile replaced railroad logging and created a higher demand for improved roads throughout the forest system.

NEW DEAL PROGRAMS AND THE CIVILIAN CONSERVATION CORPS (CCC)

Arguably, one of the most successful social programs of Franklin D. Roosevelt's New Deal, was the Civilian Conservation Corps (CCC) program. It was created and designed to bring economic and social relief to the desperate American public through employment and conservation measures for public land. Conservation work on public lands throughout the US

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[24] The scorched timber was salvaged and much of the area became what is now the Tillamook State Forest.

repaired damages that had compounded on forests, range lands, and farms during the previous decades from lack of maintenance.

The Vancouver Barracks in Vancouver, Washington was selected by the War Department to be the regional center for the CCC administration, training, and supplies for the Pacific Northwest[25]. In 1933, 800 enrollees arrived at the Vancouver Barracks and were outfitted by the Army and dispersed to one of the 26 CCC camps in Region 06 (Atwood, et al., 2004: 24). The Ninth Corps were responsible for receiving the enrollees and screened them for disease, providing temporary shelter and work uniforms, food and supplies, and transportation to their camp. During the CCC's nine years of operation, the Ninth Corps had constructed and staffed 67 camps and received 40,000 men through the induction center (Atwood, et al., 2004: 24). Conservation projects were completed in the vicinity of the camps and the project was left up to the agencies the workmen served, either the USFS or DOI. Projects usually lasted two to three years before workmen were relocated or graduated-out of the enlistment period.

This increase in labor ultimately contributed to the Forest Service's goal of fixed-point detection through the addition of staffed patrol points and the construction of numerous lookouts (LeLande, 1998: 12-13).

Example of fixed-point fire detection Illustrating the method of locating fires by use of alidade reading from two towers from which the smoke is visible, c.1936. foresthistory.org

Fixed-point detection was achieved by two reporting lookouts providing their fire locations to the Ranger Station, which could be triangulated to increase the accuracy of locating fires. The goal to have fixed-point fire detection resulted in the construction and staffing of hundreds of lookouts throughout the nation.

Although the focus of the CCC was conservation projects, the crews also constructed administrative and recreational structures. Region 06 used the CCC workforce to construct over 250 lookout towers and cabs, strung over 9,000 miles of telephone line, and constructed over one million miles of roads and trails between 1933 and 1942 (Hill, 2005: 21; Thorton, 1986: 17-

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[25] The CCC organizational structure decentralized into 9 corps areas. Oregon and Washington encompassed the Ninth CCC Corps.

20, 42). CCC units were assigned categories of work that related to fire suppression and detection that included constructing firebreaks, lookout structures, and other general improvements. The CCC employed many skilled craftsmen including master carpenters, masons, equipment operators, plumbers, and electricians. Although the skilled laborers built permanent structures for the agencies, their own living quarters were temporary and modest, often portable. Camps were easily dismantled and reassembled so that the skilled workforce could be moved to a new area when the project was complete.

Buildings erected by the CCC for the Forest Service were constructed under standardized plans that were provided in the *Improvement Handbook* in 1937 and later, *Acceptable Plans for Forest Service Administrative Buildings* that was published in 1939. These books provided sample architectural plans, material specifications, and site-specific suggestions that promoted the rustic Northwest architectural style and characteristics that are emblematic of Region 06 during the early 20th century (Atwood, et al., 2004: 25-26). All of the building styles constructed during this period were sourced from locally available materials. The building plans were used to produce kits--the materials were gathered in town, cut to precise measurements, and were then ready-to-assemble. The kits were then packed into remote areas by horse or mule and then the structures, including lookouts, were constructed on-site.

The least successful of New Deal programs in this Region was the National Industrial Recovery Act (NIRA) of 1933, which set to regulate production of US industries. The lumber industry specifically was regulated through the Lumber Code which included provisions like Article X, which was a conservation proposal that promoted wildfire suppression, insect depredations, and moving the Forest Service toward a sustained yield cutting program (Atwood, et al., 2004: 26; Robbins, 1996). Unfortunately, NIRA production quotas interrupted existing timber sales and required lumber manufacturers to reduce production and their prices. By the following year, "lumber prices and wage expectations both exceeded the code rates" (Atwood, et al., 2004: 26) and NIRA was disbanded in 1935.

The Pacific Northwest region was largely comprised of modest timber-dependent communities when the Great Depression hit. The New Deal CCC building programs brought employment to the local experienced workforce and provided much needed infrastructure including roads, ditches, fences, communication systems and numerous other improvement projects. The Forest Service relied on the CCC to provide labor for conservation work and firefighting. The number of lookouts vastly increased between 1933 to 1941 due to the Regional need for more infrastructure and the large inexpensive work force that the CCC provided (Carricker, 1991: 13); however, not all lookouts from this period were built by the CCC.

DEPRESSION ERA LOOKOUT STRUCTURES

Construction began to ebb around 1937 and by the 1940s there were hundreds of lookouts staffed during the summer fire season and hundreds more had been constructed and used as emergency lookout points (Carricker, 1991: 13). Toward the end of the Depression as the US was about to enter WWII, many of the newer lookouts that had been constructed were replacements for older and failing lookout structures. By this time, some of the lookouts from the 1920s and 1930s—specifically log cabins, cupolas, and early towers—had been abandoned because they were found to be ineffective at surviving the weather conditions, they were temporary emergency posts with low fire occurrence, or because fire detection could be covered from a newer lookout or better vantage point (Carricker, 1991: 13-14).

In 1938, the Forest Service released *Standard Lookout Structure Plans* that outlined different approved variations of lookout cabs and towers. Standardization leads to streamlining. There were numerous plans available and they varied to accommodate different landscapes throughout the Nation. Ultimately, the decision was left up to the forests to decide which one to construct. Mills and timber harvest made the acquisition of lumber affordable and practical in the Northwest; whereas the eastern and mid-west regions had access to steel mills that made steel towers more practical to construct (Carricker, 1991: 44). At the time, the most pragmatic lookout plan was the L-4.

THE L-4 CONTINUED

Standardized lookout plans were heavily used by the New Deal relief programs to efficiently place lookouts throughout the northwest. By this time, the Region had relied on the L-4 design as their new regional model. The most prominent design to be replicated in this era was the L-4 because it was the most economical and functional standardized live-in lookout plan available. There have always been variations of the L-4 design but the largest visible change for the L-4 to come from this period was the transition from a gabled roof to a more functional hipped roof.

Buckhorn Mountain L-4 hip lookout on the Wallowa-Whitman, USFS photo c.1952.

The L-4 Hip was an adaptation of the Region 1 gable design and is essentially the same composition as the L-4 Gable but with a hipped roof, also keeping with the same low-pitched roof. Earlier examples of the L-4 Hip have nine-pane windows while later incantations are four-

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paned. The first L-4 hip was built at the end of the Intermediate period in 1932 with the last one constructed during the Great Depression in 1936 (Swift, 1993: 1; Throop, 2005: 58). Region 05 then adapted this style and called it the C-3.

Another adaptation of the L-4 from this period is a style called The Standard 36' or the 36' Standard--the Standard '36 L-4 lookout is named for the year of its appearance, 1936. This design extended the ceiling joists two feet beyond the walls to hold the window shutters open. This was a vital addition to the design because it reduced the obstruction from the earlier shutter supports (Swift, 1993: 1; LeLande, 1998: 12-13). This design became the standard L-4 plan moving forward.

CHAPTER 5: WORLD WAR II AND THE POST-WAR PERIOD (1942-1960)

The bombing of the US Naval base at Pearl Harbor by the Japanese shocked many Americans. Fears of another attack by the Japanese on the continental US grew around the nation, but especially along the Pacific coastline. The Japanese military were creative and cunning and residents throughout the northwest began to fear an enemy attack on their ports. By the time the US entered WWII, the CCC program was waning and the National Forests were beaming with brand new infrastructure. The lumber industry was beginning to recover and revenue from timber sales was providing stability. During this time, international aerial warfare across the Pacific Ocean was technologically impossible[26] without launching a plane from the sea. Residents in coastal communities had a heightened awareness of the real possibility of a naval attack or invasion (Russell, 1971: 194). 'Black-out' orders were issued immediately to make the terrain difficult to see as well as suggest that the land was uninhabited.

"I looked for planes till my eyes were ready to drop out..."
-*Winona Harner*

Winona Harner at Baker Lookout, AWS Spotter for the Coast Guard on Olympic National Forest, date unknown.

The Aircraft Warning Service (AWS) took over several wildfire lookouts and erected new patrol points across the northwest to alert authorities and the surrounding communities of enemy aircraft. The Aircraft Warning Service (AWS) was a civilian service that operated under the Civil Defense Agency for the US military during WWII to watch

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[26] Hence the importance over the battle of Midway.

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AWS spotter, Patricia Langdon using a panoramic photograph in 1945 on the Colville NF.

for enemy planes--the Coast Guard employed several AWS watchmen along the Oregon Coast specifically (Hill, 2013: 12-13, Thornton: 20, 302). In turn, Forest Service lookouts were used to spot enemy aircraft as well as serve as fire watches. The AWS recruited volunteers to live in lookouts in order to detect enemy aircraft. They were manned by two people, often husband and wife teams, who alternated shifts to provide 24-hour observation (Williams, 2000:81). The AWS also included civilian men and women who were more than delighted to do their part for the war back home and staffed many lookouts during this period. Lookouts were used and constructed during the Great Depression to protect the nation from more than just threats of wildfire.

During WWII, the Japanese military were experimenting with a new war tactic—starting a wildfire. America was renowned worldwide for its vast timberland and wilderness, a ruggedness distinctly American. Also, widely known, was the devastation of the Tillamook Burn from the previous decade, which destroyed over 350,000 acres of merchantable timber. The logic was if they, the Japanese, could create a wildfire then America would have to pull back resources for the war effort to deal with the blaze. Destroying merchantable timber would specifically hurt the American economy and wartime spirit. The Japanese tried to accomplish this through two means—sending paper incendiary balloon bombs across the ocean on air currents and attacks by the imperial submarine, the I-25.
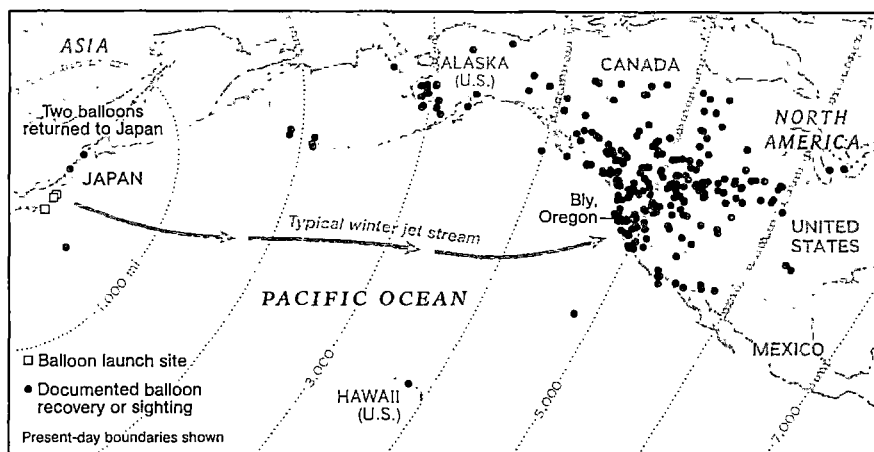
Flight path of balloon bombs over the Pacific. National Geographic map.

THE LOOKOUT AIR RAID (September 9, 1942)

The Japanese Imperial submarine, the I-25, patrolled the Pacific coastline from California to Alaska. The I-25 had taken part in the bombardment of Pearl Harbor the previous winter. In retaliation to the attacks on Pearl Harbor, America bombed Tokyo the following April in what is commonly referred to as the Doolittle Air Raid. Subsequently, on the morning of September 9, 1942, the I-25 emerged

Nobuo Fujita, 1942. Webber, 1975.

20 miles outside of Brookings, Oregon on the coastline, discretely assembled two Glen fighter planes, and catapulted them toward the American wilderness. These two planes carried lightweight incendiary bombs with the intention of starting a wildfire and initiating a natural disaster. Two bombs were successfully deployed that day, one by Nobuo Fujita, but the Japanese were ultimately unsuccessful at initiating a wildfire in the damp forest of the Oregon coastal mountain range.

The fire watchman on Mount Emily initially reported hearing what he thought to be a car engine backfiring. Once the coastal fog cleared, a distinct column of smoke was spotted in the distance and he reported the incident to dispatch. The watchmen at Mount Emily and Snow Camp Lookout at Bear Wallow were dispatched to initiate fire suppression tactics. What the rangers found was a crater surrounded by scorched trees and shrapnel dispersed among the landscape. One fragment found had Japanese writing which led them to believe that they had just been attacked by the Japanese. The wildfire that the Japanese had hoped to spark was not successful due to recent rains, low wind conditions, and fire suppression tactics from nearby fire watchmen.

The Wheeler Ridge Japanese Bombing Site on the Rogue River-Siskiyou National Forest retains the crater where Japanese fighter pilot Nobuo Fujita dropped his incendiary bomb and it is one of two bombardments by enemy forces in the continental United States during WWII. The I-25 was also responsible for the bombardment of Fort Stevens— both attacks in Oregon. A freighter, the SS Fort Camosun, was bombed by the I-25 roughly 70-miles south of Cape Flattery, Washington; however, there were no bombings from the Japanese on Washington soil.

Newspaper propaganda from 1942. Webber, 1975.

Women and children throughout Japan contributed to the war effort by making large sheets of paper and assembling them into air balloons, known as a Fu-go. The lightweight paper balloons were filled with hydrogen and finished with incendiary bombs. The balloons were released over the Pacific Ocean to travel on the jet stream air current and were sighted as far east as Michigan and Kansas. Lookouts and AWS volunteers attempted to intercept the balloons but were often unsuccessful. The only casualties caused by the Fu-go occurred in May 1945 near Bly, Oregon when a pastor's pregnant wife and five Sunday school students were killed when the children came upon the balloon during a picnic outing.

Japanese Fu-go made of mulberry paper reflated at Moffett Field, CA. Foresthistory.org

POST-WAR

After the war, timber harvest increased to meet post-war housing construction demands. Roads throughout the Forest system multiplied to facilitate timber sales and, in turn, increased recreational traffic (Atwood, 1994: 61-63). On any given day, there were more people in the forest who could report wildfires. Aerial patrols increased and radio communication had improved during the war. This new technology, coupled with increased visitor traffic, began to make lookout posts obsolete—the Forest Service no longer relied on a fixed-point detection system. The advancement of communication and aerial technology allowed for the formation of elite wildland firefighters in the form of Hot Shot crews and Smoke Jumpers (Hill, 2013: 12-14; Atwood, 1994: 61-63).

In 1956, The New Building Program allocated $289,000 to Region 06 for, "construction of dwellings necessary to meet urgent needs of our timber management program," which allowed for post-war prosperity (Forest Service, 1956). Design standards[27] were created by the Washington Office and a committee was assembled in the Region to discuss implementation and dispersal of funds. The committee decided that minor changes to these plans would not be allowed. This meant the end of regional adaptations and numerous styles of lookouts constructed. The Regional Architect, A.P. DiBenedetto produced plans that were economical, efficient, and aesthetically cohesive with Pacific Northwest Architectural trends. With the budget in mind, DiBenedetto designed twenty-four residences and five dual office buildings (Atwood, 2005: 50-51).

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[27] *Design Standards for Constructing of Permanent Family Housing for Federal Personnel.*

It wasn't until after WWII that the Forest Service began using plywood for exterior structures. The Forest Service's Forest Products Laboratory created an exterior cladding called Textured 1-11 (T 1-11) plywood that alleviated prior issues with delamination and weathering (Atwood et al., 2005: 53). Exterior cedar plywood was laminated on the Textured 1-11 that was composed of fir. The fir plywood allowed for considerable tensile strength while the cedar exterior added durability and weather-proofing properties from the extractives. This T 1-11 plywood played a key role in DiBenedetto's designs. Another critical component in the composition of lookouts from this period is the utilization of the flat roof pitch--also a component of modernism.

POST WAR LOOKOUTS

Due to budget and labor constraints, there were few lookouts constructed during WWII and the AWS put life back into previously abandoned lookouts. The AWS constructed their own standard spotting cabins that were 16' x 18' with gable roofs (Carricker, 1991: 23). In addition, several garages were converted to living quarters. Many lookouts that were already in-service doubled as a "watch point" for enemy aircraft and staffed ancillary lookout posts. As opposed to being staffed during the summer and high fire danger, some lookouts were staffed year-round[28] which required the lookouts to be winterized and many saw the addition of a wood stove.

CL-100/106

The Washington Office in DC developed two styles of lookouts in 1952—the CL-100 and the CL-106. They were both characterized by a 14' x 14' steel cab with a flat, corrugated steel roof and a catwalk with a chain-link railing (Swift, 1993; 1). The CL series was often placed atop steel towers with a "K" galvanized brace and range from a height of 10' to 83' in height. CL

Mt Ireland CL-100 lookout c.1980. Constructed in 1958, the original D-6 was 'blown-up' to make room at the site. Wallow-Whitman NF, Ray Kresek photo.

cabs were also placed on the ground surface and on concrete block platforms in areas where extra height was not needed to access the viewshed. Most of the CL series were built between 1952 and 1960 in Region 06 but were more popular in the Southwest Region (03) and California (05). It is unclear what the difference is between the two styles, but it could suggest different

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[28] This depended on the ability to provide supplies to the spotter. Lookouts that were too dangerous in the winter did not get staffed year-round.

roof pitches—one hipped and one flat. This model was not very popular in Region 6 and roughly 10 were ever constructed on Forest Service land; however, they have also been classified as metal R-6's which has caused some confusion with their overall total.

R-6 FLAT

The Region-6 (R-6) Flat Top was first introduced in 1953 and was the Forest Service's modern and updated model to replace previous styles. The materials needed to construct the R-6 are too large to be packed in and required the use of a helicopter (Atwood, 1994: 61-63). The R-6 was designed to lower costs and reduce hazards from re-shingling the L-4 hipped roof by replacing it with a modern and sleek flat tarred roof with widely overhanging eaves. The exterior is cladded in laminated exterior cedar plywood on textured 1-11 fir and the cab is surrounded by a catwalk.

The R-6 is 15' x 15' with single-light windows, rather than multi-pane, and lack window coverings or shutters. Earlier cabins have, "seven windows per wall with four lights each and an open soffit. Later models had one light above and one larger light below and closed soffits" (Atwood, et al., 2004: 91-92). In all cases, the interior was furnished with an Osborne Fire Finder.

TIMBER MOUNTAIN
R-6, 1959

Timber Mountain, NHLR photo

"I like FS biscuits;
Think they're mighty fine.
One rolled off the table
And killed a pal of mine.

I like FS coffee;
Think it's mighty fine.
Good for cuts and bruises
Just like iodine.

I like FS corned beef;
It really is okay.
I fed it to the squirrels;
Funerals are today."

-Poem from watchman on
Timber mountain, 1948
(Grosvenor, 1999: 100)

CHAPTER 6: MODERN TO COMTEMPORARY PERIOD (1961-present)

FIBER OPTIC LINES

"A summer electrical storm sweeps across the skies over the Wenatchee National Forest. As night falls so do thousands of spikes of lightening, many of which touch ground around the forest. As these bolts of lightening hit the Earth, warnings are simultaneously transmitted across fiber optic lines to the Regional Office in Portland. From this station, detailed information is transferred to the District Ranger concerning where the lightening has touched down. Later, the next day, a plane skims across tree tops to the precise location of the lightening strikes, observes for fires, and takes appropriate action".

-Unknown source, Carricker, 1991: 14-15

Advances in aviation technology and communication post WWII made staffing lookouts less effective and, in most cases, obsolete. Like the carrier pigeon, aerial fire detection methods proved to be more cost effective and efficient overall in covering large swaths of mountainous terrain. Advancements in technology coupled with the increase of citizens in the forest led to the decommissioning of lookout structures throughout the region. More recently, infrared technology, fiber optics lines, and satellite imagery are used to assist in detecting wildfires.

The 1960's was a riotous decade that introduced several environmental conservation laws and policies that directly affected historic preservation. In 1964, the Wilderness Act established the legal definition for wilderness and created regulations for long-term preservation of wilderness areas for federal land management agencies. The Act also established restrictions that limited the use of mechanized equipment and access within wilderness boundaries. Although this has presented challenges for the preservation of many historic structures, this has also allowed for the use of historically accurate equipment and processes to be employed that ultimately preserved the character of the wilderness. Wilderness is defined as unhindered, primitive, or free from modern human manipulation[29]. For Heritage, this means cultural landscapes and sites are often untouched from development or demolition and retain integrity. Managing a wilderness area is different in that no motorized vehicles or temporary road construction is permissible unless human lives are at risk. The primary means to suppress wildfire in these areas is by utilizing retardant drops.

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[29] NWCG, 2017.

The National Historic Preservation Act (NHPA) of 1966 outlines the roles and levels of involvement required from a Federal nexus regarding the management of historic resources. The State Historic Preservation Office (SHPO) and the Advisory Council on Historic Preservation (ACHP) were established under the NHPA to create a checks-and-balances along with imposing nationwide standards under which all cultural resources are assessed equally. Under Section 110 of the NHPA, federal agencies are required to identify historic resources and evaluate their significance for listing on the National Register of Historic Places (NRHP). Historic resources must have integrity to be eligible for listing under four criteria:

A) Association with significant national events or patterns,

B) Association with significant people,

C) Embody distinctive characteristics that represent the work of a master craftsman or type of construction,

D) Likelihood to yield important information.

An historic resource is generally not considered eligible for inclusion if it is less than 50 years of age; however, exceptions are given if they are significant.

Several of the older lookouts, ones reaching 50 years of age, were in disrepair when the NHPA was enacted and the Forest Service began to see them as a liability (Hill, 2013: 15-16). Because they were no longer cost-effective to manage, lookouts were removed from Forest Service lands before they could reach the age of 50. They were also evaluated as being ineligible for inclusion in the National Register because they were not considered historic (50 years or older). Lookouts were removed through several means including the private sale of lookout cabs and towers, dynamite, or controlled fires. Lookouts are still sold through salvage-based contracts to remove them from the land but lookout structures themselves do not meet many city's building and health codes. This makes their integration off forest lands challenging and caters solely to a specific type of landowner[30].

In 1976, Congress passed the National Forest Management Act (NFMA) that required Forests to draft a resource management plan for their unit. The management act requires Forests to evaluate their resources based on multiple-use and sustained-yield principals. This Act enabled lookouts to be converted to recreation rentals and open for other special uses. Because lookout structures are on mountain peaks and open ridgelines, a popular special use is as a telecommunication or relay station. Radio, telephone, and satellite equipment is often stored in or on the lookout and secondary structures. Although the structures themselves are

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[30] In order to purchase a lookout from the forest service, the purchaser must provide approved legal plans for the deconstruction, transfer, and/or reconstruction of the lookout on their land.

being used, access to the lookout is often restricted by the permittee—often by boarding-up the structure and installing a gate. The trails that lead to lookouts are still open to the public. It is the responsibility of the permittee to protect their equipment and vandalism to any of the communication equipment is considered a breach of National security. This greatly limits the ability for locals and tourists to enjoy these structures.

During the 1990s the Forest Service created the *Meaningful Measures* program for developed recreation sites. The Meaningful Measures program assessed developed recreation sites for annual operations and management costs associated with the resource and focused on managing recreation sites to quality standards (RS-FMP, 2007: 8). Historic lookout structures that are potential recreation assets have high deferred maintenance costs and this is weighed against the expectation of funds generated by a recreation fee authority.

Urban sprawl has brought residential areas closer to timberlands. Wildland-Urban Interfaces (WUIs) are residential tracts that abut potentially heavy or dangerous fuel loads which
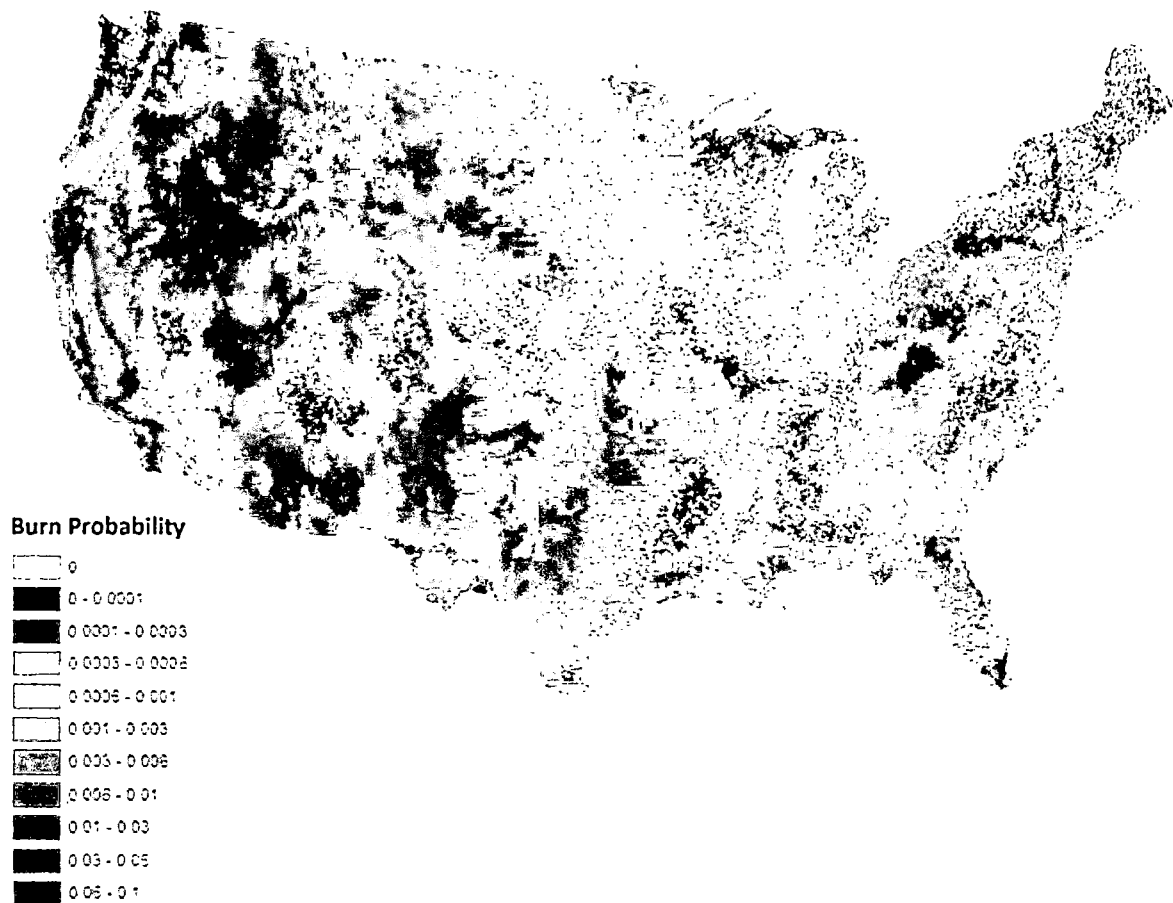
Burned Area Probability map throughout the United States. Note the higher probability for eastern Oregon and Washington. Image taken from USDA Forest Service Gen. Tech. Rep. RMRS-GTR-42-vol. 3. 2012.

could ignite and cause damage to life and property. It is prudent for the Forest Service to staff lookouts for immediate fire detection in these areas—where lives, private, or sensitive property are at risk (Carricker, 1991: 14). In 2018, there were over 52 thousand wildfires throughout the US with a total of over 8.5 million acres burned (NWCG, 2003). Over the last decade, an average of 60-thousand wildfires occurred each year and roughly 6.6 million acres burned— these numbers are extremely high and they are likely to get worse. Most recently, wildfires in California have claimed the lives and property of thousands of people and have destroyed several historic and cultural landmarks.

Today's increase of wildfires throughout the Nation is a complex issue. Wildfires are exacerbated by several causes that lead to megafires and mass destruction of land, life, and property throughout the region. Clear cutting of old growth timber has allowed the understory to flourish and replanted timber is subsequently smaller—creating light flashy fuels that are more susceptible to burn hot and fast. Disease and insects have also contributed to the death of large swaths of timber—this only adds tinder to the fire. Based on this knowledge, more lookouts are actively staffed east of the Cascade mountain range where the climate is a high plains desert with light flashy fuel loads. These issues coupled with climate change has brought hotter, drier, and longer fire seasons[31] to the Nation and Northwest Region. Fire lookouts themselves are also susceptible to wildfire and this past 2020 fire season saw the destruction of several heritage resources including Olallie Mountain lookout on the Willamette National Forest that was the last lookout standing in the Three Sisters Wilderness.
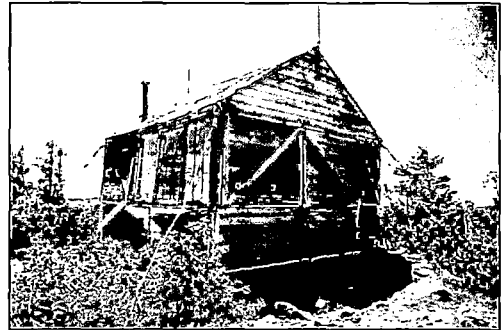
Olallie Mountain, Cheryl Hill

"Olallie Mountain Lookout after it burned down. Photo by Steve Johnson", The Statesman Journal, 2020.

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[31] For statistics on the number of fires and acres burned by wildfires throughout Nation from 1926 to 2019, see the National Interagency Fire Center's table for Total Wildland Fires and Acres at https://www.nifc.gov/fireInfo/fireInfo_stats_totalFires.html

MODERN & CONTEMPORARY LOOKOUT STYLES

The new styles from this period continued with lookout kits but the assembly on mountain tops changed from rangers packing in materials to using trucks, helicopters, and heavy machinery. Quality roads also made it so that the lookout kit did not need to be packed in by rangers. In some cases, the lookout was pre-assembled and brought to the patrol point. Others were constructed on-site once the materials were brought in by helicopter and assembled using cranes and heavy machinery. This practice began at the post-war period but became the main method of assembly and transporting materials into the Modern and Contemporary period.

Although technology has advanced, there is still a need to have a lookout structure and watchman at certain patrol points. The impetus for multi-use is evident in the few styles from this period. When a new lookout needed to be constructed, one obvious solution was to create replicas based on the original plans of older styles at the site that improved the massing. The replicas are adapted to suit the site for fire detection but also double as a winter recreation rental or interpretive museum. One example of an adaptation is Warner Mountain Lookout on the Willamette NF where the superstructure was recycled from Grass Mountain and a cupola cabin was placed on top. The floor plan for the cupola cabin is 14' x 14' opposed to the 12' x 12' standard D-6 floor plan and can accommodate guests in the winter.

It is unclear where the design for Octagons came from; however, the design itself is optimal to gain a 360-degree view of the land. This is an obvious progression from the boxy form of previous compositions to aid in fire detection. According to the National Historic Lookout Register, the Octagon may be the

Antelope R-6 lookout preassembled and being transported to the site in 1974 (above). A crane is used to place the R-6 on the tower structure (below). USFS photos.
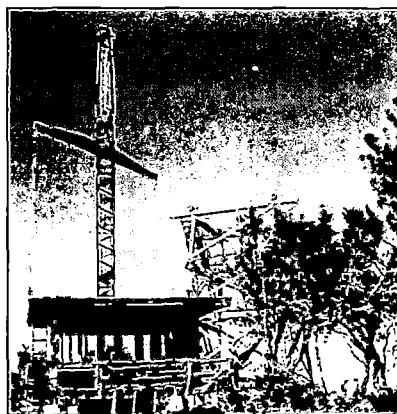
Warner Mountain Cupola Cabin Replica on the Willamette NF, Sue Bula photo, 2000.
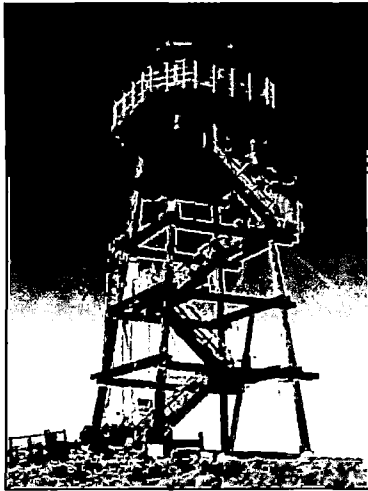
Calamity Butte Octagon
constructed in 2000, Rex
Kamastra photo

prototype for the future of fire lookouts[32]. Octagons are 16' x 16' cab surrounded by a catwalk and placed on a pole tower of varying height. Octagons are large enough to be live-in and converted to recreation rental in the winter. Octagons move away from the sleek but unpractical design influence of post-WWII modernism and back to a rugged Cascadian aesthetic associated with the Pacific Northwest.

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[32] NHLR description of Spring Butte Lookout Tower on the Deschutes.

PART II: ANALYSIS

The periods of significance have been assigned based on architectural trends identified, documented, and outlined in *Utility in Service* in 2005. *Utility in Service* provides a context to all agency administrative and recreation facilities in Region 06 up to 1960. Atwood's architectural history ended in 1960—roughly 50 years from the date if its authorship. Lookouts succumb to the elements daily and it is likely that some of the lookouts counted in this inventory are no longer standing. This inventory should be updated as lookouts are constructed and decommissioned. Each lookout style has been assigned a color, in no particular order, so they can easily be identified on maps and charts. Some locations have multiple lookouts standing and they are represented by concentric circles.

Styles	Build Date (Earliest)	Color	Build Date (Latest)	WA	OR	ID	Regional Total
Cabin	1914		1920	2	1		3
Tree Platform	1914		1937	1	3		4
Crows Nest	1914		1933	1	8		9
D-6	1922		1928	2	5		7
Aermotor	1926		1935	1	9		10
L-4-AR	1924		1927		2		2
L-5	1933		1950	1	1		2
Cathedral	1920		1928	1	1		2
L-4	1929		1989	29	39		68
Platform Tower	1919		1934	2	2		4
R-6	1952		2004	11	31	2	44
L-6	1936		1948		3		3
CL-100/106	1955		1958	1	7		8
Octogon	1977		2000		3		3
Replicas	1986		1998		3		3
House	1997		1997		1		1
			Totals	52	119	2	173

*These totals will always fluctuate as lookouts are discovered, documented, and/or destroyed.

CHAPTER 7: SPATIAL DISTRIBUTION OF REMAINING STYLES

There are two types of lookouts—Observation-only and Live-in lookouts. Live-in lookouts are a type of lookout where the watchman resides in the structure. These are usually utilitarian in form and function - typically with a modest kitchen and sleeping space, equipped with a fire-finder. This way the watchman can complete daily chores while keeping an eye on the timber.

Observation-only lookouts are generally elevated in a tower or spar tree and have much smaller cabs where only a fire-finder is present; the watchman lives elsewhere. Ground houses and large complexes with outhouses, garages, and secondary structures are associated with observation-only sites.

There are 173 lookouts remaining in Region 06 that are expressed through 16 styles. When considering the current distribution of the lookouts across the national forests in Region 06, the majority of lookouts are located in Oregon (119) with fewer in Washington (52) and Idaho (2). There are very few lookouts west of the Cascades (n<10) in both Oregon and Washington. Oregon has at least one representation of each style. Of the remaining land managed, the majority of lookouts reside in the Cascade Range. There are only two lookouts in Idaho and two that hug the border of British Columbia--Region 06 does not manage any lookouts in California. The L-4 style has the largest representation with 69 remaining, followed by the R-6 style, with 43 remaining, and there are 10 or less of the remaining styles. Trends in distribution show that there is at least one lookout on each forest unit. Live-in lookout cabs without a tower superstructure are located in highest elevations; while, lookouts on tower superstructures are found more in lower elevations.

■ CABINS (3)

According to *Log Cabin Lookout Quarters Inventories for Oregon and Washington*[33], there were a total of 66 log-cabin living quarters constructed throughout Region and they are currently managed by Oregon and Washington National Forests, the State of Oregon, Douglas County Fire Protection Association, the State of Washington, and the Colville Indian Reservation. Of the 66 constructed, 56

Walker Mountain cabin in the Deschutes National Forest.

cabins (84.8%) were on National Forest land and now there are only three cabins remaining—one in Oregon and two in Washington.

The cabin lookouts that remain range from hand-hewn slant-walled to stone and wood. The Walker Mountain on the Deschutes was one of four original lookout stations on the forest and is the oldest administrative structure on the forest. The Walker Mountain lookout is the only lookout to be constructed using stone in the composition. Of the cabins that remain, they are all

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[33] Swift:1993e. The inventory included cupola cabins and cabins with roof platforms. The 1993e inventory for log cabins also noted that several cabins had a front porch. Mark Swift also compiled a separate inventory for Cupola Cabins (1993c).

from the Intermediate period (1912-1932) and are located on the Deschutes, Okanogan-Wenatchee, and Colville National Forests. All cabins are Live-in lookouts.

Remaining Cabin Lookouts on National Forest Lands in Region 06
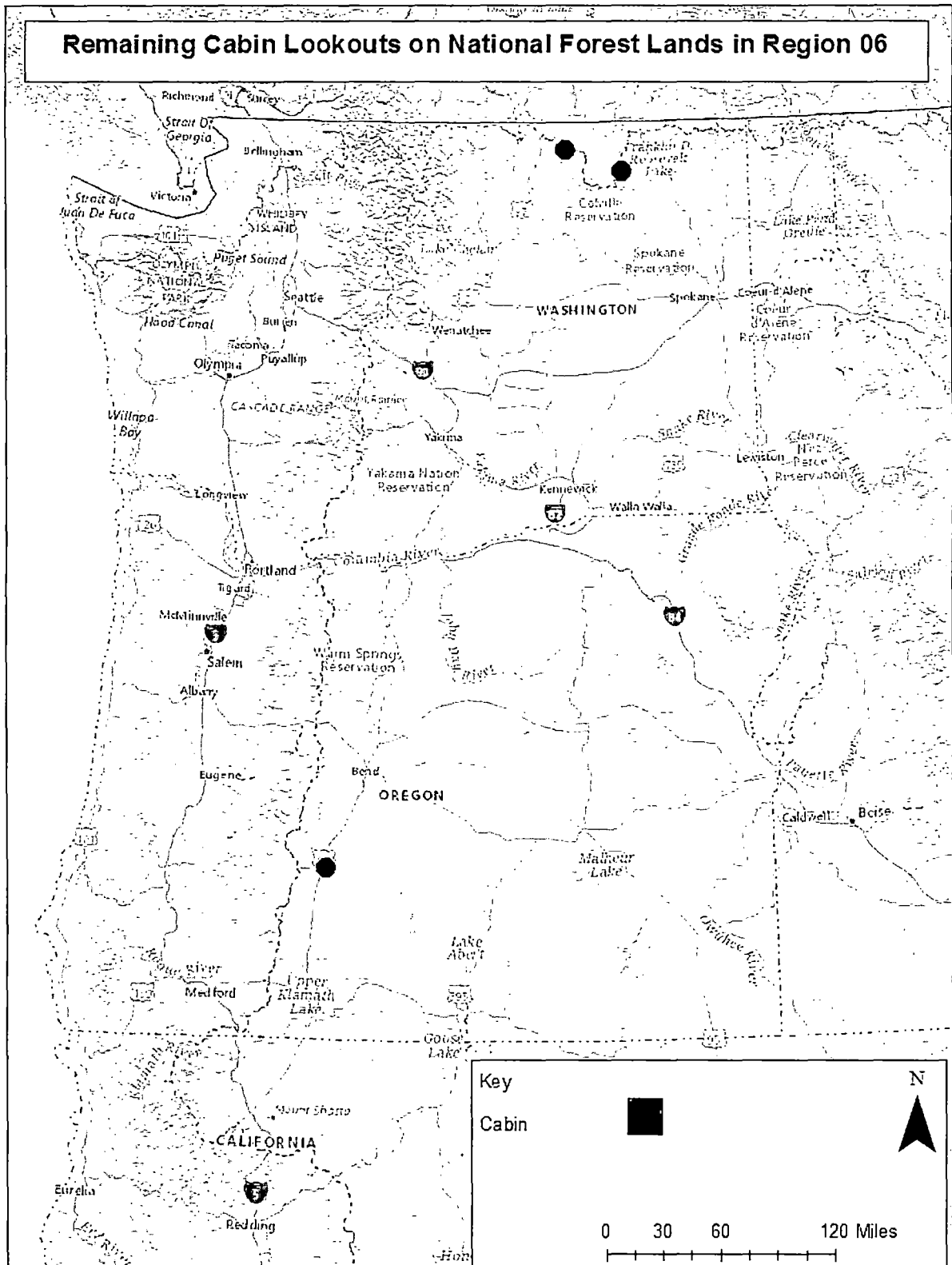
■ TREE PLATFORMS (4)

According to *Tree Platform Style Lookout Inventory for Oregon and Washington*[34], a total of 169 Tree Platforms, Crow Nests, Spar Tree, and Platform Tower lookouts collectively were constructed in Region 06. This inventory grouped all four of these styles into one so the exact number of only Tree Platforms is unknown. Of the 169 structures constructed, there were a total of 107 constructed in Oregon and 68 on National Forest land (63.6%). The remaining lookouts are dispersed on Bureau of Land Management (BLM), the State of Oregon, Clatsop County Fire Protection Association, the Columbia County Fire Protection Association, the Douglas County Fire Protection Association, Eastern Lane Fire Protection Association, Klamath County Fire Protection Association, Lincoln County Fire Protection Association, Northwest Oregon Fire Protection Association, Southwest Oregon Fire Protection Association, Tillamook County Fire Protection Association, Western Lane Fire Protection Association, and private property.
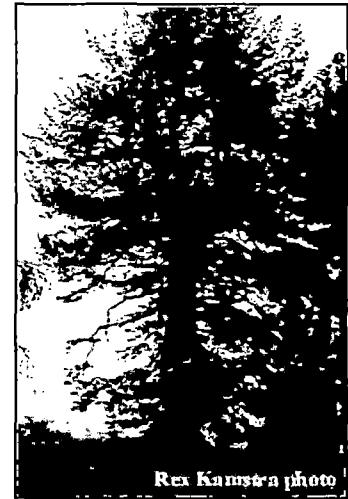
Mt Pisgah Lookout tree on the Ochoco NF, Rex Kamstra photo

There were only 62 constructed in Washington and only 16 were on National Forest land (25.8%). The remaining are managed by the State of Washington, the Colville Indian Reservation, the Quinault Indian Reservation, Spokane Indian Reservation, Yakima Indian Reservation, US Fish and Wildlife, and the US Army.

Only four tree platforms remain on Forest lands throughout the region in various states of disrepair—three in Oregon and one in Washington. The three in Oregon are clustered around center of the state—one outside of the Warm Springs Reservation. The solo Tree Platform in Washington is located in the north-central portion of the state. The platforms range from 10-feet from the ground to 70-feet. Of the Tree Platforms remaining, two are from the Intermediate period (1912-1932), one from the Depression era (1933-1941), and one is unknown. Two are on the Ochoco, one on Mt. Hood, and one is on the Okanogan-Wenatchee National Forests. All Tree Platforms are Observation-only lookouts.

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[34] Swift:1992d. This inventory included four sperate styles of lookout and classified them as a Tree Platform. These included Crow Nests, Spar Trees, Tree Platforms, and Platform Towers.

Remaining Tree Platform Lookouts on National Forest Lands in Region 06

WASHINGTON

OREGON

CALIFORNIA

Key

Tree Platform

N

0   30   60   120 Miles
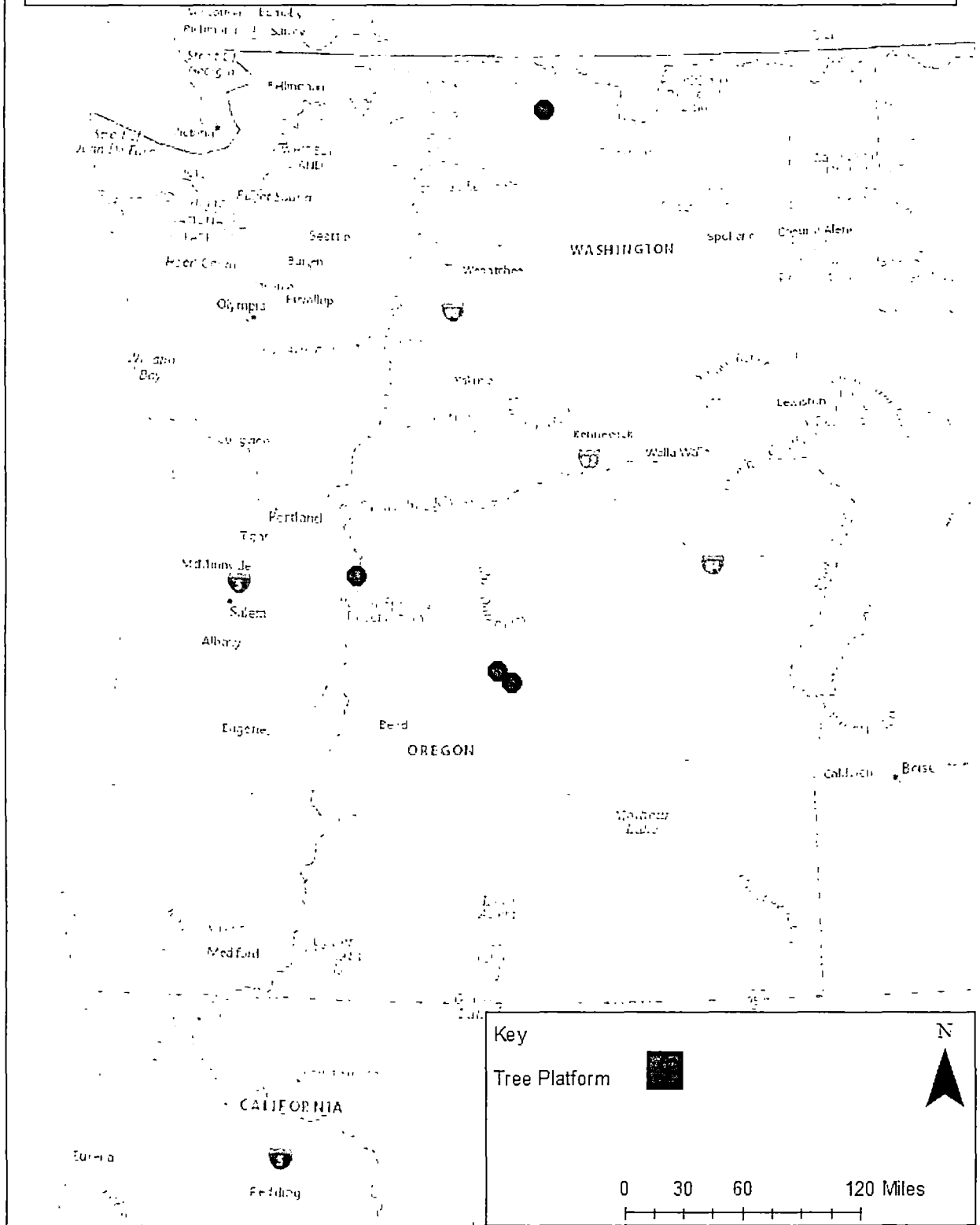
Remaining Crow Nest Lookouts on National Forest Lands in Region 06

Key

Crow Nest □

N

0   30   60   120 Miles
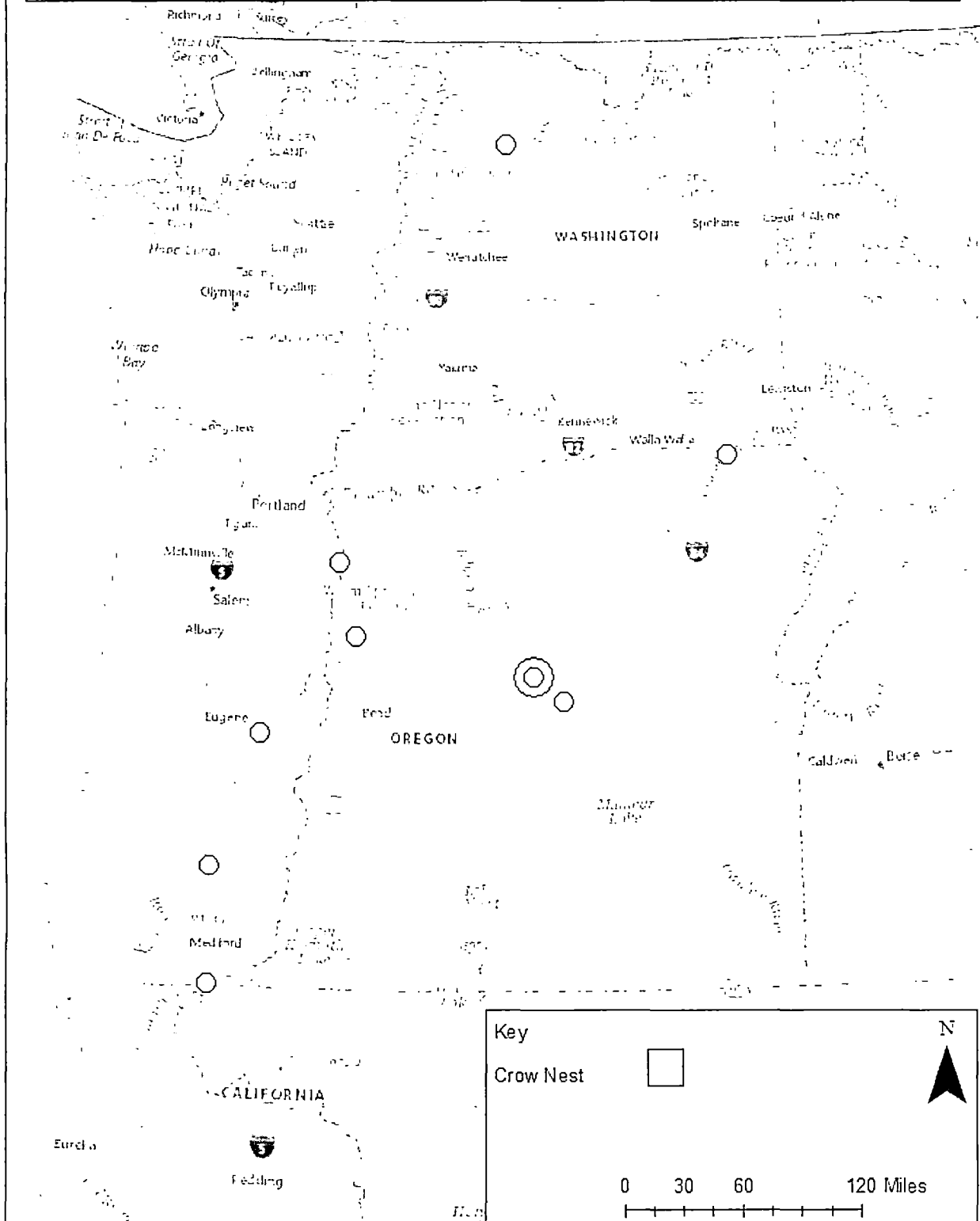
☐ CROW NEST (9)

The exact number of Crow Nest lookouts constructed is unknown because they are often classified as Tree Platforms (see above section). There are nine Crow Nests still standing in the region—eight in Oregon and one in Washington. Like the Tree Platform, they are in various states of disrepair. Their remains are located around the Cascade Mountain range and extend eastward in Oregon toward the Blue Mountain range. Two are located on Wolf Mountain—one on the east slope and one on the west. The remains of the nests are in trees that range from 30-feet to 110-feet. Eight are from the Intermediate Period (1912-1932) and one from the Depression era (1933-1941).

Remains of Yellow Jacket Crow Nest on the Rogue River-Siskiyou NF. Ron Kemnow photo 2007.

There is one Crow Nest on the Deschutes, Malheur, Umatilla, Umpqua, Rogue River-Siskiyou, Willamette, Okanogan-Wenatchee and two on the Ochoco National Forest. Like Tree Platforms, Crow Nests are Observation-only lookouts.

■ D-6 (7)

There were 267 cupola style lookouts constructed, 150 are in Oregon and Washington (Swift, 1993c). In Oregon, there were a total of 85 constructed, of which, 65 were on National Forests (76.5%). The additional 20 cupola lookouts are managed by Fire Protection Agencies or the State of Oregon. In Washington, a total of 65 cupola lookouts were constructed, of which, 52 were constructed on National Forests (80%). The additional 13 were constructed by the Spokane Indian Reservation, Washington Dept. of Forestry, and Mt. Rainier National Park.

Illahee Rock lookout, photo by Ron Kershner. Date unknown.

There are only seven D-6 lookouts remaining on Forest's land—five in Oregon and two in Washington. Dutchman Peak on the Rogue River-Siskiyou National Forest is the only one left in the region that is still used for fire detection. Illahee Rock on the Umpqua National Forest is an informal museum of lookout artifacts from the previous cupola lookout on the site. The cupola has been shorted and the windows removed. All six lookouts are from the Intermediate period (1912-1932). There are two lookouts on the Rogue River-Siskiyou and the Umpqua National Forest and there is one on the Deschutes and Okanogan-Wenatchee National Forests. Mt. Adams lookout on the Gifford Pinchot National was

Remaining D-6 Lookouts on National Forest Lands in Region 06

Key
D-6

N

0   30   60   120 Miles
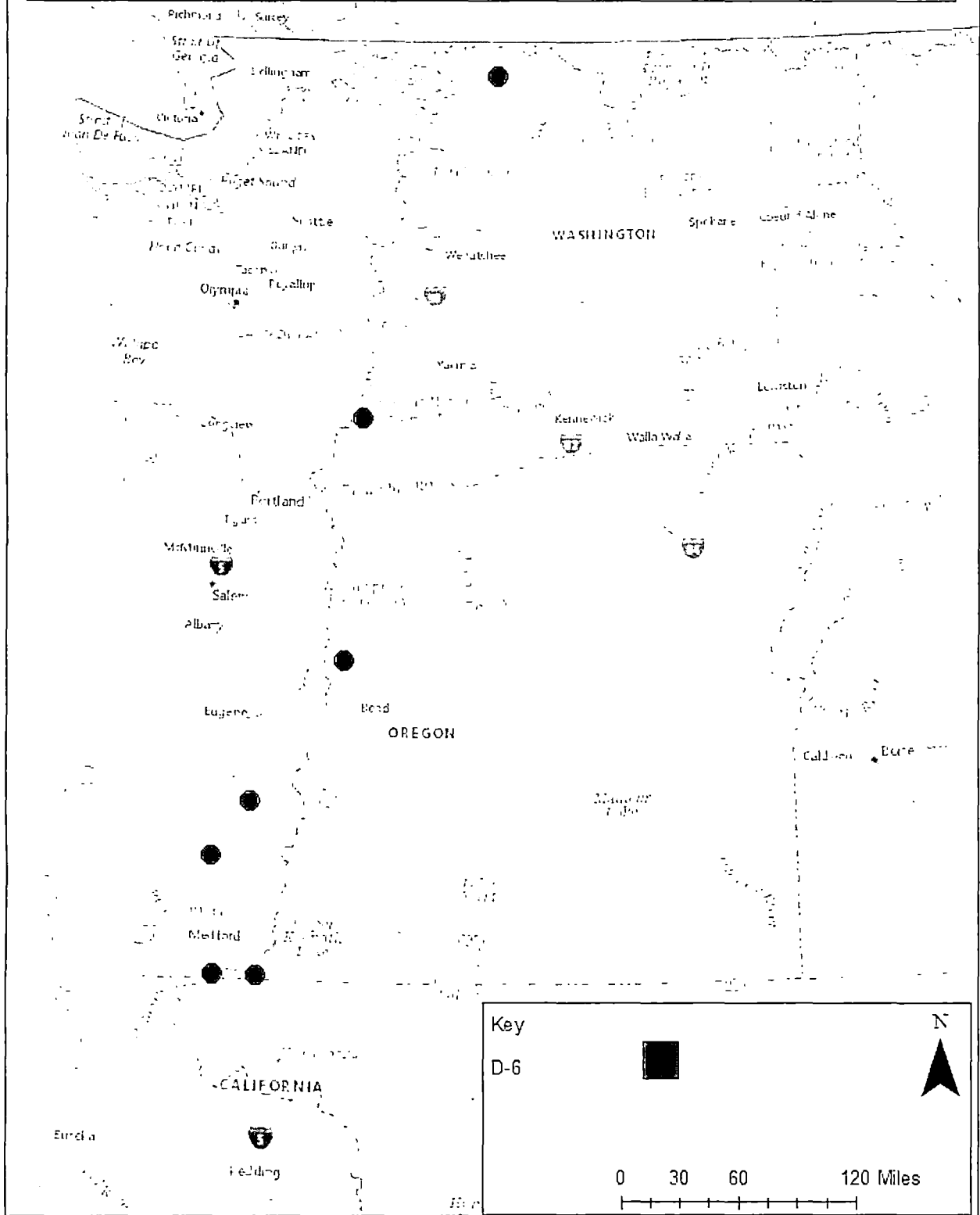
originally a D-6 constructed in 1918 and the lookout was staffed from 1922-1924 before it was abandoned. In the 1930's, local Sulfur miners commandeered the lookout and recycled the cupola to create the additions that are present today. This lookout is counted as a D-6, even though it has been modified and does not contribute to the overall significance of the typology, because it was constructed specifically to be used for fire detection and it is still standing. D-6's are Live-in lookouts. Cupola lookouts—Cathedrals, D-6, Cupola cabins, etc.—are associated with the development of the Agencies initial attempts at standardizing fire detection structures as well as streamlining fire suppression tactics (Throop, 1995: 6; Atwood, 2004: 57). The cupola has become symbolic and closely associated with wildfire suppression and the lone watchman. These are a signature image of the National Forest system—equivalent to that of Smokey Bear.

![] AERMOTOR (10)

A total of 88 Aermotor lookouts were constructed in Oregon and Washington—42 of which were on Forest Service land (47.7%; Swift, 1992a). The majority of Aermotor lookouts were constructed in Oregon (n=62). Of the Aermotors constructed in Oregon, 38 were on National Forest land (61.3%). The remaining Aermotors constructed are in the State of Oregon, several Fire Protection Agencies, Warm Springs Indian Reservation, the US Coast Guard, and the Malheur National Wildlife Refuge land. A total of 26 Aermotors were constructed in Washington and only four were on National Forest land (15.4%). The remaining Aermotor lookouts are on the State of Washington, University of Washington, Colville Indian Reservation, Quinault Indian Reservation, Spokane Indian Reservation, US Coast Guard, and US Army land.

Tamarack Mountain Aermotor on Umatilla NF, Rex Kamastra photo

There are only ten Aermotor lookouts remaining in the region—nine in Oregon and one in Washington. Three are inactive and they are planning to be decommissioned. There are two on the Deschutes and Malheur National Forest, three on the Umatilla, and one on the Wallowa-Whitman, Willamette, and Umatilla National Forest. Four are from the Intermediate period (1912-1932) and the remainder are from the Depression era (1933-1941). Aermotor towers are Observation-only lookouts and are accompanied by a live-in ground cabin. The Aermotors that remain are predominately located around central Oregon and extend into west-central Oregon and southeastern Washington.

Remaining Aermotor Lookouts on National Forest Lands in Region 06

Key

Aermotor

N

0   30   60   120 Miles

Remaining L-4-AR Lookouts on National Forest Lands in Region 06

Key

L-4-AR

N

0   30   60   120 Miles
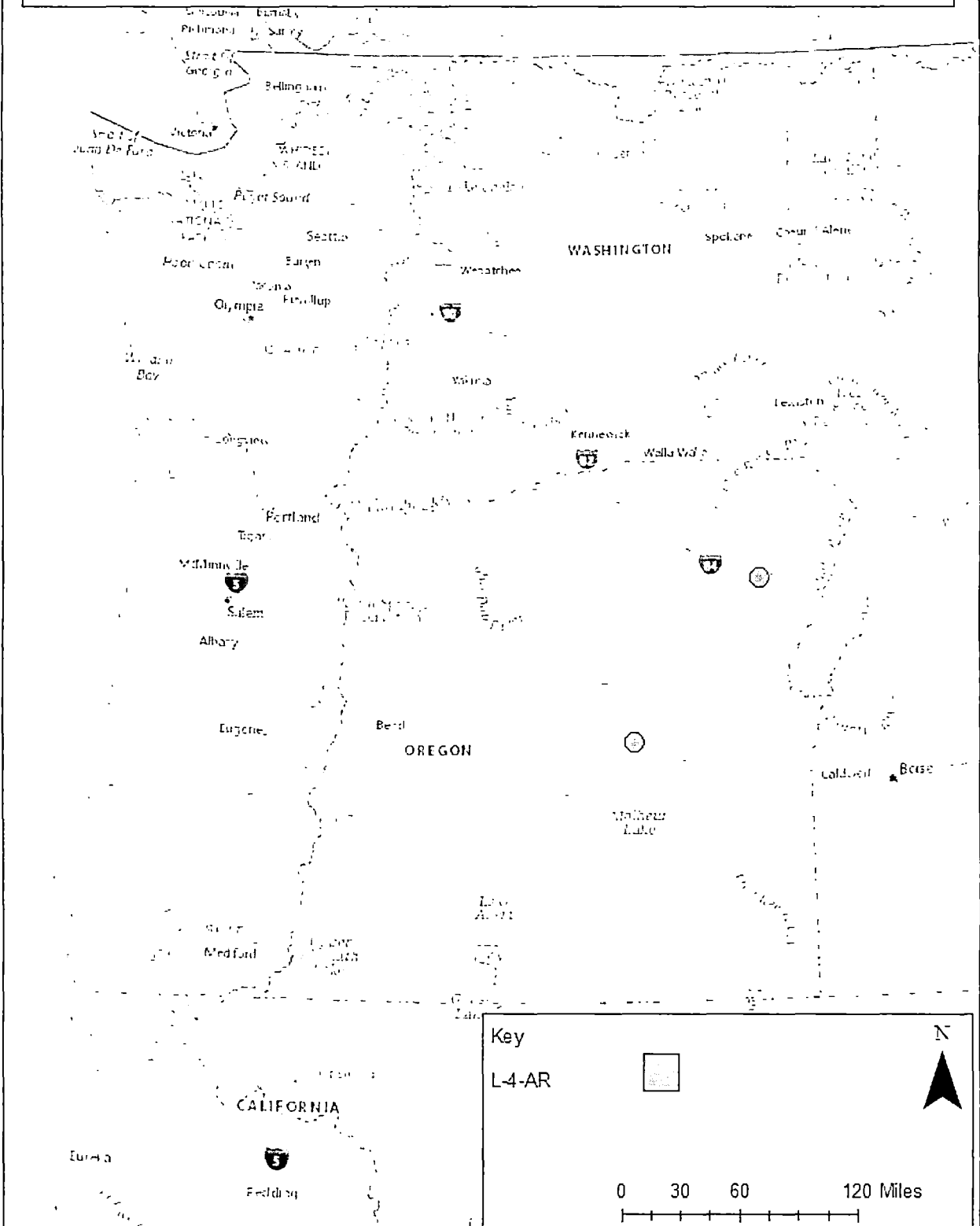
■ L-4-AR (2)

There were 53 total L-4-ARs constructed throughout Oregon, Washington, California, Arizona, and New Mexico (Swift, 1993a: 1-9) --only 17 were ever constructed in Region 06. There were 13 total L-4-ARs constructed in Oregon, all of which are on National Forests. Four L-4-ARs were constructed in Washington--three are on National Forest land. The only other L-4-AR built in Region 06 that is not managed by the National Forest was on the Yakima Indian Reservation and is in ruins. The majority of L-4-ARs were constructed in California (n=33). Only two were constructed in Arizona and one in New Mexico.

Mule Peak L-4-AR "Hall Special"
c.1988, Rod Jones photo

Currently, there are two L-4-AR Hall Specials standing in Region 06—both in Oregon. The Calamity lookout on the Malheur has been in continual use for over 65 years. Mule Peak lookout on the Wallowa-Whitman is located in the Eagle Cap Wilderness and is inactive. Both are from the Intermediate period (1912-1932). The L-4-AR is a Live-in lookout.

■ L-5 (2)

It is unknown how many L-5 lookouts were constructed in Region 06. The L-5 was designed by Region 05, the Intermountain Region. There are two L-5 lookouts—one in Oregon and one in Washington. Not much is known about Meebee Pass on the Okanogan-Wenatchee NF other than it was constructed in 1933 and is stewarded by Friends of Meebee Pass. Pig Iron on the Umpqua was prefabricated by the Weyerhaeuser Sales Company in 1950 and is used for fire detection only during emergencies. L-5s are Live-in lookouts.
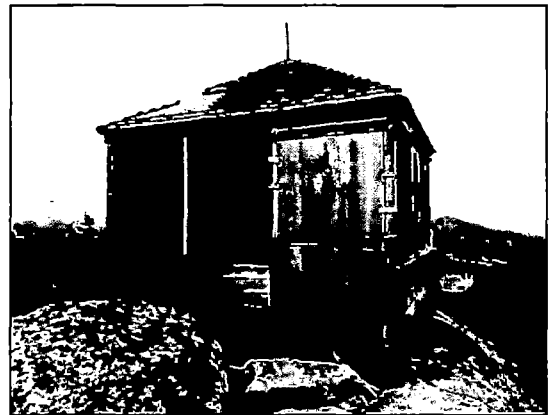
Meebee Pass lookout, willhiteweb.com

Remaining L-5 Lookouts on National Forest Lands in Region 06

Key

L-5

N

0   30   60   120 Miles
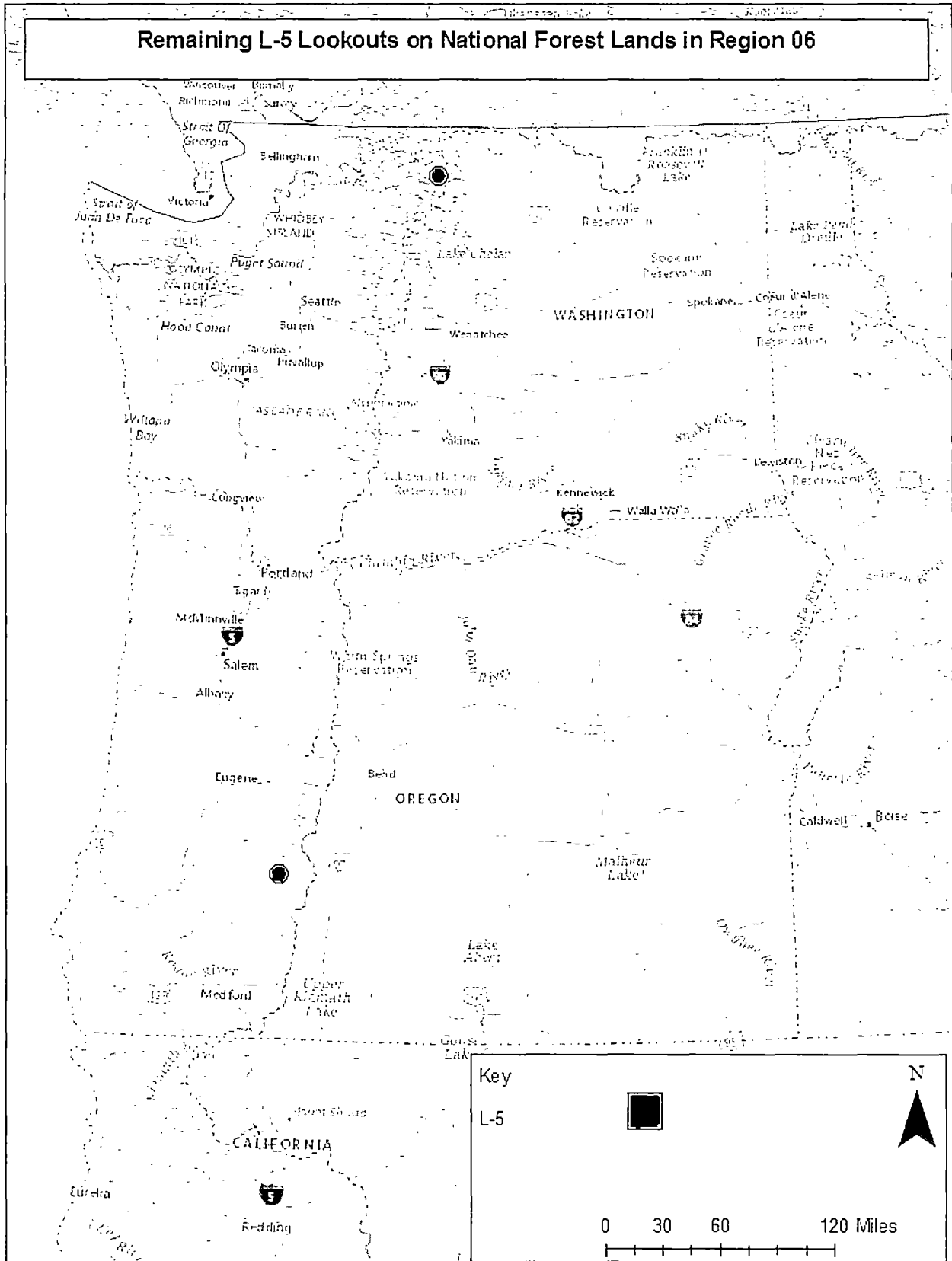
Remaining Cathedral Lookouts on National Forest Lands in Region 06

Key

Cathedral ■

N

| 0 | 30 | 60 | 120 Miles |
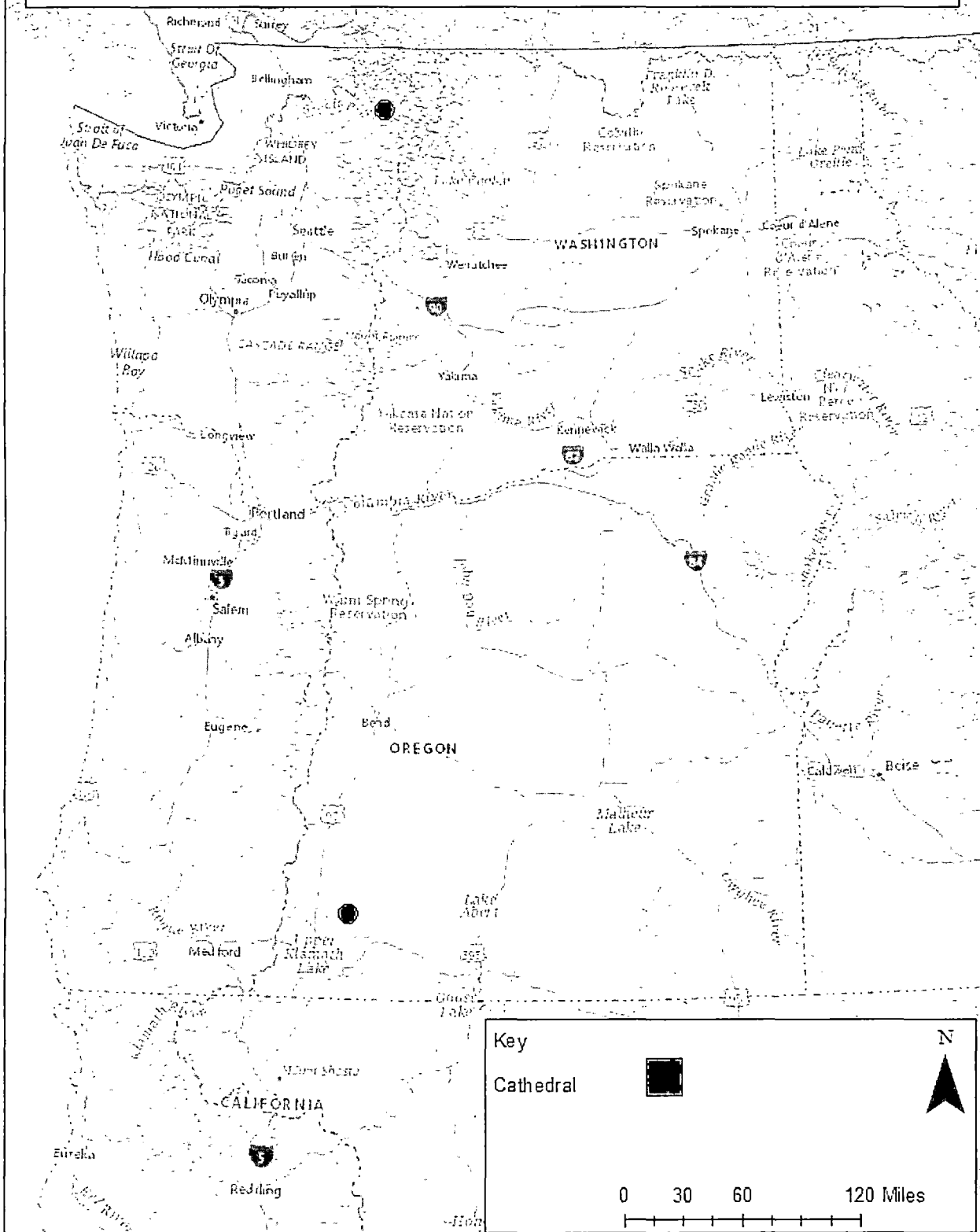
▉ CATHEDRAL (2)

There were only seven Cathedral lookouts constructed on
Oregon and Washington Forests—four in Oregon and three
in Washington (Swift, 1992b: 1-4). There are two cathedrals
remaining in the region—Lookout Mountain on Mt. Baker-
Snoqualmie in Washington and Calimus Butte on the
Fremont-Winema in Oregon. Lookout Mountain was the first
lookout on Mt. Baker-Snoqualmie in 1928 and it is currently
inactive. Calimus Butte has been actively staffed since 1931
beginning with the Klamath tribe. The Klamath Indian

Calimus Butte Cathedral, Howard
Verschoor photo

Agency operated the lookout until about two years prior to the Termination Act of 1961. The
lookouts on the reservation were operated by the Klamath District of the Oregon Department of
Forestry. A large portion of forest was retained by the tribes, this known as the Indian Forest.
Calimus was located on this forest and was until the mid-70's was an Oregon Dept. of Forestry
lookout. When the forest was sold to the Government in the mid-70's it became part of the
Winema NF. Cathedrals are Live-in lookouts.

▉ L-4 (69)

Hundreds of L-4 lookouts were constructed
throughout Region 06 and the exact number is
unknown. The L-4A, L-4-AR, L-4 Gable, L-4 Hip,
and standard '36 are generally categorized as L-
4s and are counted in inventories as such. For
this inventory the L-4 Gable, L-4 Hip, and
Standard '36 are counted and categorized
together as the L-4. The L-4 Gable was the first
to appear and they are the earliest
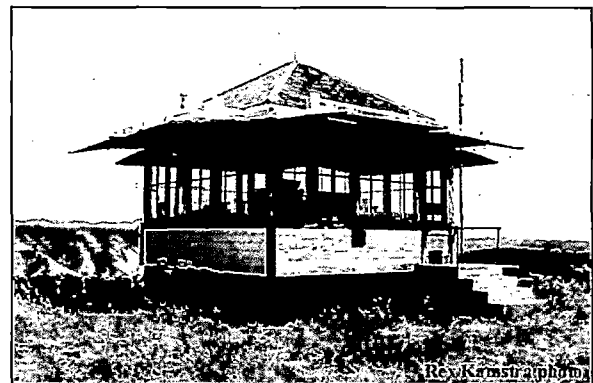
Harl Butte on the Wallowa-Whitman, Rex Kamastra
photo

representation of the L-4. There were no L-4As constructed in Region 06.

A total of 292 L-4 lookouts were constructed on National Forests in Oregon and 238 in
Washington (Swift, 1993c: 1-30)[35]. There are 29 L-4s in Washington and 39 in Oregon—
included in this count are both L-4s with hipped roofs and L-4s with a gabled roof. The date
range of the surviving lookouts range from 1929 to 1989. The L-4 makes up 87% of the total

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[35] This inventory count included the entire L-4 series (L-4A, L-4-AR, L-4 Gable, L-4 Hip).

inventory. Several are ground cabins on modest foundations and others are on towers ranging from 10- to 60-feet. The L-4 is a Live-in lookout. Character defining features that make an L-4 are:

1. "14'x14' floor plan
2. 6'-9' ceiling
3. Pre-cut framing and finished members in easily transportable 8-foot lengths
4. Easily secure to diverse foundations; from various rock or native surfaces to log platforms and high towers
5. The structures were often guyed for extra support, particularly on towers
6. 3'-0" catwalks were standard on cabins placed on ridge tops and towers. These catwalks were typically constructed with 2"x10" sills and 2"x4" guard rails...
7. Windows round the upper 2/3rds of the exterior walls for viewing the entire landscape
8. Large shutters which provided structural support from heavy snow and ice buildup when closed and shade from the sun when opened. Shutters were made on the site with 1 x 6 shiplap
9. A lightening protection system utilizing copper wire running down the eaves of the cabin, down the sides and into the ground. Metal components inside the cabin, such as the fire finder or stove, were also attached to this system.
10. The standard plan L-4 included construction details for onsite construction details for on-site construction of pre-cut wooden furnishings. These included a kitchen cabinet, a table, bench fire finder and water stand, and shelves. While many of these furnishings can still be found in lookouts, they were not a permanent part of the structure and are not a necessary part of a nomination or determination of eligibility" (Carricker, 1991: 39-40)

Remaining L-4 Lookouts on National Forest Lands in Region 06

Key

L-4

N

0   30   60   120 Miles
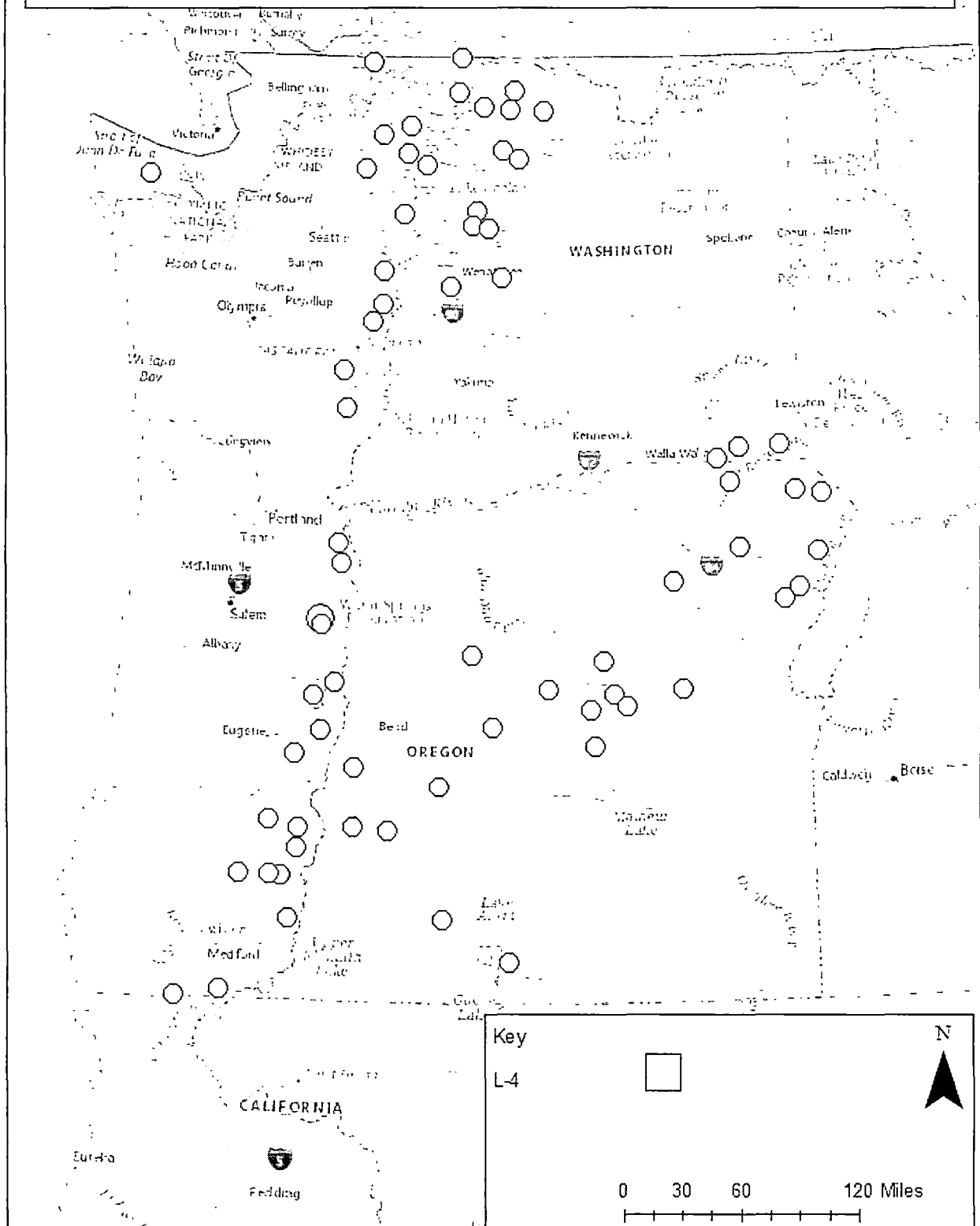
Remaining Platform Tower Lookouts on National Forest Lands in Region 06

WASHINGTON

OREGON

CALIFORNIA

Key

Platform Tower ■

N

0   30   60   120 Miles
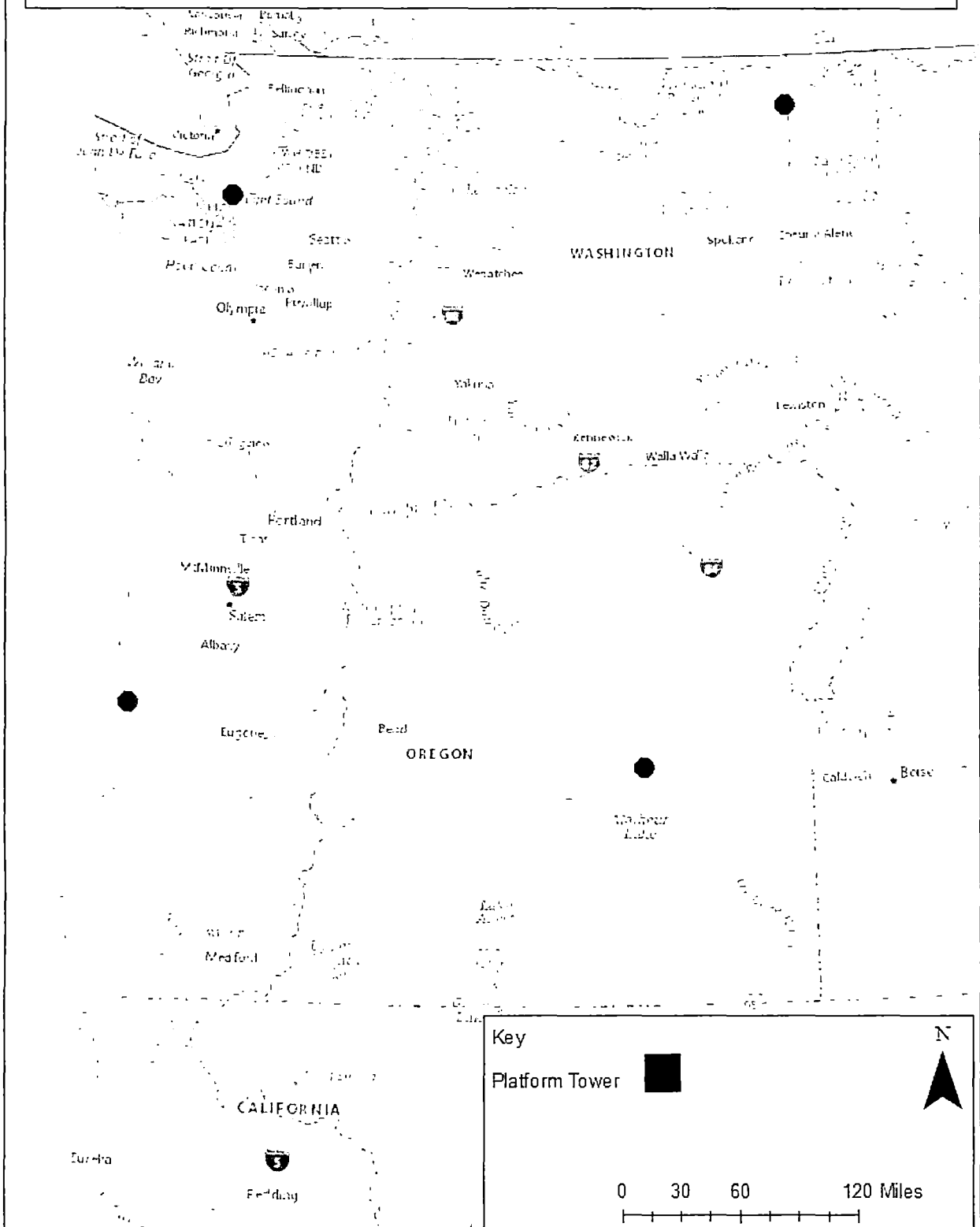
◼ PLATFORM TOWER (4)

There were 76 Platform Towers constructed in Oregon and Washington (Swift, 1993d: 1-7). A total of 39 Platform Towers were constructed in Oregon, 32 (82%) of which were constructed on National Forests. The remainder are managed by the Fire Protection Agencies and the State of Oregon. There were 37 Platform Towers constructed in Washington, 25 (67.6%) of which were constructed on National Forests. The remainder were constructed on the State of Washington, the Spokane Indian Reservation, and Longview Forest Fire Association land.

Fairview Mountain Platform Tower in 1982, Ron Kemnow photo, oregonlookouts.weebly.com

There are two Platform Towers remaining in Oregon and two in Washington—all are in various states of disrepair. The Fairview mountain lookout has railroad spikes for steps and is the only remaining lookout on the Siuslaw. Fairview Mountain and Craft Point on the Malheur are from the Intermediate period (1912-1932). The Platform Towers in Washington are both from the Depression era (1933-1941). Platform Towers are for Observation-only. There is one Platform Tower in each corner of the Region.

◼ R-6 (43)

It is unknown how many R-6 lookouts were constructed in Region 06. Aside from the L-4, the R-6 is the second most prolific style of lookout remaining and it is also the last standardized lookout style designed. In Region 06, there are 11 R-6s remaining in Washington, 30 in Oregon, and two in Idaho. Of the R-6s remaining, the earliest is from 1933 and the last one constructed was in 2004. They range from ground cabins on modest foundations to wooden towers up to 67-feet in height. Although the original design used a flat tarred roof, some R-6s have a hipped roof to withstand the harsh weather. This model also does not have a shutter system and requires the lookout to be boarded-up or moth balled when they are not in use. The two R-6s that are in Idaho are managed by the Wallowa-Whitman National Forest in Oregon. The R-6 is a Live-in lookout.

Dixie Butte on the Malheur NF c.2010, photo by Rex Kamastra

Remaining R-6 Lookouts on National Forest Lands in Region 06

Key

R-6 ■

N ↑

0   30   60   120 Miles

Remaining L-6 Lookouts on National Forest Lands in Region 06

Key

L-6

N

0   30   60   120 Miles
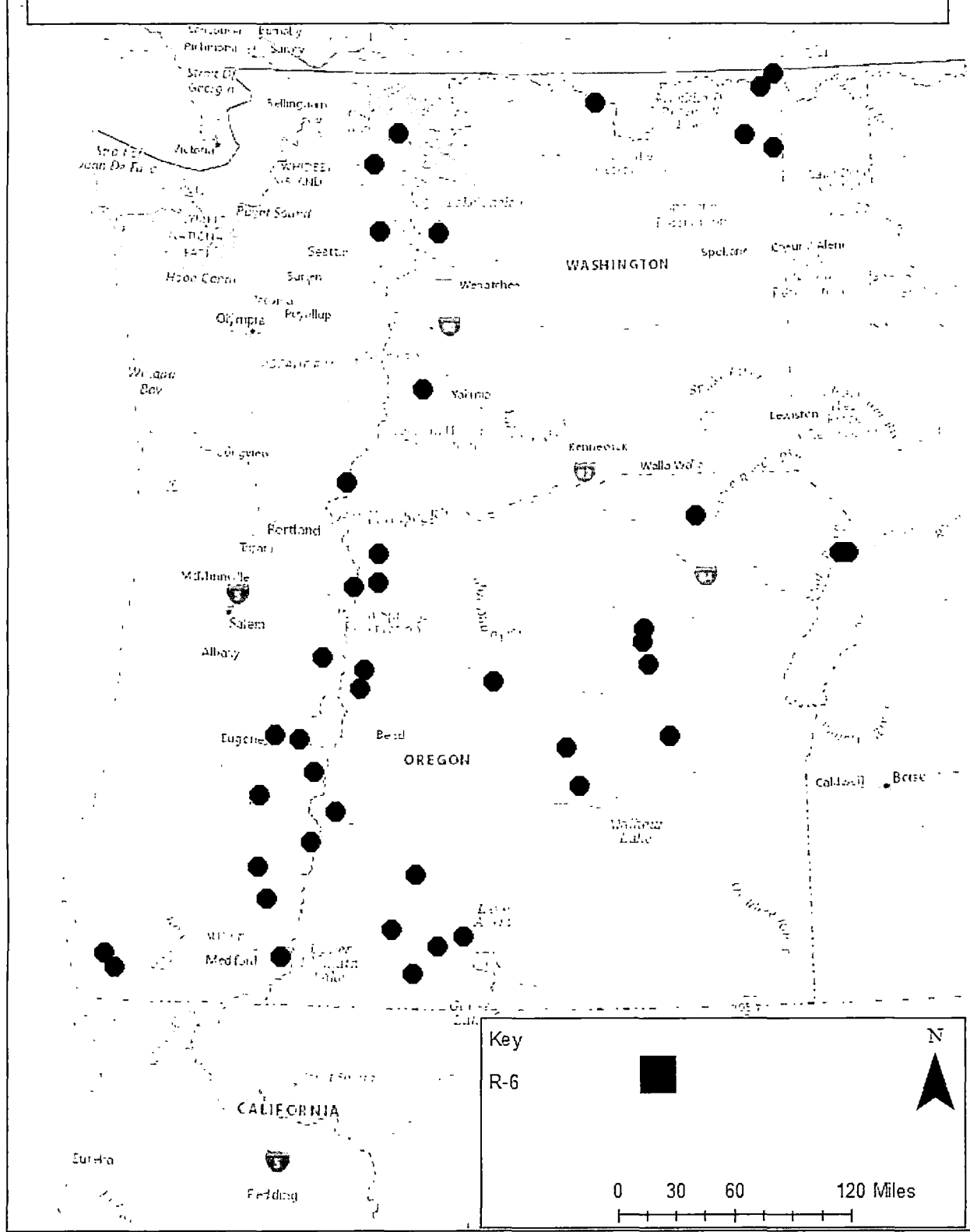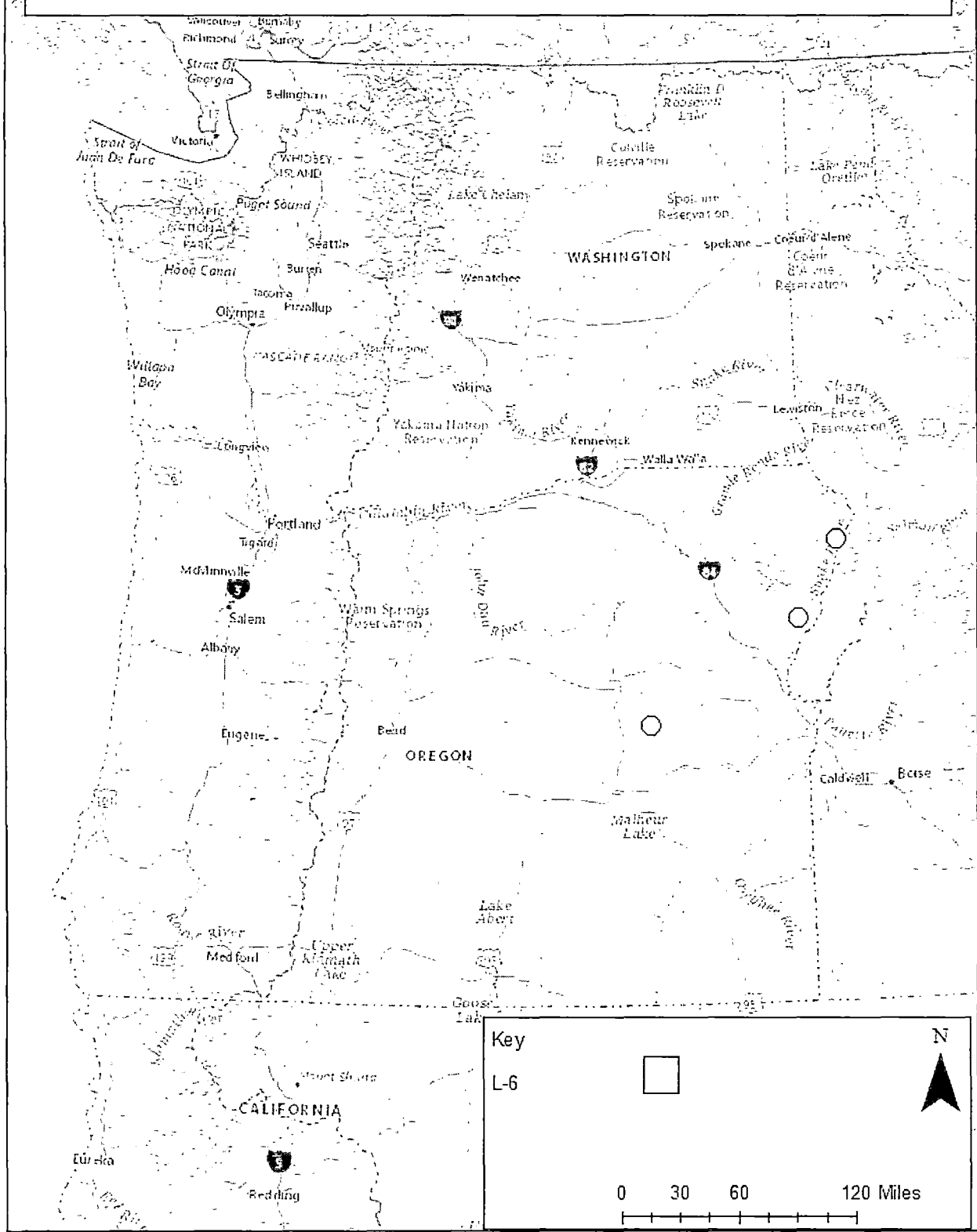
☐ L-6 (3)

There were 99 total L-6 lookouts constructed in Washington and Oregon (Swift, 1992c: 1-18). There were 45 L-6 lookouts constructed in Oregon, 26 (57.8%) of those were constructed on National Forest lands. The remainder were constructed on the State of Oregon, various Fire Protection Associations, and the Warm Springs Indian Reservation. There were 54 total L-6s constructed in Washington—16 (29.6%) on National Forests. The remainder were constructed on the State of Washington, the Colville Indian Reservation, the Quinault Indian Reservation, the Spokane Indian Reservation, the Yakima Indian Reservation, US Fish and Wildlife, US Army, City of Seattle Water Department, and privately owned land.

Frazier Point on the Malheur, Rex Kamastra photo, 2014.

There are three remaining L-6 lookouts on National Forests in the Region—all in eastern Oregon. The Frazier Point L-6 on the Malheur was constructed in 1936 and the cab is on a 100-foot guyed treated timber tower. The Pine Ranger Station lookout, constructed in 1938, is also on the Malheur and is on a 52-foot treated timber tower. Hat Point on the Wallowa-Whitman was constructed in 1948 on an 82-foot tower and an observation deck was added in the 1980s at 60-feet. The L-6 is an Observation-only lookout.

■ CL-100/106 (8)

Although CL100/106s were more popular in the Southeast (Region 3) and California (Region 5), 13 were constructed in Oregon and Washington—8 on National Forest land. The eight CL-100/106 lookout still remain—one in Washington and seven in Oregon. The remaining five were constructed on Indian Reservations in Eastern Washington[36] (Swift, 1993b: 1-3).

Pelican Butte on the Fremont-Winema National Forest has been modified to accommodate radio equipment and has hence been voted Oregon's Ugliest Lookout by the Fire Fighter Lookout Association (FFLA). Pelican Butte was originally constructed as an L-4 in 1935 on a cable braced pole tower (PT) and was replaced with
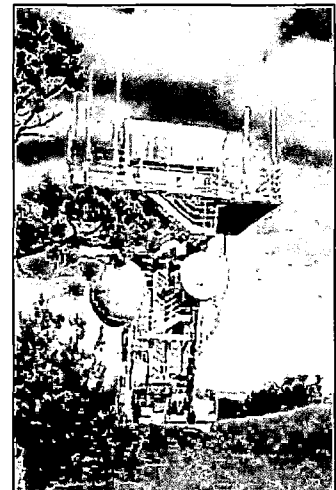
Pelican Butte lookout. Howard Verschoor photo.

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[36] Three on the Colville and two on the Spokane Indian Reservations.

an R-6 on a treated timber (TT) in 1954. In 1986, a cable television company placed a 10' x 10' metal cab on a 20-foot metal tower to accommodate their equipment. It is unclear where they pilfered the cab and tower and it is only staffed by fire during emergency incidents. CL-100/106 lookouts are Observation-only.

Remaining CL-100/160 Lookouts on National Forest Lands in Region 06
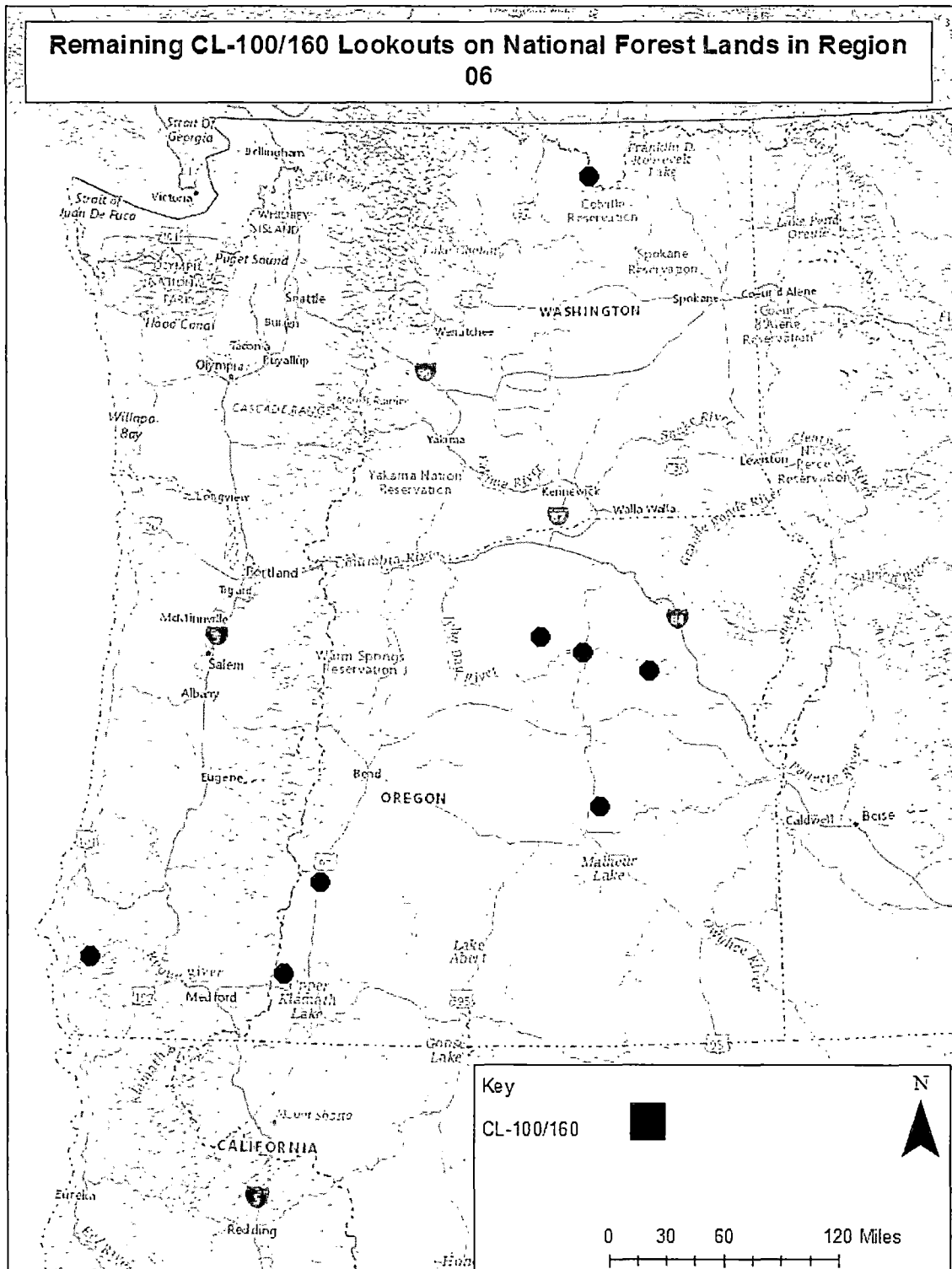
Remaining Octagon Lookouts on National Forest Lands in Region 06

Key

Octagon ▪

N

0   30   60   120 Miles
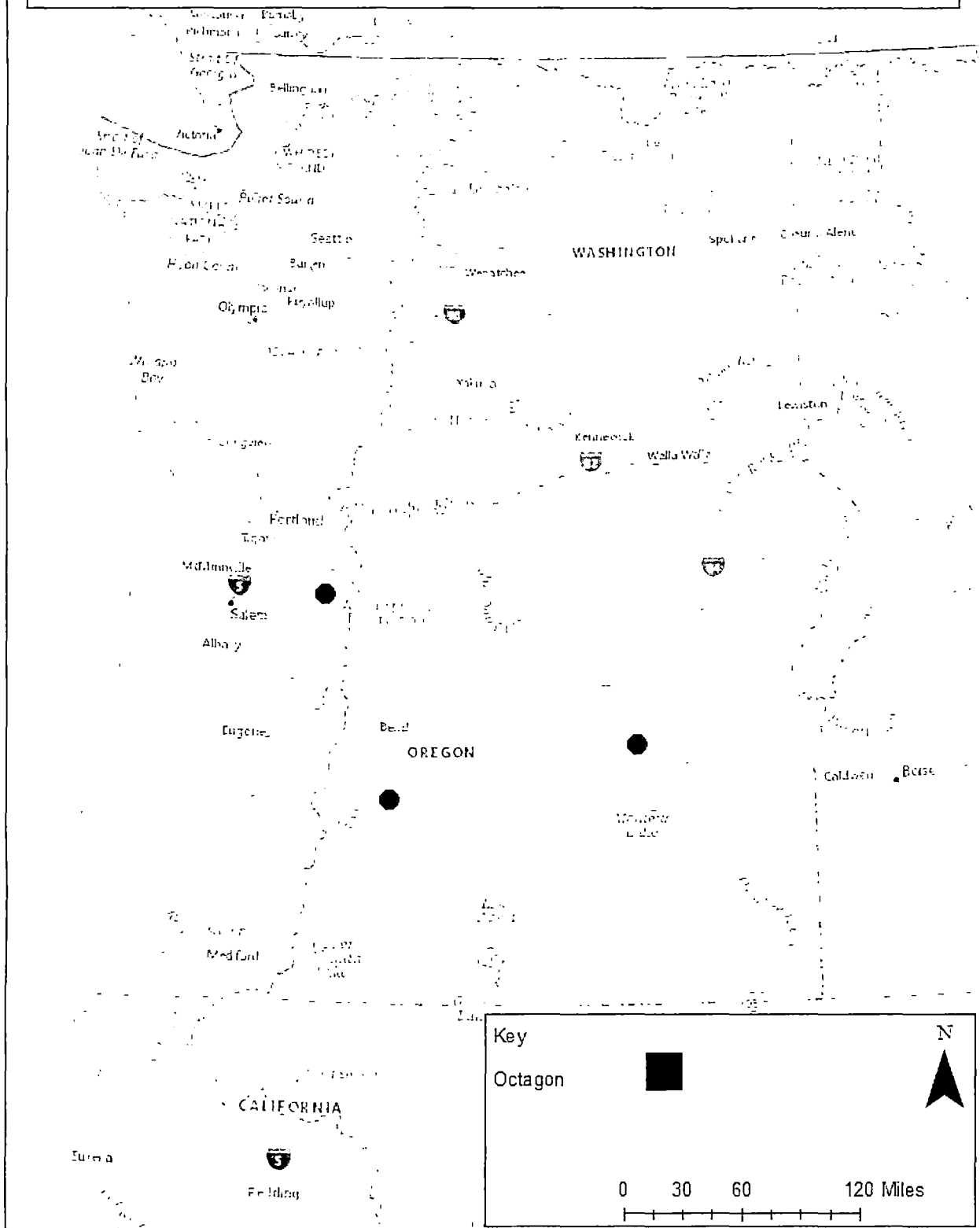
■ OCTAGON (3)

It is unknown how many octagonal lookout structures exist. There are three Octagon's in Region 06—all in Oregon and all from the Modern & Contemporary period (1961-2010). The oldest of these Octagons is Sisi Butte on Mount Hood that was constructed in 1977. This Octagon replaced the previous L-4 that was used as an AWS site during WWII. Octagons are placed on pole towers that average around 40-feet in height and are surrounded by a catwalk. Octagons are Live-in lookouts.
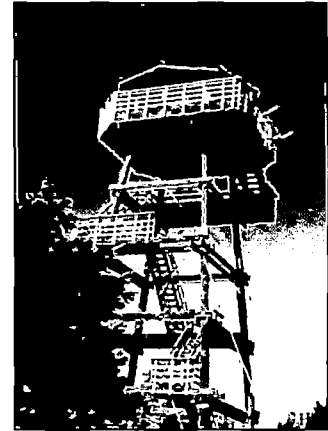
Sisi Butte c.1997 on Mt Hood.Howard Verschoor photo.

☐ REPLICAS (3)

It is unclear how many lookout replicas exist. There are three Replicas—two on the Deschutes and one on the Willamette—all in Oregon. The two Replicas on the Deschutes are both L-4 replicas. The East Butte lookout is still actively used for fire detection and the Lave Butte Tower and Observatory is a visitor's center, museum, and interpretation center on the first floor and a lookout on the second story. Lava Butte is located on a lava cone and has reported the most fires in the region since its original establishment in 1932 L-4. All of the Replica's present are Live-in lookouts.
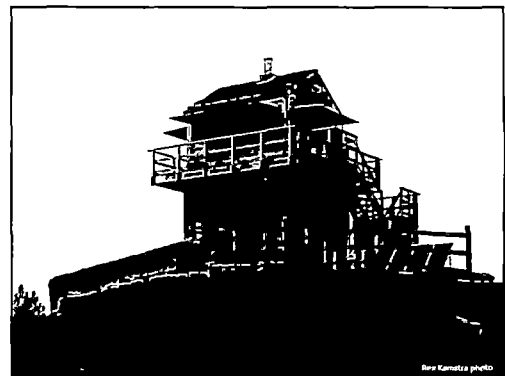
Lava Butte L-4 gable two-story replica. Rex Kamastra photo, 2014.

☐ HOUSE (1)

In 1997, the Fremont-Winema National Forest constructed a two-story house on Dog Mountain. The house's floor plan is 15' x 15'. The upper story is used for fire detection and the first story was constructed for living quarters. The house is actively staffed every year for fire detection. This patrol point was originally established in the 1910s with an Adelaide and was staffed by a female watchman, Bertha Covert, during WWII (NHLR Dog Mountain). The only House lookout is a Live-in lookout.

Dog Mountain Lookout House, Howard Verschoor photo, date unknown.

Remaining Replica Lookouts on National Forest Lands in Region 06
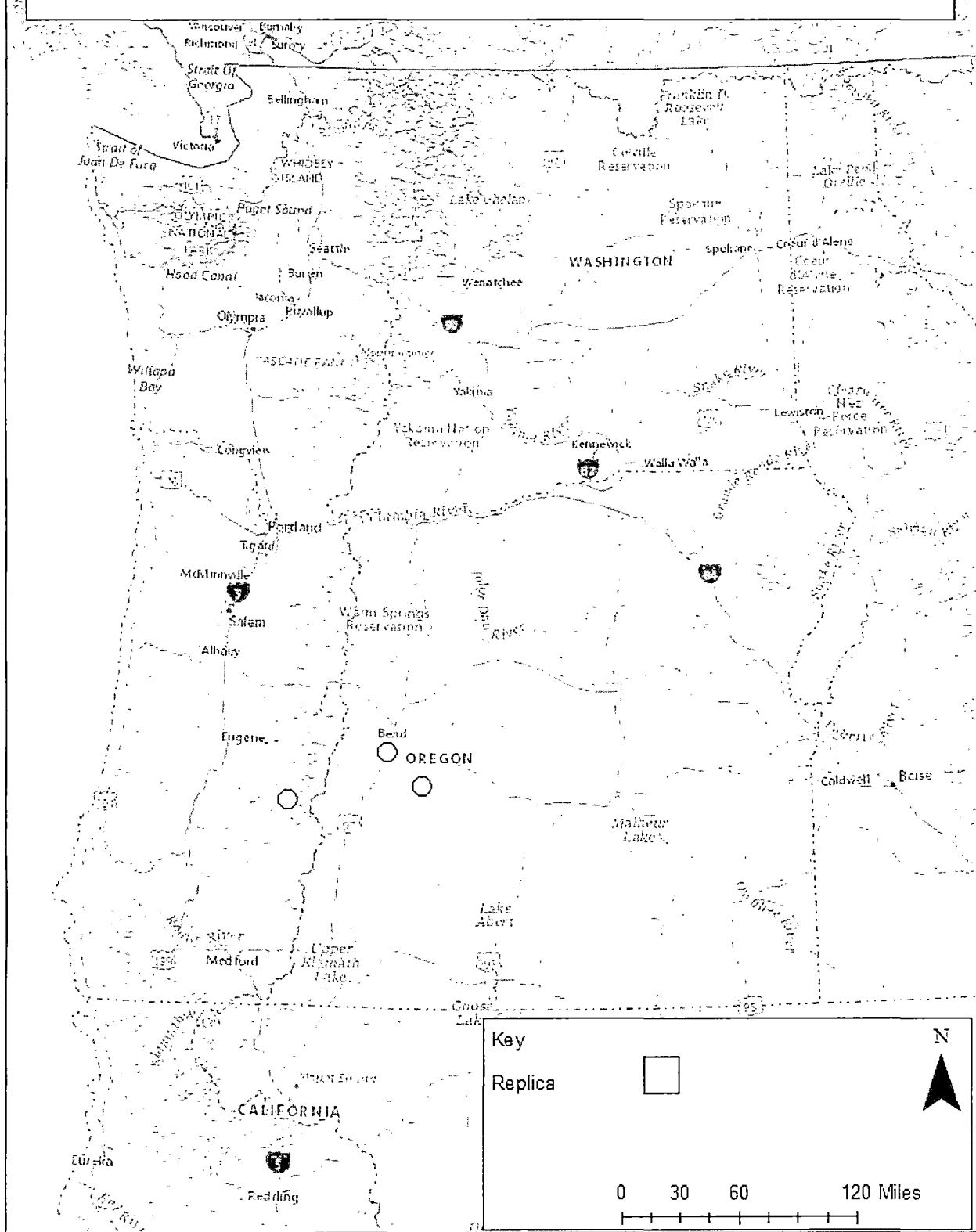
Remaining House Lookouts on National Forest Lands in Region 06

WASHINGTON

OREGON

CALIFORNIA

Seattle
Olympia
Tacoma
Puyallup
Bremerton
Yakima
Wenatchee
Spokane
Coeur d'Alene
Lewiston
Kennewick
Walla Walla
Longview
Portland
Tigard
McMinnville
Salem
Albany
Eugene
Bend
Medford
Grants Pass
Redding
Eureka
Caldwell
Boise

Strait Of
Georgia
Strait of
Juan De Fuca
Victoria
Bellingham
Puget Sound
Willapa
Bay

Key

House □

N

0   30   60   120 Miles

72
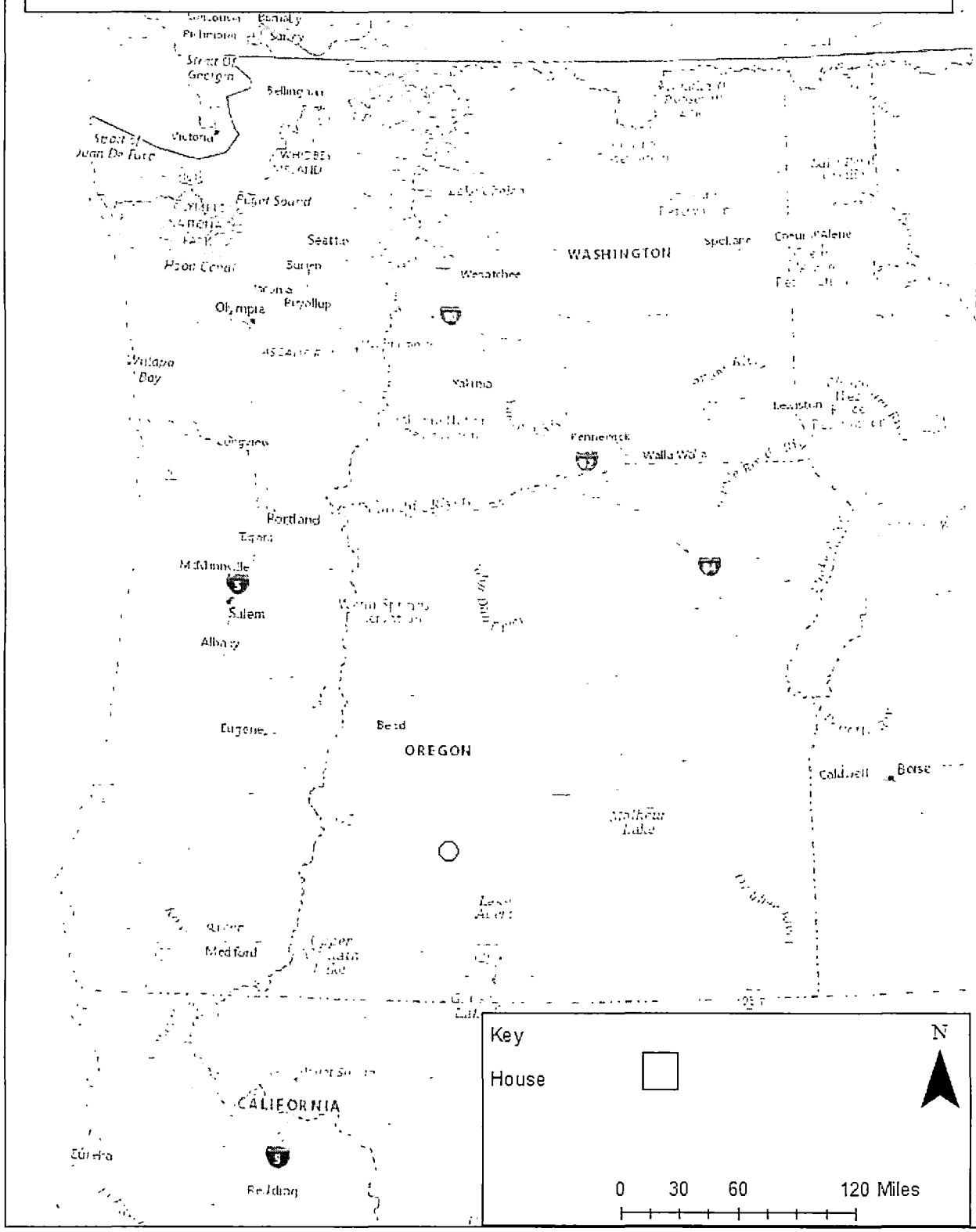
CHAPTER 8: TEMPORAL DISTRIBUTION & NRHP SIGNIFICANCE

The historic context in Part I updates the architectural trends post-1960 and the recent periods are included in this analysis of architectural lookout trends. No lookouts survive prior to 1912. The periods of surviving lookouts are:

Period	Date Range	Lookouts Remaining
Intermediate Period	1912-1932	38
Depression Era	1933-1941	39
WWII & Post War Period	1942-1960	61
Modern	1961-1980	25
Contemporary	1981-present	10

It is important to note that more variety of lookout styles were designed in the early eras of the Forest Service while the agency was growing and learning--trying to find the ideal structure to support fire watching. Once Region 06 began standardizing the construction of lookouts, the variability of styles started to decrease.

Temporal Distribution
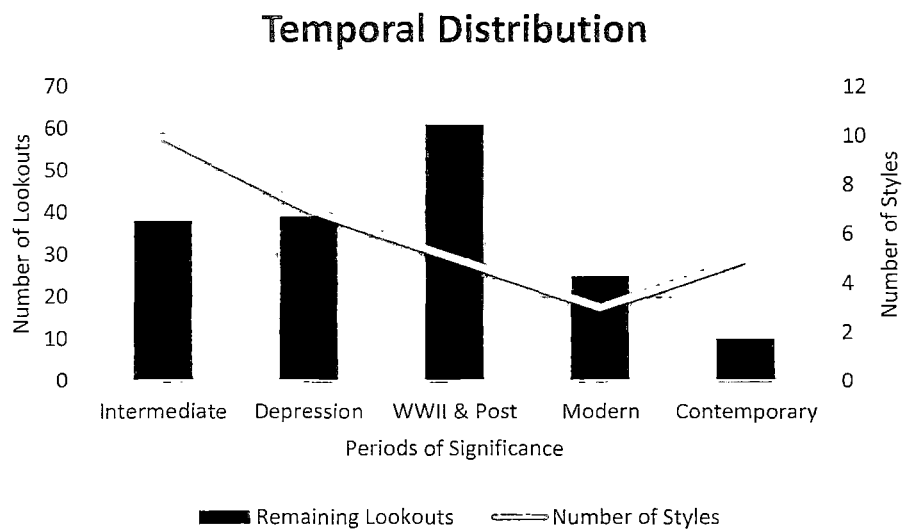
INTERMEDIATE PERIOD (1912-1932)

This era marks the beginning of the Forest Service's branding as a wildfire management agency and the initial phase of standardization of lookout styles. The funding for the lookout system came before relief funds from the WPA during the Depression era. The most amount of lookout styles are represented from this period—a reflection of the Forest Service testing and attempting to standardize lookout styles. Lookouts from this period are closely associated with

the development of the Forest Service in Region 06 and the agency's initial attempts at standardizing wildfire detection.

Nine styles remain from this period expressed through 38 lookouts —three lookout cabins, eight Crow Nests, three Tree Platforms, two Cathedrals, seven D-6 Cupolas, seven L-4s (four gabled and three Hipped), two L-4-AR Hall Specials, four Aermotor Towers, and two Platform Towers. Four of these styles are observation-only and the remaining five are live-in.

DEPRESSION ERA (1933-1941)

This period is defined by the beginning of the Great Depression and the time immediately before the US entered WWII. During this era, the CCC placed hundreds of lookouts on peaks throughout the region and relied heavily on the L-4 model that was the most recent standardized lookout plan. There were approximately 935 Forest Service lookouts constructed in Region 06 during this period—roughly 412 in Washington and 523 in Oregon (Carricker, 1991: 18). By the end of the Great Depression and beginning of WWII, nearly every acre was within sight of a watchman. Lookouts from this period are potentially eligible for inclusion in the NRHP for their association with the WPA and the government's impetus to boost the economy and employ qualified men.

Of the lookouts remaining, only 39 are from this period—26 of which are L-4s. The surviving L-4s make up 67% of the overall inventory from this period. Other surviving styles include six Aermotor towers, one Crow Nest, one Tree Platform, one Platform Tower, one L-5, and two L-6 towers. Five of these styles are Observation-only and two are Live-in.

WWII & POST WAR PERIOD (1942-1960)

This period is marred by WWII and the timber boom that happened afterwards. WWII and the Post-War Period are tied together because they are associated with the war and war recovery effort. By this time, only standard plans were used for the construction of new lookouts. The AWS relied on standardized plans for the swift construction of lookouts at patrol points. Lookouts from this period are potentially eligible for inclusion in the NRHP under Criterion A for their direct association with National Security during WWI and their direct relationship to the increased demand for timber extraction in the post-war (Atwood et al., 2005: 61-63). The government's response to the timber demand post-WWII and limited budgets are evident in the composition of structures from this period. Lookouts from this period were constructed by

architects with consideration to the Agency's image, budget constraints, and the enforcement of standardized designs on individual Forest units.

There are a total of 61 lookouts remain from this period (n=36 lookouts, 59%) and R-6s (n=17 lookouts, 28%). The remaining representative styles from this period are six CL-100/160s, one L-5, and one L-6. The L-6 is the only Observation-only style from this period—the remainder are Live-in lookouts.

MODERN ERA (1961-1980)

This period encompasses the passing of legislation that protects and assesses historic resources such as lookouts. Many older lookouts that were in poor condition saw their removal through fire, sale, or demolition. This period also marks the crescendo of technology surrounding wildfire detection that impacted the overall need for a lookout structure and watchman. The R-6 was the last standardized lookout plan in the Region and it was the most common lookout style to be constructed during this period. Lookouts from this period do not have any direct correlation with National events and trends but rather extended the continuum of fire detection and suppression in Region 06.

As a result, there are only 25 lookouts remaining from this period—all but two are R-6s (n=23, 92%). The other two are the first introductions of an Octagon Tower and Replica.

CONTEMPORARY PERIOD (1981-2010)

This period is an extension of the Modern Era; however, these lookouts are not Historic (~50 years of age) nor are they directly associated with National events or building trends. There were 10 lookouts constructed during this period—three R-6s, two Replicas, two CL-100/160s, two Octagon Towers, and one lookout House. All of these lookouts are Live-in lookouts.

CHAPTER 9: USES

Lookouts have three main uses—fire detection, housing communication sites (cell phone and radio equipment) through Special Uses, or as a recreation rental. A lookout that does not meet these three categories is inactive. Fire detection occurs during the summer months and, occasionally during high-risk incidents where life and property are at risk, inactive lookouts are staffed just for emergencies. Special Uses and recreation rentals are the Agency's attempt to give life back to these structures.

Special Uses, as they relate to lookouts, are communication sites. Relay equipment is often stored inside the cab of the lookout or attached to the outside superstructure. Often, these lookouts are also staffed for fire detection or used in emergencies. It is important for lookouts to be in-use to ensure maintenance and preservation. A chart correlating each lookout and its use is in Appendix C and maps of each usage are in Appendix D.

FIRE DETECTION

There are 66 lookouts regionally that are still staffed by the Forest Service during the summer for fire detection. Other agencies, including Tribal Nations, work with the Forest Service to staff these lookouts. Lookouts actively being used need to be preserved to continue their usage.

EMERGENCIES

Twenty-three (23) lookouts are available for fire detection in emergency situations in summer months. These are generally dormant and inactive, comm sites, or winter recreation rentals.

INACTIVE

Seventy-nine (79) lookouts are inactive. There are more lookouts inactive than used for fire detection. These largely include older lookout models in poor condition or patrol points that are no longer viable. Many of these lookouts are Live-in and can be converted into a recreation rental. The remaining Observation-only lookouts are safety hazards and supplying structural stability or engineering will be needed to convert them. Observation-only lookouts are usually part of a larger complex where ground houses, garages, and other secondary structures could be converted into a recreation rental.

SPECIAL USE PERMITS (SUPs)

There are 13 lookouts in the region under an SUP. Although the lookouts do not see activity and use daily, their condition is broadly monitored by the permitee as it relates to their equipment. Lookouts that are under a SUP have the ability to be adapted into a recreation rental if or when the permit is not renewed.

RECREATION RENTAL

Twenty-two (22) Live-in lookouts are available to rent overnight in the region through the recreation rental program—only five in Washington. They are available to rent for either the summer or winter months. Only three types are available to rent—the L-4, R-6, and CL-100/160.

Converting lookouts into recreation rentals is a method that allows for active maintenance and preservation and use through collected fees. Lookouts can be rented through Recreation.gov and require booking at least six months in advance. Most lookouts cost $30 to $65 a night to rent but there are some in the region that cost upwards of $85 a night[37]. When fees are generated, the money collected goes toward the overall deferred maintenance budget line for facilities and often, the fees generated do not go back into the lookout's maintenance. This allows for the deferred maintenance to get so high that the Forest Service cannot afford to repair them.

OTHER USES

There are 11 lookouts that have uses outside of the previously mentioned. The North Twenty Mile Peak D-6 lookout and the Mount Bonaparte lookout cabin on the Okanogan-Wenatchee National Forest are used for storage. Bull of the Woods L-4 lookout in Mt. Hood National Forest is generally inactive but is used as an emergency backcountry Guard Station. Winchester Mountain L-4 in the Mt. Baker-Snoqualmie National Forest and Columbia Mountain lookout cabin in the Colville National Forest are also mostly inactive but are open to the public for use as a trail shelter. Four lookouts are used as a museum exhibit and interpretive center--these are Red Mountain D-6 and Illahee Rock D-6 in the Umpqua National Forest, Sand Mountain L-4 in the Willamette National Forest, and Red Top L-4 lookout in the Okanogan-Wenatchee National Forest. The Unity Ranger Station Aermotor lookout in the Wallowa-Whitman National Forest is wrapped with lights in the winter and celebrated as a town Christmas tree.

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[37] Heybrook in Mt Baker-Snoqualmie NF is $75 a night and Warner Mountain in Willamette NF is $85 a night.

PART III: METRICS FOR RETENTION
CHAPTER 10: SHOULD IT STAY OR SHOULD IT GO, NOW?

The total number of lookout structures constructed on the Forest Service in Region 06 is unknown. We do know that there have been hundreds to thousands of lookouts placed throughout Washington, Oregon, Northern California, and Western Idaho on state, private, federal, county, and reservation lands over the past 100 years. It is not necessary or practical to retain every lookout structure remaining and there are some that need to be decommissioned.

Decommissioning can mean a number of things including removal but often, decommissioning is synonymous with neglect. Decommissioned lookouts are then a non-managed resource where they are moth-balled and allowed to decay. This happens when the deferred maintenance is so high that there is no benefit in keeping it nor is there a profit to be made. A meaningful mitigation measure is to put funding into the lookouts that are eligible for the National Register that the Forests or Region want to keep, rather than trying to preserve them all. The following five steps are guidelines to consider that can be used to help determine if a lookout is worth preserving or if it should be let go.

1. Is it currently being used?

If the lookout is currently being used—through either Fire Detection, an SUP, Rec Rental, or Other—continue to invest and find alternative uses. When a lookout is used, even temporarily in emergencies, it means that it is getting some sort of active maintenance. When a lookout isn't being used, lookouts begin to degrade and the lack of use means the lack of maintenance--the lookouts eventually compound maintenance costs to a point where the Forest Service can no longer afford to manage them. If a lookout is being used, it is generally in a better condition than one that is not being used.

If it is actively being used by a partner group, as a rental, or under an SUP, then it would be a conflict of interest to decommission it. Its usage needs to be considered before it is decommissioned. If possible, alternative uses for lookouts during the off season should be explored when the lookout is dormant. If the lookout is not being used—either vacant or inactive—continue to the next question.

2. Is it Eligible or listed in the National Register of Historic Places (NRHP)?

The significance of USFS Fire lookout structures in Region 06 as a thematic grouping lies with their direct association with the development of the Pacific Northwest's wildfire detection system. For this reason, lookouts are potentially eligible for listing in the NRHP under

Criterion A for their association with Public Land Management as well as natural resource conservation--specifically wildfire detection and suppression. Lookout structures embody characteristics representative of certain time periods. Wildfire lookouts represent the National initiative to protect our Nation's timber from being decimated by wildfire and devotion to protect timber resources for future generations.

Stylistically, lookouts are potentially eligible for inclusion in the NRHP under Criterion C for embodying distinctive characteristics that represent the work of a master craftsman or for their distinctive composition. In order for a lookout to be listed in the NRHP, the lookout must have been used for fire detection and suppression during the historic period and clearly be associated with the administrative or conservation activities in Region 06. The fire lookout should also embody the craftmanship and materials originally used and retain its historic character. Fourteen (14) of the 16 lookout styles are potentially eligible for inclusion in the NRHP under Criterion C for embodying distinctive characteristics or composition. These styles are:

1. Cabin
2. Tree Platform
3. Crow Nest
4. D-6
5. Aermotor
6. L-4
7. L-4-AR
8. L-5
9. Cathedral
10. Platform Tower
11. L-6
12. R-6
13. CL-100/106
14. Octagon

Replicas and the lookout House are not eligible for inclusion in the National Register because they do not embody distinctive composition or craftmanship representative of lookouts stylistically.

The L-4 and the R-6 are the two most prolific lookout styles constructed in Region 06 but not all L-4 and R-6 lookouts are eligible for inclusion in the NRHP. Like all historic resources potentially eligible, the lookout must retain either all or a combination of the seven aspects of

integrity--location, setting, design, materials, workmanship, feeling, and association. Aside from the L-4 and the R-6, there are less than 10 remaining lookouts for the remaining styles on National Forest Lands in Region 06. The total number of standing lookouts on other lands in Oregon and Washington is still unknown. Because these styles originated from Regional and National Forest Service designs, these remaining styles are the last of their legacy. For this reason, a representative sampling of each contributing lookout style should be retained in the Forest Service repertoire. This will allow for their continued enjoyment and appreciation for current and future generations.

Eligible lookouts must embody integrity though a combination of location, setting, design, materials, workmanship, feeling, and association. Furthermore, there are numerous associated and contributing secondary features—trails, roads, telephone lines, trail shelters, rag and tent camps, ground houses, garages, outhouses, cisterns, rock cairns, historic graffiti. In some cases, whole lookout complexes are eligible.

There has not been a Determination of Eligibility (DOE) undertaken for every lookout and there are some lookouts that have already been nominated and listed individually on the National Register. There are some lookouts that have also been found eligible through an informal DOE process. Some DOEs that have been completed deem certain lookouts to be ineligible because they are not 50 years of age. The rationale for a lookout being deemed ineligible should be looked at and, in some cases, certain lookouts may need to be reevaluated. Eligible lookouts that have not been nominated or listed should be included in the multiple-property nomination when it is compiled.

Just because a lookout is eligible or even listed on the National Register does not mean that the resource will be managed to the Secretary of Interior (SOI) standards. Tree lookout structures, for example, are solely a Heritage asset and they do not have the ability to be converted into a profitable overnight rental. Due to their limited numbers, tree lookout structures are eligible for inclusion in the NRHP under Criterion C but a viable management option is also to attempt to preserve what is left in situ until the deferred maintenance is too high to repair damages. If it is listed and potentially slated for decommissioning, then continue to step 3.

Some lookouts have already been listed individually and the Forest Service should continue to manage and find ways to continue their use. If the lookout is found to be ineligible or the deferred maintenance cost too high to continue management, then continue to the next question.

Evaluating Your Lookout: Should it Stay or Should it Go, Now?

1. Is it currently being used?

YES

NO

2. Is it eligible or listed in the NRHP?

YES

NO

3. What type is it?

Live-in

Observation-only

Is it a L-4 or R-6?

NO

YES

4. Is there a road or a trail?

YES

NO

5. Do partners have a vested interest?

YES

NO

Continue to Manage and Invest

Decommission

3. What type is it—a Live-in lookout or an Observation-only lookout?

Observation-only lookouts are a safety hazard and have limited adaptive-reuse potential unless they are consistently maintained or overseen by a structural engineer. Tree Platforms and Crow Nests are situated in trees—some living and some dead. Platform Towers are pole structures made by locally cut timbers. These will eventually decompose without preservation. Currently, there is one in every corner of the region and the only lookout structure remaining on the Siuslaw. Tree Platforms, Crow Nests, and Platform Towers have limited adaptive-reuse potential but they do have value as a Heritage asset. Aermotors and the L-6 have cab structures on top of towers. The tower superstructure requires guy wires and structurally stable members. Abandoned tower superstructures can be stabilized and are not a lost cause. The cab is also small—ranging from 6 x 6-feet to 8 x 8-feet and does not lend itself to be converted into an overnight recreation rental; however, they make great observation points in remote parts of the forest. Observation-only lookouts are usually part of a larger complex, and in some cases, the ground house or garage could be converted into a profitable rental but not the lookout itself.

Live-in lookouts could be converted into an overnight recreation rental. Of the live-in lookout styles that remain, the L-4 and the R-6 are the most prolific. Live-in lookouts are also on tower structures that are safety hazards, but these can be mitigated by tightening guy wires and replacing broken or rusted members. There are less than 10 lookouts remaining of the historic live-in lookout styles—Cabins, Cathedrals, D-6s, L-4-AR, L-5, CL-100/160—and less than 10 of modern and contemporary styles—Octagon, Replicas, and Houses. This should be considered before decommissioning. If the lookout is an L-4 or an R-6, continue to the next question.

4. Is there a road or trail?

Lookouts are generally located at the terminus road or middle of a trail. Many roads and trails leading to lookout locations have been decommissioned and no longer provide access to these areas. Trails, when decommissioned, lose portions of their tread and biomass will begin to accumulate. This is a safety hazard for hikers who might get lost or stranded in the backcountry. When roads are decommissioned, it is usually because access to the site is no longer needed or because the road washed out from a flood or landslide. Vehicles may no longer use the road but in some cases, visitors are able to hike to the lookout along the road prism. Decommissioned roads restrict vehicular traffic by a gate along the access road. This is to hinder vandalism. If the road can be maintained for vehicles or foot traffic, then this is considered to be viable access.

If the lookout is accessible via a road or trail, then it can be converted into a recreation asset or SUP. Some lookouts are in areas where no other buildings exist and sometimes have viewsheds where there are no signs of civilizations. If access is limited, the lookout cannot be used and it would no longer be viable for the Forest Service to invest in its management. At this point, the lookout should be decommissioned. If the lookout is accessible, continue to the next question.

5. *Do partners have a vested interest?*

The Forest Service partners with other Federal, State, local, and tribal stakeholders as well as recreation and conservation groups. There are a wide range of interests that the Forest Service caters to which means there is a wide range of uses available outside of communication and rental sites. They could be adapted into observation or star-gazing sites, wildfire and forest management education or museum, post for an artist-in-residence, etc. Lookouts serve as a protective shelter in some of the Region's most formidable, yet majestic landscapes and it is a privilege to have an enclosed space and amenities in these areas. If there is no interest from stakeholders or partner groups and it has no value to Heritage, then the lookout can be decommissioned.

CONCLUSION

Lookouts are an icon of the Forest Service. They are a unique type of architecture that was developed by the Forest Service in this region and designed to cater to wildfire detection. They exist in landscapes where there isn't any other infrastructure for miles. They are irreplaceable. But financially, it is not always prudent to preserve and manage. They were constructed as Administrative structures and some still serve that role. Others have either aged to become a Heritage asset, converted into a recreation rental, or managed under a SUP. The remaining have been abandoned and are inactive. Several inactive lookouts have the capability to become recreation assets and expand the rental program. These should be retained as more and more people are turning to the Forests to seek solace in the time of a pandemic. This trend will likely continue into the post-pandemic period.

DOEs need to be written with priority given to rare lookout styles. A Multiple Property Nomination needs to be compiled for these lookout styles under Criterion C. Lookouts associated with the CCC or intermediate period are potentially eligible under Criterion A. Once the nomination is complete, the Region can move forward with procuring funds and developing holistic management strategies. Lookouts are just as iconic to protecting the forest from wildfire

as Smokey Bear and have been on the landscape decades before Smokey became a mascot. Lookouts are a dwindling tangible resource that demonstrate wildfire management and suppression tactics. The Forest Service was built on Lookouts and their preservation is vital for the enjoyment of future generations.

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APPENDIX A: INVENTORY OF OREGON

#	NAME	STYLE	YEAR
1	Black Butte Lookout (Old)	D-6 Cupola	1922
2	Black Butte Lookout (New)	R-6	1994/95
3	East Butte Lookout Tower	L-4 replica	1995
4	Fox Butte Lookout Tower	Aermotor	1933
5	Fox Butte Ground House	L-4 Gable	1931
6	Green Ridge Lookout Tower	R-6	1961/63
7	Lava Butte Lookout Tower & Observatory	L-4 Gable replica	1998
8	Odell Butte Lookout Tower	R-6	1961/63
9	Round Mountain Lookout Tower	L-4	1933/34
10	Spring Butte Lookout Tower	Octagon	1991/ 92
11	Trout Creek Lookout Tower	Aermotor	1933
12	Walker Mountain Lookout Cabin	Cabin	1917
13	Walker Mountain Lookout Tower	L-4	1932/33
14	Alder Springs	Crow's Nest	1935

ALDER SPRINGS

Alder Springs Crow's Nest, 2006 Ron Kemnow
photo. Oregonlookouts.weebly.com

Alder Springs Crow's Nest, 2006
Ron Kemnow photo.
Oregonlookouts.weebly.com

Year Built:	1935
Ranger District:	Sisters
Lat/ Long:	43.3052/ -121.7170001
Access:	**No**
Current Use:	**Inactive**
NRHP Status:	Unevaluated

About: The Alder Springs Lookout tree was first constructed in 1935 in a 90-foot pine tree with a 6-foot platform with a 3-foot-high railing. The nest was accessed by a 53-foot ladder to the lower branches and then the watchman scaled the remaining distance. A fire-finding device was placed on the topped pine. The watchman had a tent camp at Prairie Farm Guard Station and would travel to the lookout daily. The crow's nest is located southwest of Alder Springs (oregonlookouts.weebly.com). It is accessible via a short hike off Alder Springs road.

Partners:	Unknown
Deferred Maintenance:	$0
Replacement Value:	$0

WALKER MOUNTAIN LOOKOUT CABIN

Walker Mountain Lookout Cabin

Year Built:	1917
Ranger District:	Crescent
Lat/ Long:	43.3052/ -121.7170001
Access:	Road
Current Use:	Inactive
NRHP Status:	Eligible

About: 1 of 4 original permanent lookout stations on the forest, this 8' x 12' original 1917 stone and wood cabin is the oldest administrative structure on forest. The cabin has a, "shake gable roof, native stone walls, board and batten or cedar planks at the gable ends, a multi-pane window in each wall, five-panel door in the front facing gable with a shed porch roof supported by four log columns, native stone exterior chimney on rear gable, plastered interior walls, and exposed log rafters (no finished ceiling). A garage and L-4 tower were added to the site in the early 1930s" (Atwood, 2004: 57). This peak was first monitored as early as 1907 and a crow's nest was established in a nearby tree. In 1919, a pole tower was erected and was approximately 25 feet tall with a small 6x6 windowless cab. The road to the summit was constructed in 1932 and a new steel L-4 tower was erected the following year. The stone cabin served as living quarters for the watchmen and was restored in 2005.

Partners:	Unknown
Deferred Maintenance:	$79,154.00
Replacement Value:	$79,154.00

BLACK BUTTE LOOKOUT (06010500251)

Black Butte D-6 Cupola

Year Built:	1922
Ranger District:	Sisters
Lat/ Long:	44.40001/ -121.6365
Access:	Trail
Current Use:	Inactive
NRHP Status:	Listed

About: Originally a crow's nest with a tent camp, this D-6 cupola replaced the crow's nest in 1922 and was in-use well into the 1990's. The lookout unfortunately has limited visibility so an 82-foot-tall wooden tower with a 7x7 observation-only cab was constructed on the butte in 1934[38]. The D-6 served as ground quarters for watchmen when the tower was originally constructed. A log cabin was constructed in 1980[39] to be replacement ground quarters and work began on a new 65-foot-tall treated-timber tower in 1994. According to the World-Wide Lookout Library (WWLL), "All structures remained on the summit, making this one of the most unique on-site historic collections of lookouts anywhere" (Rex Kamastra). The D-6 is currently inactive, and a yurt is used as sleeping quarters for the watchmen. The structures on Black Butte are a popular and scenic hiking destination in the summer months.

Partners:	Friends of Black Butte Lookout
Deferred Maintenance:	$99,220.73
Replacement Value:	$253,262.40

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[38] The wooden tower was condemned in 1990 and collapsed in 2002 during a winter storm.
[39] The log cabin was condemned in 2014 and was burned down in November of 2016.

ROUND MOUNTAIN LOOKOUT TOWER (06010100592)

Round Mountain circa 1933
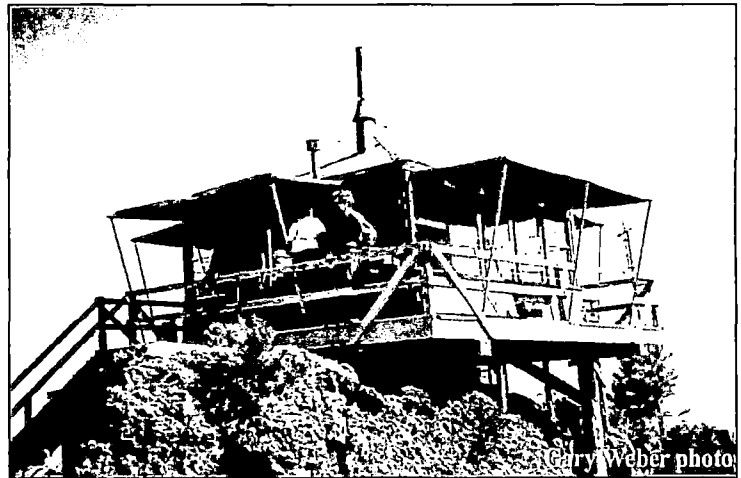
Round Mountain Lookout

Year Built:	1933/34
Ranger District:	Bend
Lat/ Long:	43.7575/ -121.7102
Access:	Road
Current Use:	Fire Detection
NRHP Status:	Unevaluated

About: The Round Mountain Lookout Tower is an L-4 hipped with a catwalk on a 10-foot wooden platform and foundation. The lookout received minor alterations in the 1950's. The lookout is located on Black Lava Knoll and is staffed for fire detection from May to September.

Partners:	Unknown
Deferred Maintenance:	$69,014.76
Replacement Value:	$79,570.60

WALKER MOUNTAIN LOOKOUT TOWER (06010200001)

Walker Mountain L-4

Year Built:	1932/33
Ranger District:	Crescent
Lat/ Long:	43.3052/ -121.7170001
Access:	Road
Current Use:	**Inactive**
NRHP Status:	Unevaluated

About: This 35-foot steel L-4 hip lookout tower was completed in 1933; a year after the road to the summit was completed. Walker mountain was established as a lookout patrol point as early as 1907. A crow's nest was constructed in a nearby tree in 1913 and the Walker Mountain Lookout cabin was erected in 1917. The lookout has not been active since 1987 and is considered excess and is slated for decommissioning due to major health and safety hazards.

Partners:	Unknown
Deferred Maintenance:	$57,290.83
Replacement Value:	$57,290.83

FOX BUTTE GROUND HOUSE
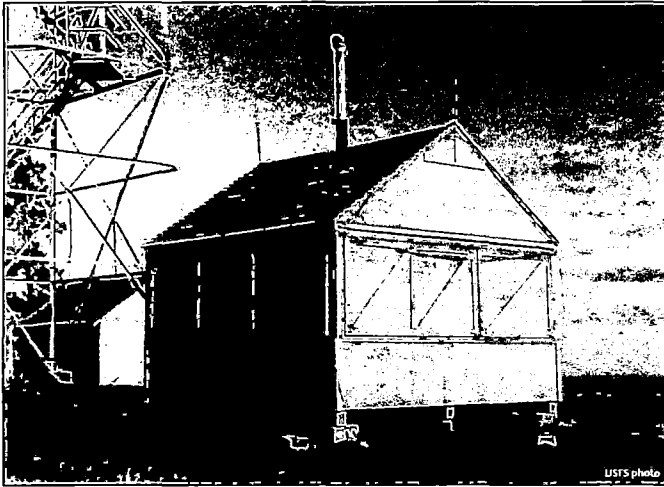
Fox Butte L-4 Gable ground house circa 1948
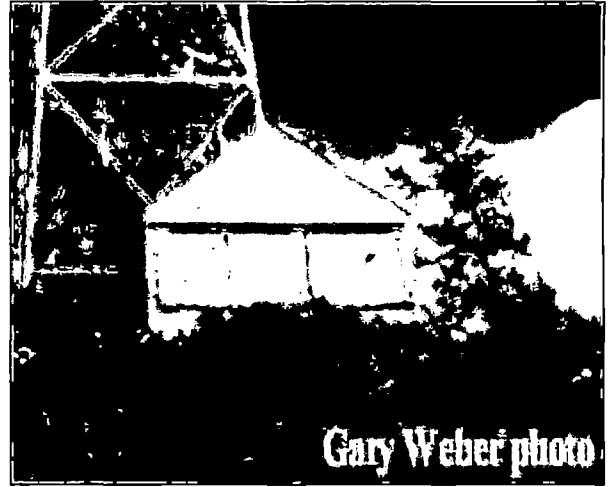
Fox Butte ground house

Year Built: 1931
Ranger District: Fort Rock
Lat/ Long: 43.6106/ -120.8427
Access: Road
Current Use: **Inactive**
NRHP Status: Unevaluated

About: This L-4 gable-roof ground cabin was originally built in 1931 on Sixteen Butte and was moved to Fox Butte in 1948. Fox Butte has a long history of fire detection, beginning with a heliograph on the western aspect of the butte in 1919. A telephone line was established the following year from the western aspect to the Cabin Lake Ranger Station. A D-6 cupola was constructed in 1924 and unfortunately burned down in August 1926 from a wildfire. An 80-foot-tall steel Aermotor lookout tower was placed on the eastern aspect of Fox Butte circa 1933 and the ground house was moved from Sixteen Butte to serve as living quarters for the watchmen in 1948. The lookout has not been used since 1993 and is considered excess.

Partners: Unknown
Deferred Maintenance: $35,923.27
Replacement Value: $35,923.27

FOX BUTTE LOOKOUT TOWER (06010301601)
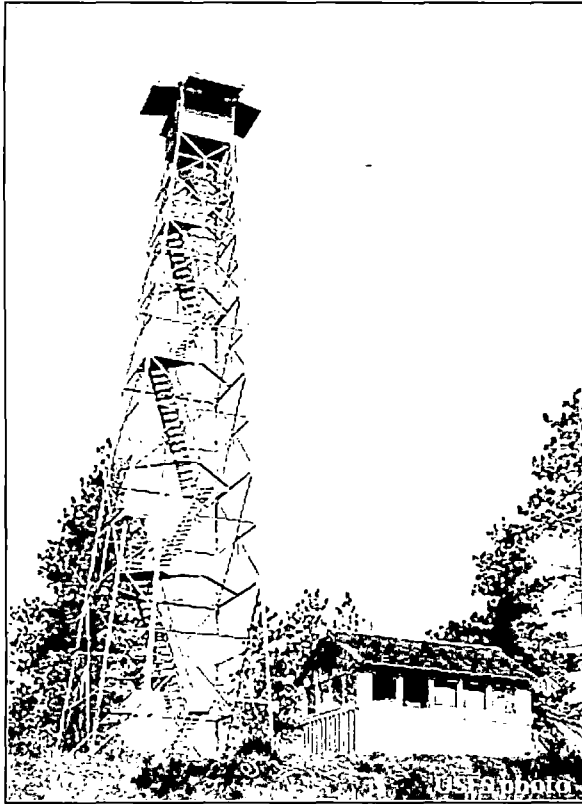
Fox Butte circa 1937
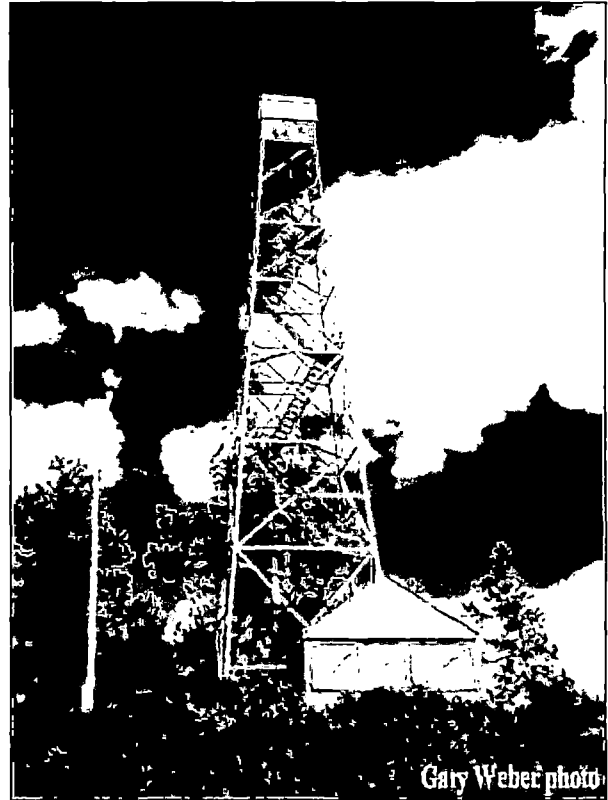
Fox Butte Lookout Tower and Ground house

Year Built:	1933
Ranger District:	Fort Rock
Lat/ Long:	43.6106/ -120.8427
Access:	Road
Current Use:	**Inactive**
NRHP Status:	Unevaluated

About: This Aermotor lookout tower is 80-feet-tall with a 7' x 7' observation-only cab. The Aermotor tower is steel braced and was built on the eastern aspect of the butte in 1933.

The ground house was brought to the eastern aspect from Sixteen Butte that same year (see Fox Butte Ground House above). The tower has not been used since the mid 1990's and is considered excess.

Partners:	Unknown
Deferred Maintenance:	$25,989.94
Replacement Value:	$25,989.94

TROUT CREEK LOOKOUT TOWER

Trout Creek Lookout Tower

Year Built: 1933
Ranger District: Sisters
Lat/ Long: 44.24095/ -121.67143
Access: Trail
Current Use: **Inactive**
NRHP Status: Unevaluated

About: The Trout Creek Lookout tower is an 86-foot-tall steel braced Aermotor tower. The tower was abandoned in the 1970's and all of the secondary structures were burned by FS staff. The tower is considered excess and is slated for decommissioning.

Partners: Unknown
Deferred Maintenance: $25,462.59
Replacement Value: $25,462.59

BLACK BUTTE LOOKOUT

Black Butte Lookout

Black Butte Lookout Complex, R-6 tower in background

Year Built: 1994/1995
Ranger District: Sisters
Lat/ Long: 44.40001/ -121.6365
Access: Trail
Current Use: Fire Detection
NRHP Status: Modern, unevaluated

About: The Black Butte R-6 lookout tower is a 65-foot-tall pole tower with a 10x10'cab and replaced the original 1934 timber tower in 1995. The original treated timber tower was 82-foot-tall with an 8x8 foot cab. It was condemned in the 1990's and unfortunately, the timber tower collapsed in 2001 during a winter storm and fire staff burned the remnants in 2016. The newer 1995 R-6 pole tower is staffed by fire from May to September.

Partners: Friends of Black Butte Lookout
Deferred Maintenance: $52,537.71
Replacement Value: $53,040.70

ODELL BUTTE

Odell Butte L-4 Lookout Tower circa 1933
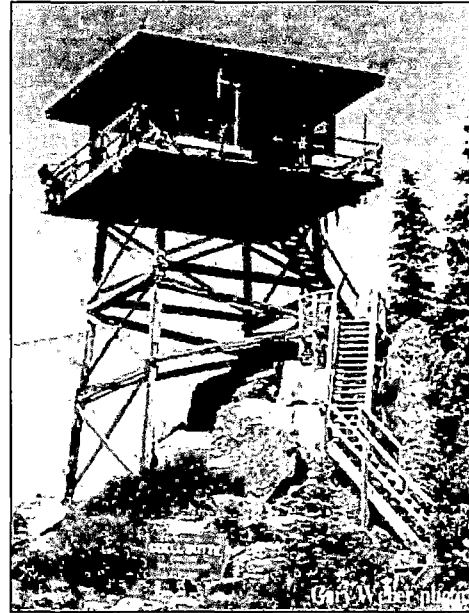
Odell Butte R-6 Lookout Tower

Year Built: 1961/ 63
Ranger District: Crescent
Lat/ Long: 43.4706/ -121.8640001
Access: Road
Current Use: Fire Detection and Communication Site
NRHP Status: Unevaluated

About: Odell Butte boasts to be the longest active lookout site on the Deschutes and is still currently used for wildfire detection. Originally patrolled as early as 1907, the first structure on the butte was a 12' x 12' frame cabin atop a log crib and was used in emergencies until it was replaced by a 20-foot-tall L-4 in 1932. The L-4 was replaced circa 1961 with the current R-6 flat with a catwalk. The R-6 was placed on a 30-foot-tall treated timber tower and it is still in active service. The lookout is unevaluated and is not in the SHPO database.

Partners: Unknown
Deferred Maintenance: $18,866.09
Replacement Value: $38,203.06

GREEN RIDGE LOOKOUT TOWER

Dominic Leubbers photo

Green Ridge Lookout Tower

Year Built: 1961/ 63
Ranger District: Sisters
Lat/ Long: 44.5361/ -121.6054
Access: Road
Current Use: Recreation Rental and Fire Detection
NRHP Status: Unevaluated

About: This R-6 flattop cab with a catwalk is situated on a 21-foot-tall timber tower. The site was originally developed in 1934 with a 10-foot by 10-foot L-5 cab and was used for emergencies. The R-6 replaced the L-5 in the early 1960's and is regularly staffed in the summer months (July through August) by volunteers. The lookout is available to rent in the winter. The lookout is unevaluated and not in the SHPO database.

Partners: Volunteers
Deferred Maintenance: $74,072.13
Replacement Value: $77,979.19

OCTAGON

SPRING BUTTE LOOKOUT TOWER (06010301041)

Spring Ridge circa 1955

Spring Butte Octagon

Year Built:	1991/ 92
Ranger District:	Fort Rock
Lat/ Long:	43.5233/ -121.3481
Access:	Road
Current Use:	Fire Detection
NRHP Status:	Unevaluated

About: The site on Spring Ridge was originally established in 1932 with an L-4 cab on a 30-foot-tall tower. In 1991, the forest constructed a 41-foot-tall angled pole tower with a 16' by 16' cab with a catwalk. The pole tower is made of treated Douglas Fir and is staffed for fire detection from May to September.

Partners:	Unknown
Deferred Maintenance:	$16,148.09
Replacement Value:	$58,365.78

LAVA BUTTE LOOKOUT TOWER & OBSERVATORY (6010301818)

Lava Butte c. 2013

Year Built: 1998
Ranger District: Bend
Lat/ Long: 43.9176/ -121.3561
Access: Road
Current Use: Fire Detection, Museum and Interpretive Center
NRHP Status: Unevaluated

About: This site has had many alterations (see photos on following page) and boasts the highest number of reported fires. Located on a lava cone, Lava Butte was originally developed in 1932 with an L-4 gable. The lookout was replaced with an R-6 Flat cab in 1957 and the lower level was developed into a visitor's center in 1960.

In 1997, the structure was rebuilt with a 2-story L-4 gable replica that mimics the original L-4 on the site. The lower level is still used as a museum and interpretive center and the upper level is staffed by fire from May to September.

Partners: Unknown
Deferred Maintenance: $119,242.22
Replacement Value: $129,996.51

EVOLUTION OF A PATROL POINT:
LAVA BUTTE
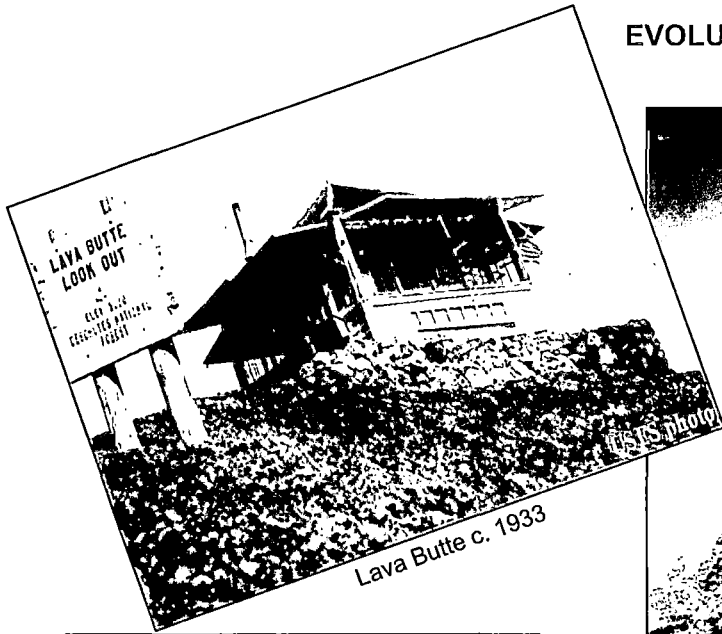
Lava Butte c. 1933

Lava Butte c. 1948
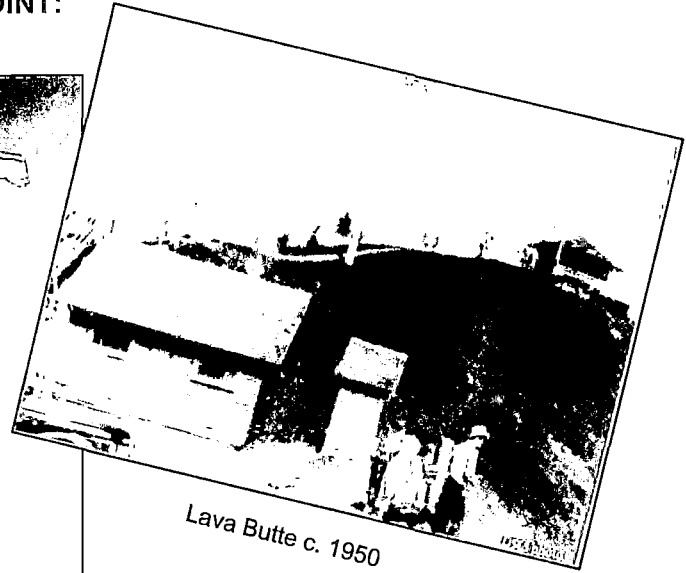
Lava Butte c. 1950
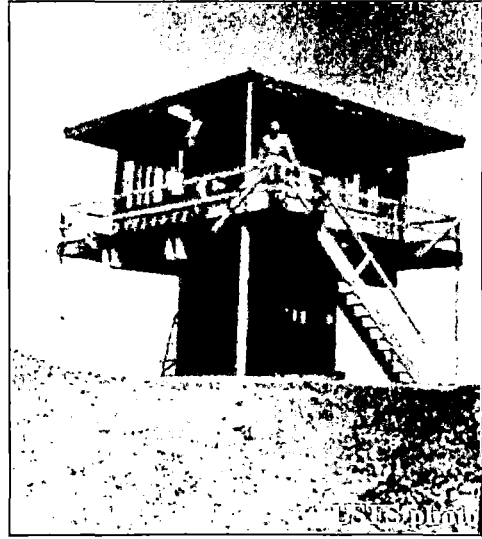
Lava Butte c. 1959
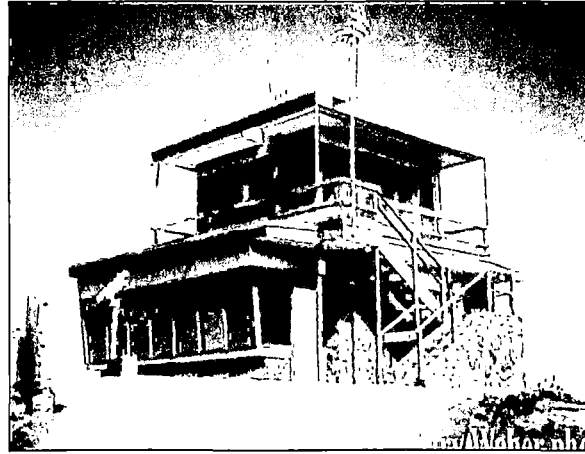
Lava Butte c. 1960
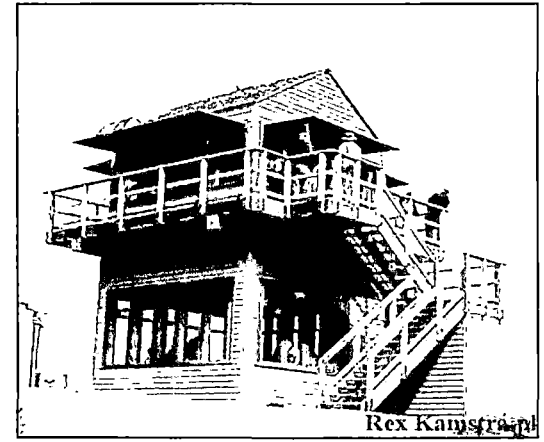
Lava Butte c. 1999

EAST BUTTE LOOKOUT TOWER - REPLICA (06010301043)

Original 30' Lookout Tower circa 1933

20' Replica Lookout Tower

Year Built: 1995
Ranger District: Fort Rock
Lat/ Long: 43.6665/ -120.9959
Access: Road
Current Use: Fire Detection
NRHP Status: Modern, unevaluated

About: This 20-foot-tall L-4 wooden pole tower with a gable roof is a replica of the original 1932 30-foot-tall L-4 on East Butte (see photo left). The Forest Service replaced the original in 1995 and it is still in active use for wildfire detection from May to September.

Partners: Unknown
Deferred Maintenance: $48,142.09
Replacement Value: $83,549.13

#	NAME	STYLE	YEAR
1	Horsefly Mountain	R-6	1962
2	Spodue	R-6	1964
3	Lookout Rock	R-6	1962
4	Dog Mountain	LO House	1997
5	Drakes Peak	L-4	1948
6	Morgan Butte	R-6	1964
7	Bald (Ingram) Butte	L-4 Gable	1931
8	Hager Mountain Lookout	R-6	1967
9	Bald Mountain	L-4	1941
10	Sugarpine Mountain	CL-100	1970
11	Calimus Butte	Cathedral	1920
12	Pelican Butte	CL-100	1986

CALIMUS BUTTE LOOKOUT (06021201218)

Calimus Butte Cathedral in 1920's

Calimus Butte Lookout

Year Built:	1920
Ranger District:	Chiloquin
Lat/ Long:	42.6317/ -121.559317
Access:	Road
Current Use:	Fire Detection
NRHP Status:	Eligible

About: Calimus Butte originally served as a patrol point in 1919 and a 16'x16' cabin with 12'x12' cupola was built in 1920 a couple hundred feet from the north summit. A 14'x20' cupola cabin was replaced by present cupola cabin in 1930 and has been used as an active fire lookout every year since 1931. In 1932, this area saw heavy fire activity and even had "four crank-type phone lines converging on the lookout" (NHLR). The Klamath Indian Agency operated the lookout until a couple years prior to the Termination act of 1961 when the Klamath District of the Oregon Department of Forestry took over management of the lookout. This parcel of forest was sold to the Winema NF in the mid 1970's and now the Fremont-Winema retains ownership and management of this lookout.

Partners:	Bureau of Indian Affairs, Oregon Department of Forestry (ODF)
Deferred Maintenance:	$20,107.79
Replacement Value:	$69,472.24

DRAKES PEAK LOOKOUT (06020200803)
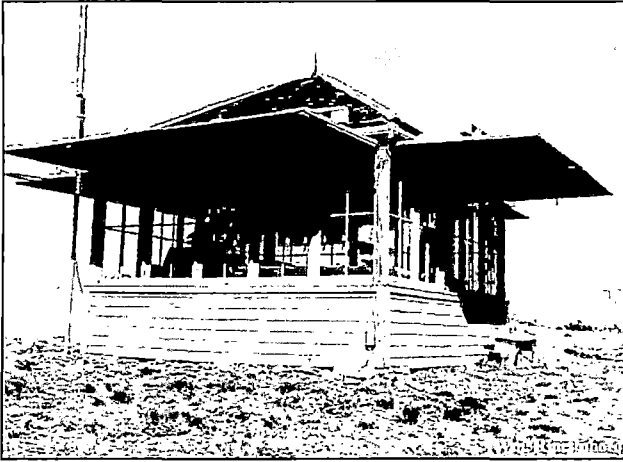
Drake Peak Lookout c.1959
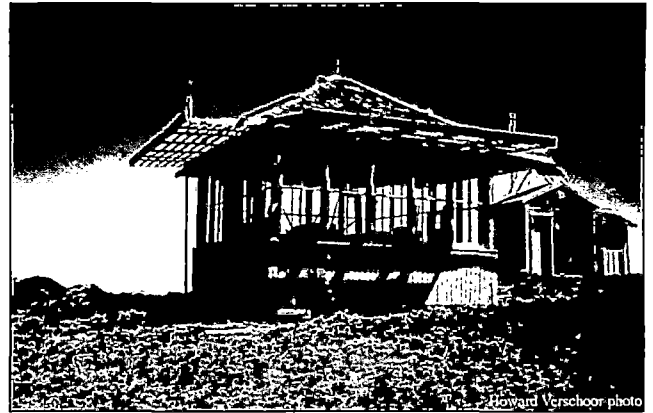
Drake Peak Lookout and outbuildings

Year Built:	1948
Ranger District:	Lakeview
Lat/ Long:	42.3005417/ -120.12333
Access:	Road
Current Use:	Recreation Rental
NRHP Status:	Eligible

About: Drake peak is the highest elevated lookout with road access in Oregon[40]. According to the NHLR, this peak was a patrol point around the turn of the century and had fire-finding instruments established by 1915. The site was originally developed in 1926 with a D-6 cupola and a road was constructed in 1927. In 1948, a replacement L-4 Aladdin ground house was erected next to the D-6 for $3,451.47.

This lookout was determined eligible for inclusion on the NRHP in 2016 but it is not in the Oregon SHPO database. The 2008 RSFMP reduced the operating season from May 15 to November 15 and sought to increase the recreation fee to accommodate routine maintenance.

Partners:	Unknown
Deferred Maintenance:	$56,931.88
Replacement Value:	$54,943.82

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[40] Elevation is 8,352 feet.

BALD (INGRAM) BUTTE (06020300348)
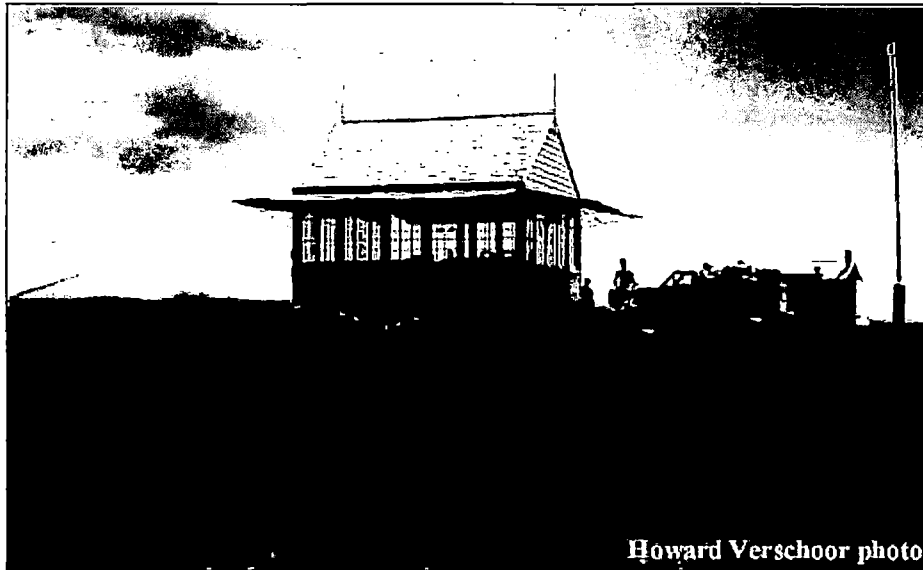
Bald Butte Lookout

Year Built: 1931
Ranger District: Paisley
Lat/ Long: 42.61425/ -120.789569
Access: Road
Current Use: Recreation Rental
NRHP Status: Eligible

About: Located at an elevation of 7,536 feet, this 14'x14' L-4 Gable cab was constructed in 1931 and then vandalized in the 1990's. The lookout was restored in 1993/94 during a Passport in Time (PIT) project. According to the NHLR, "in 1945 the observer found a Japanese incendiary balloon near the summit with five unexploded bombs intact."

The lookout is only staffed during emergencies and was placed on the recreation rental program in 1995. The 2008 RSFMP reduced the operating season from June 1 to September 15 and sought to increase the recreation fee to accommodate routine maintenance.

Partners: Unknown
Deferred Maintenance: $20,004.00
Replacement Value: $53,623.06

BALD MOUNTAIN LOOKOUT (06020400616)

Bald Mountain c. 1997

Year Built: 1941
Ranger District: Silver Lake
Lat/ Long: 43.2746111/ -121.355156
Access: Road
Current Use: Fire Detection
NRHP Status: Eligible

About: Originally, Bald Mountain was a patrol point and according to the NHLR, "A telephone line was strung from the Oatman Ranger Station to Bald Mountain in 1917...[and] fire-finding equipment was established at the site in 1918." In 1928, a rare 12'x12' Aermotor live-in cab was established on the site and only a few were ever constructed. In 1932, a 20' wooden L-4 treated timber tower replaced the Aermotor and in 1941, the Fremont NF built the present L-4 with a hipped roof and a catwalk on a 29' 6" treated timber tower. There are stone walls and landscaping paths leading to site and flagpole. The Bald mountain lookout has been evaluated as eligible for inclusion in the NRHP however, it is not currently listed in the Oregon SHPO database.

Partners: Walker Range Patrol
Deferred Maintenance: $59,434.43
Replacement Value: $59,434.43

HORSEFLY MOUNTAIN (06020101219)

Horsefly Mountain Lookout c. 1948
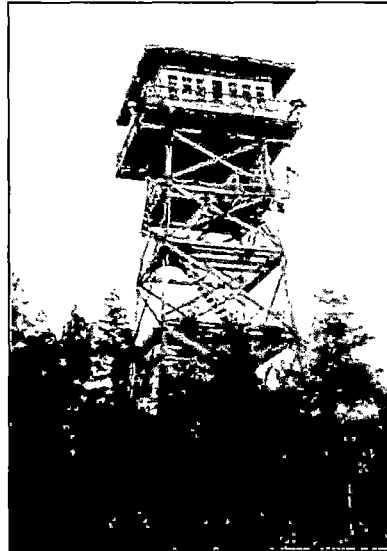
Horsefly Mountain Lookout c.2002

Year Built:	1962
Ranger District:	Bly
Lat/ Long:	42.2639889/ -121.048947
Access:	Road
Current Use:	Fire Detection
NRHP Status:	Eligible

About: Horsefly Mountain lookout is located on the northern aspect of horsefly mountain on the eastside of the Cascade mountain range. This lookout is a 41' treated timber tower with a R-6 flattop cab and catwalk established in 1962. The original lookout tower on Horsefly mountain was on the southern aspect and was constructed of sawn timbers and planks. The Northern aspect was developed in 1934 with an L-4 on a wooden trestle-type lookout tower.

Horsefly Mountain lookout is currently staffed for fire detection after years of being inactive. The lookout was determined eligible for inclusion in the NRHP however, it is not listed in the Oregon SHPO database.

Partners:	Unknown
Deferred Maintenance:	$0
Replacement Value:	$59,434.43

SPODUE LOOKOUT (06020101123)

Spodue Lookout c.2004

Year Built: 1964
Ranger District: Bly
Lat/ Long: 42.5931972/ -121.269083
Access: Road
Current Use: Fire Detection
NRHP Status: Eligible

About: The Spodue Lookout is a 41 ft treated timber tower with a 15'x15' R-6 flattop live-in cab and catwalk. According to the NHLR, the lookout is sometimes called the Black Hills Lookout. Spodue first went into service in 1965 and remains in active use for fire detection.

The Spodue lookout was determined eligible for inclusion in the NRHP in 2016 but is not in the Oregon SHPO database.

Partners: Unknown
Deferred Maintenance: $928.04
Replacement Value: $59,434.43

LOOKOUT ROCK (06020101220)

Lookout Rock Lookout

Year Built:	1962
Ranger District:	Bly
Lat/ Long:	42.4626361/ -120.801494
Access:	Trail
Current Use:	Inactive
NRHP Status:	Eligible

About: Lookout Rock was originally developed with a crow's nest sometime in the 1920's. An L-4 was established in 1932 on a 20' wooden tower. The L-4 was replaced in 1962 with a 14' x 14' R-6 flattop with catwalk on a 20' wooden tower. According to the NHLR, the R-6 was placed on standby status in 1968 and remains inactive.

The Lookout Rock Lookout was determined eligible for inclusion in the NRHP and it is not in the Oregon SHPO database.

Partners:	Unknown
Deferred Maintenance:	$20,305.93
Replacement Value:	$59,434.43

MORGAN BUTTE (06020300649)

Morgan Butte Lookout, NHLR

Year Built:	1964
Ranger District:	Paisley
Lat/ Long:	42.5401861/ -120.543936
Access:	Road
Current Use:	Fire Detection
NRHP Status:	Eligible

About: Morgan Butte was established in 1964 with a R-6 flattop cab and catwalk. The hipped roof was added in 1985 and the cab was rehabbed. According to the NHLR, "The Round Pass site became an OMNI radar site and all duties were moved to Morgan Butte a short distance to the north."

Morgan Butte lookout was determined eligible for inclusion in the NRHP in 2016 however, it is not in the Oregon SHPO database.

Partners:	Unknown
Deferred Maintenance:	$2,840.68
Replacement Value:	$59,434.43

HAGER MOUNTAIN (06020400706)

Hager Mountain c.1912
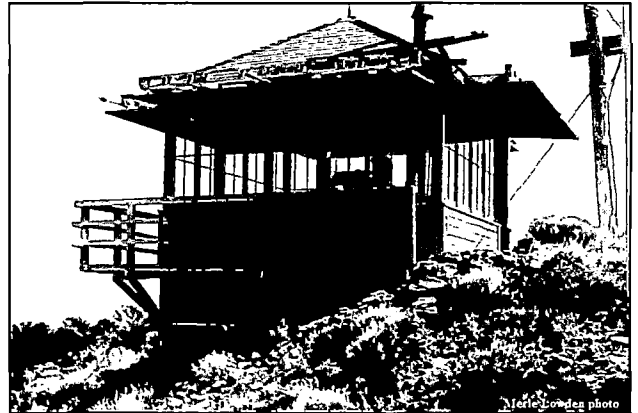
Hager Mountain Lookout c.1945

Hager Mountain Lookout c.1998

Year Built:	1967
Ranger District:	Silver Lake
Lat/ Long:	43.0088167/ -121.031736
Access:	Trail
Current Use:	Recreation Rental
NRHP Status:	Ineligible

About: Hager Mountain was originally established with an Octagon in 1912. An L-4 hip replaced the octagon in 1938. In 1967, an R-6 replaced the L-4 and in 1992, the flat roof was replaced with a hip. This R-6 is a recreation rental in the winter months from November 15th to May 15th. The RSFMP in 2008 increased the operating season from May 15th to November 15th and sought to increase the recreation fee at the site.

The Hager Mountain lookout was determined ineligible for inclusion in the NRHP and it is not currently in the Oregon SHPO database.

Partners:	Unknown
Deferred Maintenance:	$8,961.19
Replacement Value:	$62,075.96

SUGARPINE MOUNTAIN (06021100323)
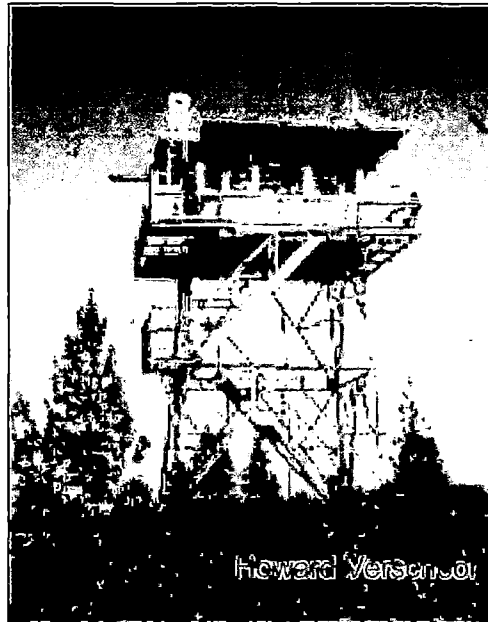
Sugarpine Mountain Lookout

Year Built: 1970
Ranger District: Chemult
Lat/ Long: 43.2258445/ -121.788492
Access: Road
Current Use: Fire Detection
NRHP Status: Unevaluated

About: The Sugarpine Mountain lookout is CL-100 cab on a 20' K-brace steel tower, and it is currently used for fire detection. Sugarpine Mountain was first used as a rag camp sometime in the 1930's. The first permanent tower was airlifted to the summit and erected in 1970—the cab and tower date to 1958 out of Fort Klamath.

Sugarpine Mountain lookout remains unevaluated for inclusion in the NRHP and it is not currently in the Oregon SHPO database.

Partners: Unknown
Deferred Maintenance: $26,920.21
Replacement Value: $47,223.22

PELICAN BUTTE LOOKOUT (06021300134)
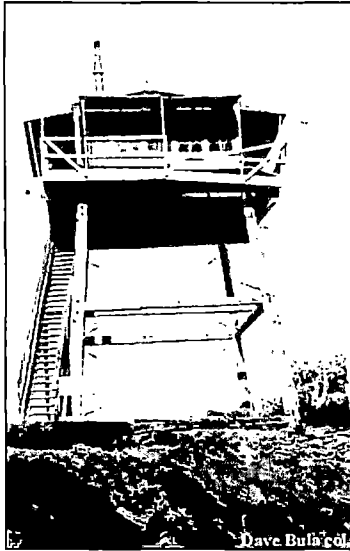
Pelican Butte Lookout c.1952

Pelican Butte Lookout c.1954
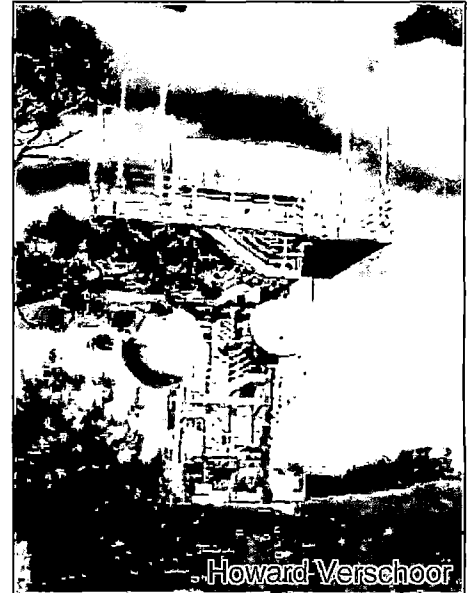
Pelican Butte Lookout

Year Built:	1986
Ranger District:	Klamath
Lat/ Long:	42.51332/ -122.14575
Access:	Road
Current Use:	**Communication Site (Relay Station)**
NRHP Status:	Modern, unevaluated

About: The Pelican Butte lookout was originally established in 1954 with a L-4 on a treated timber tower. In 1966, the L-4 was replaced with a R-6 cab with a catwalk on a 20-foot treated timber tower. In 1986, a cable company received a Special Use Permit to use the mountaintop as a relay station and according to the NHLR, they "proffered the present metal 10'x10' cab on a 20' metal tower as part of the bargain". The lookout is currently used by fire during high fire danger or emergency fire events.

Pelican Butte was voted "Oregon's Ugliest Lookout" by members of FFLA. It is unevaluated for inclusion in the NRHP and it is not listed in the Oregon SHPO database.

Partners:	Unknown
Deferred Maintenance:	Unknown
Replacement Value:	Unknown

DOG MOUNTAIN LOOKOUT

Dog Mountain Lookout c.1926
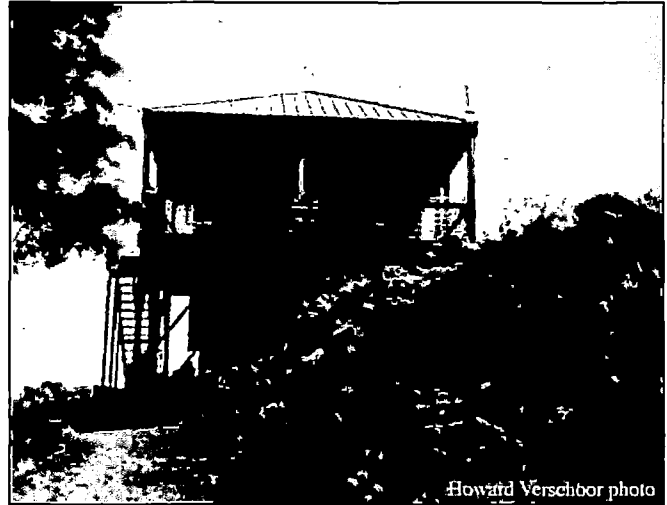
Dog Mountain Lookout

Year Built:	1997
Ranger District:	Lakeview
Lat/ Long:	43.1185528/ -120.717933
Access:	Road
Current Use:	Fire Detection
NRHP Status:	Modern, unevaluated

About: Dog Mountain was first used as a patrol point with an Alidade in the 1910's. During WWI, Bertha Covert (c.1918) was one of many women that staffed lookouts during the nationwide manpower shortage. A D-6 Cupola was established in 1926 and replaced in 1947 with an L-4 for "$2,700" (NHLR). A modern 15'x15' two-story lookout house was established onsite in 1997. According to NRM, the "slope of ground exceeds maximum incline".

Partners:	Unknown
Deferred Maintenance:	$1,940.29
Replacement Value:	$124,151.91

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#	NAME	STYLE	YEAR
1	Dry Soda	L-4	1941
2	Fall Mountain	L-4	1933
3	Flagtail Mountain	R-6	1933
4	Flagtail Lookout Tree	Crow Nest	1922
5	Indian Rock	R-6	1957
6	Black Butte	L-4	1936
7	Dixie Butte	R-6	1968
8	Calamity Butte	Octagon	2000
9	Calamity Lookout	L-4-AR Hall Special	1927
10	King Mountain	CL-100	1957/ 59
11	Sugarloaf	L-4 (Standard '36)	1948/ 49
12	West Myrtle Butte	Aermotor	1928/ 29
13	Bald Butte	R-6	1959
14	Snow Mountain	R-6	1961
15	Dry Mountain	Aermotor	1932
16	Antelope Mountain	R-6	1963
17	Fraizer Point	L-6	1936

CRAFT POINT

Craft Point 1993, Mark Swift photo, Oregonlookouts.weebly.com

Year Built: 1930
Ranger District: Burns
Lat/ Long: 43.77121 / - 118.73646
Access: Road
Current Use: Inactive
NRHP Status: Unknown

About:"Craft Point was established as a lookout post in 1930 when the present 15' pole observation tower was constructed. It likely served as an emergency detection point since the site was never upgraded and was promptly abandoned in the 1940's."Geocaching.com

Partners: Unknown
Deferred Maintenance: $0
Replacement Value: $0

FLAGTAIL MOUNTAIN LOOKOUT TREE

Flagtail Mountain Lookout Tree

Flagtail Mountain Lookout Tree c.2013

Year Built: 1922
Ranger District: Blue Mountain
Lat/ Long: 44.1477/ -119.4039
Access: Road
Current Use: **Inactive**
NRHP Status: Eligible

About: The Flagtail Mountain Lookout Tree Platform was originally established in 1922. An R-6 developed on-site in 1933 and the tree platform fell out of use.

Partners: Unknown
Deferred Maintenance: $0
Replacement Value: $0

AERMOTOR

WEST MYRTLE BUTTE (06040200672)
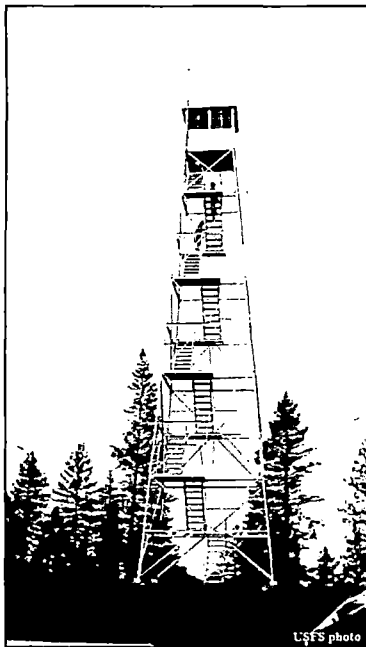
West Myrtle Butte Lookout c.1930
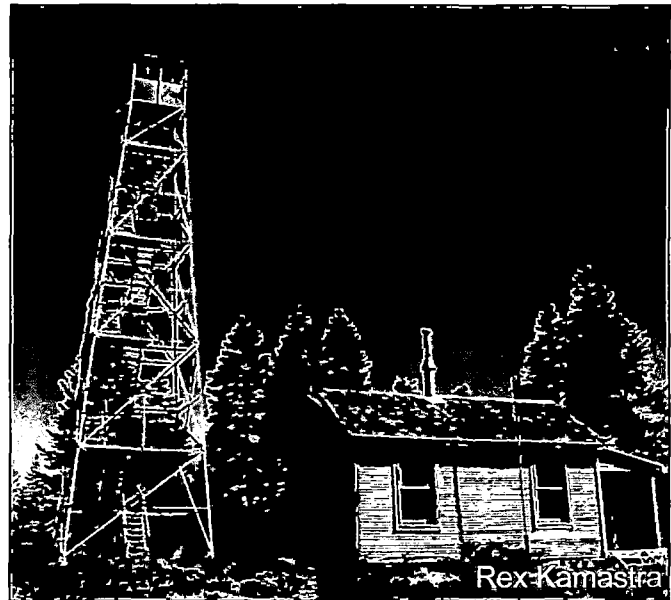
West Myrtle Butte Complex c.2010

Year Built:	1929
Ranger District:	Emigrant Creek
Lat/ Long:	43.9744445/ -119.160544
Access:	Road
Current Use:	Inactive, Emergency Fire
NRHP Status:	Eligible

About: The West Myrtle Butte Aermotor lookout is a 67-foot steel tower with a 7x7' metal cab. The ground quarters were never developed into a recreation rental due to lead based paint on exterior of building that was never abated. According to the FMP, 2017," The lookout is in poor condition with broken windows and vandalism to the structure. The other buildings at the site include two small bunkhouses and a pit toilet. All the buildings are in poor condition. There have been preliminary discussions to include the site in the recreation rental program. The cost to bring the buildings to a safe habitable standard will likely exceed $100,000" (RSFMP, 2017: 98).

Partners:	Unknown
Deferred Maintenance:	$10,740.89
Replacement Value:	$12,999.65

LOOSING A LOOKOUT AND SECONDARY STRUCTURES:
WEST MYRTLE

West Myrtle Bunkhouse, building 1017 (1929)
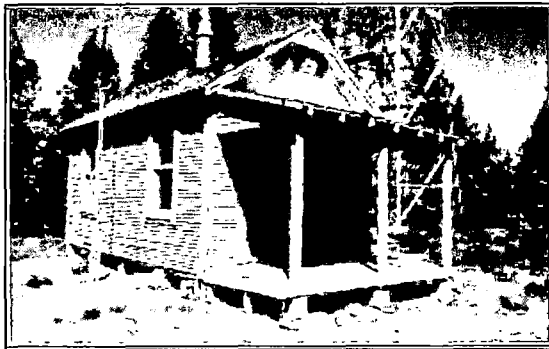
West Myrtle Bunkhouse, building 1511 (1929)
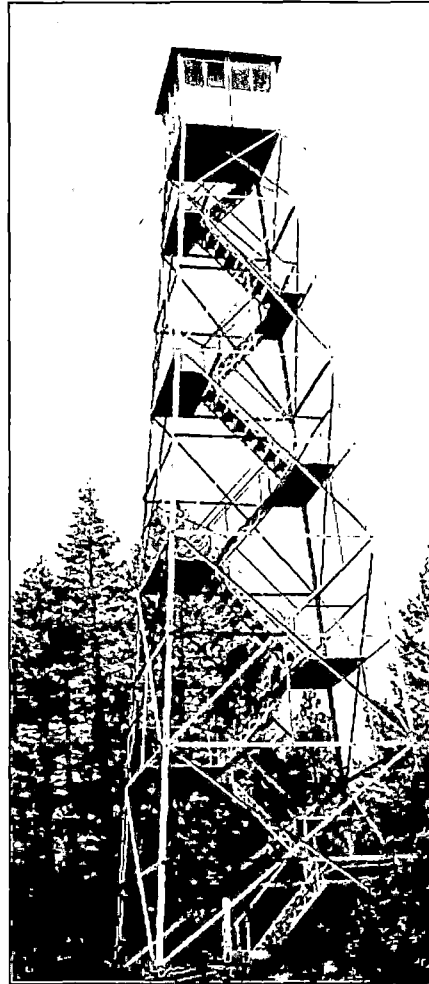
West Myrtle c. 2008, photo by Ron Kemnow

West Myrtle Outhouse, building 1731 (1950)

DRY MOUNTAIN (06040400003)
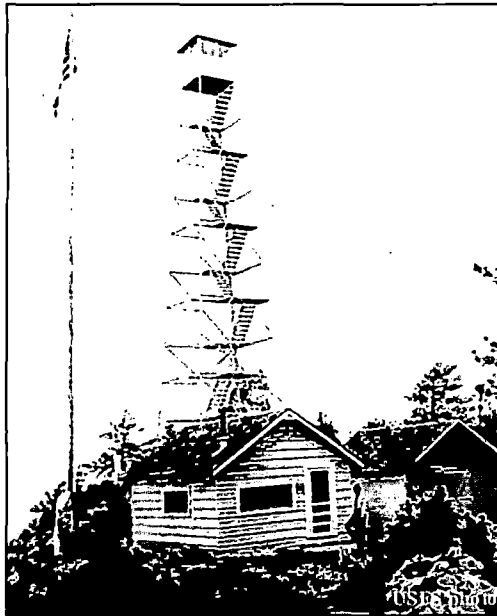
Dry Mountain Lookout c.1940
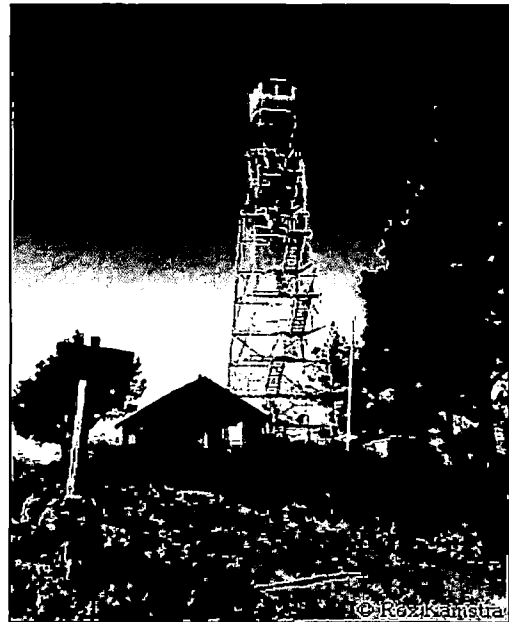
Dry Mountain Lookout c.1996

Year Built:	1932
Ranger District:	Emigrant Creek
Lat/ Long:	43.6708/ -119.5686
Access:	Road
Current Use:	Inactive
NRHP Status:	Eligible

About: The Dry Mountain Lookout is a 70-foot Aermotor tower with a 7'x7' metal cab. The lookout overlooks the Nevada/ Oregon border and is located a pivotal patrol point for high fire activity. This area gets high levels of fire activity because dry winds that flow northward and collide into the mountainous and forested regions of Oregon. The lookout has been inactive and is **planned to be decommissioned**—the stairs are deficient, and the guy wires are loose. The ground house cabin has been condemned since the early 2000's and has an infestation of rats.

There is also a 7'x8' metal communication building as well as a 4'x4' wooden toilet. The lookout is planned to be decommissioned through a salvage-based contract.

Partners:	BLM during high levels of fire activity
Deferred Maintenance:	$8,294.13
Replacement Value:	$12,999.65

CALAMITY BUTTE

Calamity Butte Lookout, photo c. 2017
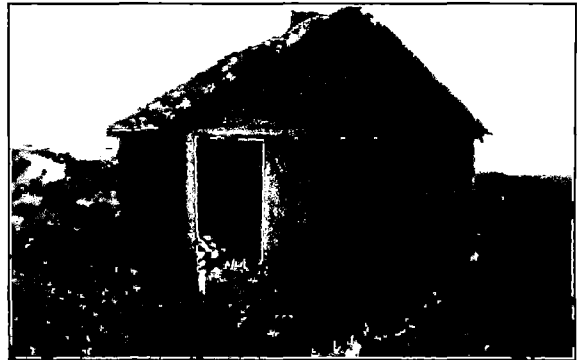
Calamity Butte Garage constructed in 1934. Building No. 1506.

Year Built: 1927
Ranger District: Emigrant Creek
Lat/ Long: 43.9286/ -118.8253
Access: Road
Current Use: **Inactive**
NRHP Status: Eligible

About: Calamity Butte houses two unique lookouts—one being an L-4-AR Supervisor Hall Special ground house (building No. 4003). The L-4-AR ground house is a 14'x14' wooden cab and was a Region 5 design/ California-model. There is a garage and wooden toilet also onsite. These secondary buildings as well as the lookout are eligible for inclusion in the NRHP and they are all in very poor condition. Construction of an Octagon onsite began in 1996 and is currently staffed by fire. The butte has been continually used for fire detection for over 65 years.

The FMP recommends the following for the maintenance of the site:
- Complete a structural inspection of the lookout and tower by a qualified structural engineer
- Complete an inspection of the lightning protection by a qualified contractor to ensure the safety of the system
- Replace the toilet building with a modern vault toilet
- Allow the garage and old lookout to "melt" into the ground by not investing scarce maintenance funds in either building" RSFMP, 2017: 84-85

Partners: Unknown
Deferred Maintenance: $51,998.60
Replacement Value: $51,998.60

DRY SODA (060401000758)
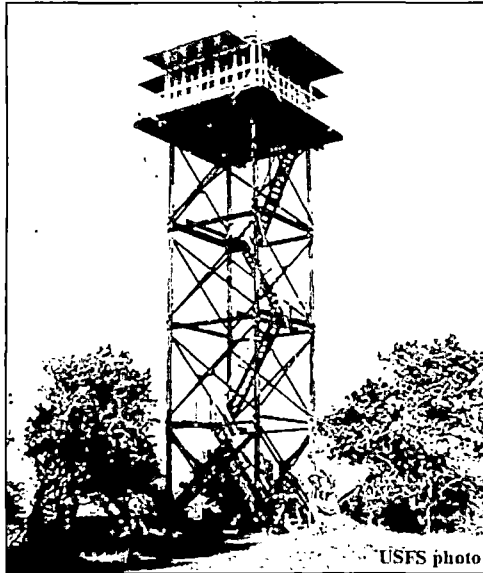
Dry Soda Lookout (date unknown)

Dry Soda Lookout

Year Built:	1941
Ranger District:	Blue Mountain
Lat/ Long:	44.20833333/ -118.90972222
Access:	Road
Current Use:	Fire Detection
NRHP Status:	Eligible

About: The Dry Soda lookout is a 14' x 14' L-4 cab with a hipped roof and catwalk on a USFS 60' CT-2 wooden tower. A Rappelling platform was added at 45-feet (date unknown) and is actively staffed in the summer for fire detection. There is an old wooden toilet circa 1941, a small storage shed, and a modern CXT toilet are also onsite. The lookout is in fair condition— the guy wires are loose, a few cross-bracing members are split, and several of the wooden steps are cracking. This site was determined eligible for inclusion in the NRHP in 2010.

The FMP recommends the following for the maintenance of the site:
- Complete a structural inspection of the lookout and tower by a qualified structural engineer
- Complete an inspection of the lightning protection by a qualified contractor to ensure the safety of the system
- Upgrade the propane system and tank
- Tighten the guy wires and repair any structure deficiencies
- Decommission the old toilet (#1724) in place by not investing any further maintenance funds in this building" FMP, 2017: 52-53

Partners:	Unknown
Deferred Maintenance:	$104,744.40
Replacement Value:	$104,744.40

FALL MOUNTAIN (06040101000)

Fall Mountain Lookout

Year Built:	1933
Ranger District:	Bear Valley
Lat/ Long:	44.2942/ -119.0425
Access:	Road
Current Use:	Recreation Rental
NRHP Status:	Eligible

About: The Fall Mountain Lookout is a 14'x14' L-4 cab and wooden catwalk in an 18ft pole tower. The tower structure was replaced in 1953 and it is currently available to rent from May to November.

The Fall Mountain Lookout was determined eligible for inclusion in the NRHP.

Partners:	ODOT and OSP
Deferred Maintenance:	$52,632.88
Replacement Value:	$53,157.78

BLACK BUTTE (06040305009)
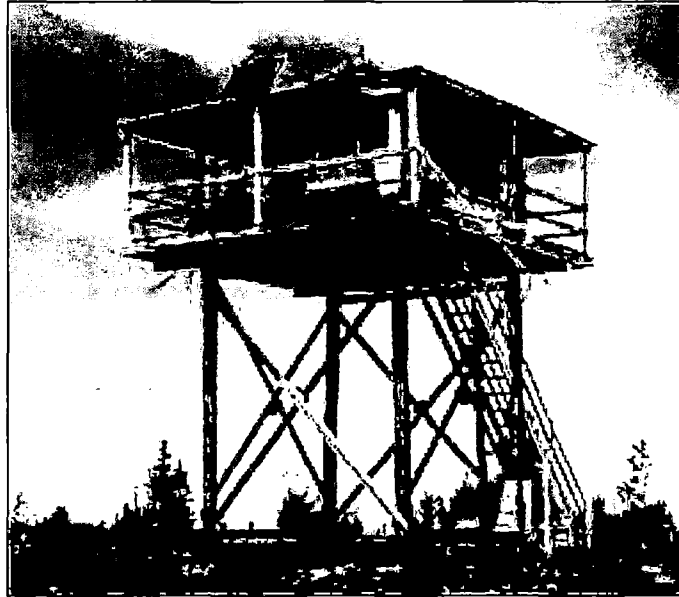
Black Butte Lookout

Year Built: 1936
Ranger District: Blue Mountain
Lat/ Long: 44.540001/ -119.1386
Access: Road
Current Use: Inactive, Emergency Fire
NRHP Status: Evaluated Ineligible
About: treated timber tower, emergency fire use, replaced in 1962, OSHPO, doe 2010. 20' tower. Orig. pole tower replaced with treated timber 1964 (NHLR date) and concrete piers were redone in 1994.

Partners: Unknown
Deferred Maintenance: $66,660.89
Replacement Value: $104,744.40

SUGARLOAF (06040200355)
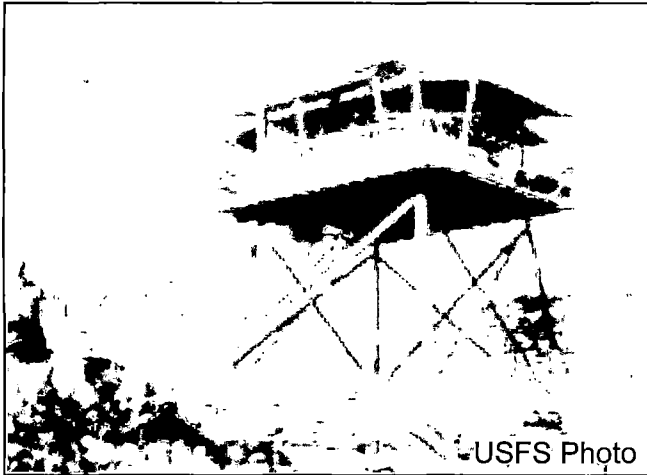
Sugarloaf Lookout c.1942
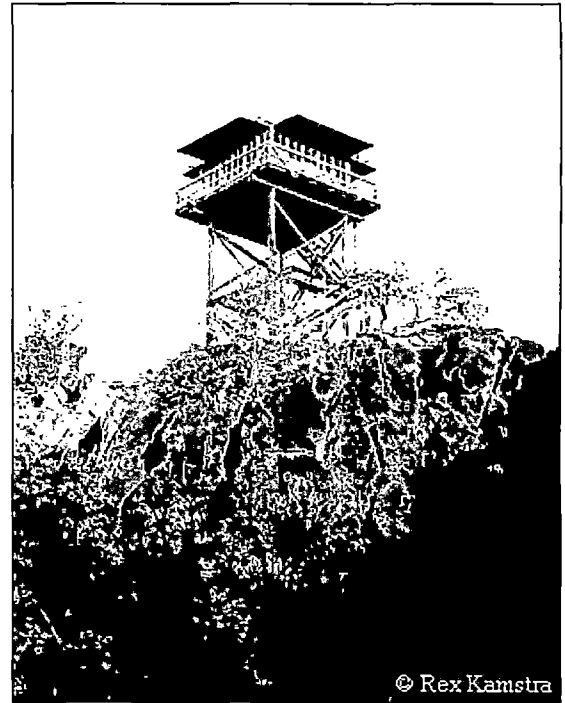
Sugarloaf Lookout c. 1997

Year Built:	1948/ 49
Ranger District:	Emigrant Creek
Lat/ Long:	43.9155556/ -119.2390439
Access:	Road
Current Use:	Fire Detection
NRHP Status:	Eligible

About: Sugarloaf lookout was originally established in 1932 with an L-4 cab on a 15-foot timber tower. This L-4 was replaced with the current L-4 cab on a 32-foot treated timber tower in 1948/49. The lookout is still staffed by fire from May to October. According to the 2017 FMP, "The lookout is in poor condition with split cross members, loose guy wires, loose railing and outdated propane system. A garage and vault toilet building are also on site. The garage has collapsed with only the roof framing standing. The toilet building needs the roof treated, a new door and painting."

Partners:	Unknown
Deferred Maintenance:	$10,095.83
Replacement Value:	$54,386.30

FLAGTAIL MOUNTAIN (06040105009)

Flagtail Mountain Lookout c.1942

Flagtail Mountain Lookout c.2010

Year Built:	1933
Ranger District:	Blue Mountain
Lat/ Long:	44.18611111/ -119.27972223
Access:	Road
Current Use:	Fire Detection
NRHP Status:	Eligible

About: Flagtail Mountain lookout is an 18-foot pole tower with a 14' x 14' L-4 cab and catwalk. The lookout was constructed on the Malheur in 1933 and moved to the site in 1966. The tower was replaced in 1953 and it was determined Eligible for inclusion in the NRHP in 2010. The lookout is currently staffed by fire, usually for four months during the summer. According to the 2017, FMP, "The lookout is in fair shape. The stairs and cab need to be painted. The guy wires are loose, and the propane system is substandard. There are two toilets at the site. A new CXT toilet was installed in 2010. The older wooden toilet was built in 1948. A garage built in 1934 is also located at the site. There appears to be asbestos tiles in the lookout cab floor.

Partners:	Unknown
Deferred Maintenance:	$40,643.01
Replacement Value:	$115,480.70

INDIAN ROCK (06040305004)
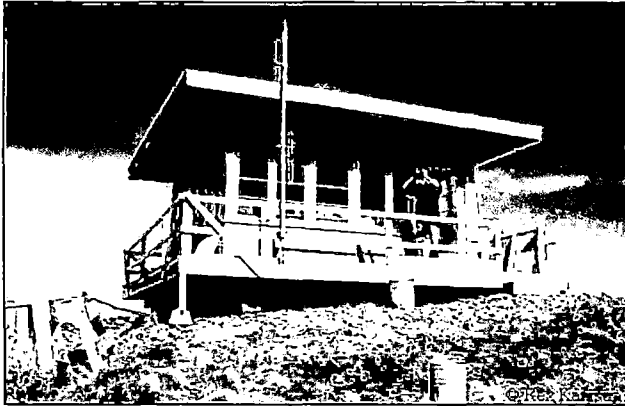
Indian Rock Lookout

Indian Rock Lookout c. 2017

Year Built: 1957
Ranger District: Blue Mountain
Lat/ Long: 44.75666667/ -118.69027777
Access: Trail
Current Use: Fire Detection
NRHP Status: Eligible

About: Indian Rock lookout was originally a cupola cabin established in 1929. The current R-6 flat cab with a catwalk replaced the cabin in 1957. The lookout has a pier block foundation and is staffed by fire during the summer months. According to the FMP, "The building is in poor condition. The guy wires and railing are loose. The building and the deck around the cab need painting and repairs. The flat roof should be replaced. The lightening protection system should be checked for continuity and reliability. The propane system and tank need to be upgraded. The quarter mile access trail up to the lookout is in poor condition and unsafe for walking and transporting supplies to the lookout. There is a Romtec toilet building on the site in fair condition. The toilet is a compost toilet that requires consistent and dedicated operator maintenance to function properly." The original toilet from 1957 has been removed and a composting toilet was been added to the site in 2004.

Indian Rock lookout was determined eligible for inclusion in the NRHP in 2010.

Partners: Unknown
Deferred Maintenance: $20,401.69
Replacement Value: $62,846.64

DIXIE BUTTE (06040300378)

Dixie Butte Lookout c.2010

Year Built: 1968
Ranger District: Blue Mountain
Lat/ Long: 44.58333334/ -118.62555556
Access: Road
Current Use: Fire Detection
NRHP Status: Eligible

About: Dixie Butte is a 15'x15' R-6 flattop ground house. A DOE was conducted in 2010 and found it to be eligible for inclusion in the National Register. According to the RSFMP, "The Dixie Butte lookout is a R-6 flat cab built in 1968. The lookout is staffed for about 4 months each fire season. The roof leaks and needs to be replaced. The guy wires need to be tightened. The lightning protection system should be checked for continuity and reliability. The propane system and tank need to be upgraded. There are two small toilets at the lookout site and the fiberglass toilet needs repairs. A communication building (#1617) at the site is a concrete block building in good shape. There is also a commercial communication building under special use on the site (RSFMP, 2017: 49-50)".

Partners: Unknown
Deferred Maintenance: $48,199.63
Replacement Value: $121,765.37

BALD BUTTE (06040400801)

Bald Butte (FMP, 2017: p.82)

Year Built:	1959
Ranger District:	Emigrant Creek
Lat/ Long:	43.6829/ -119.3678
Access:	Road
Current Use:	**Inactive**
NRHP Status:	**Evaluated Ineligible**

About: The R-6 cab with a catwalk is on a 41-foot treated timber tower and it is planned for decommissioning. The lookout was found to be condemned and major hazards need to be abated. The lookout was used during emergencies into the 1990s. According to the FMP, "The Bald Butte lookout is a R-6 flat cab on a 41-foot treated timber tower constructed in 1959. The lookout is not staffed and has not been used since the 1990's. Per discussion with fire staff with knowledge of the facility, the lookout has structural deficiencies and is condemned for safety reasons (FMP, 2017: 82)".

Partners:	Unknown
Deferred Maintenance:	$51,998.60
Replacement Value:	$51,998.60

SNOW MOUNTAIN (06040400798)
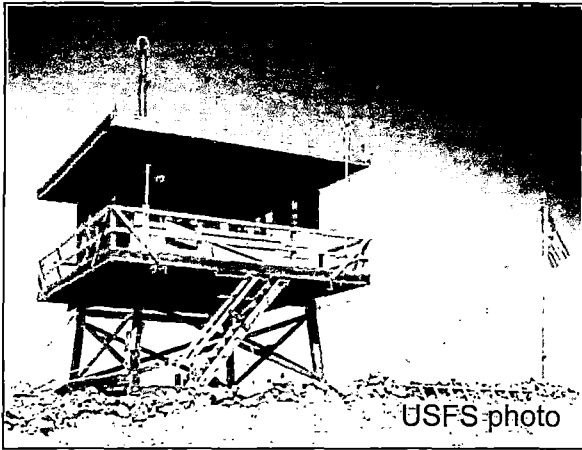
Snow Mountain Lookout c.1961
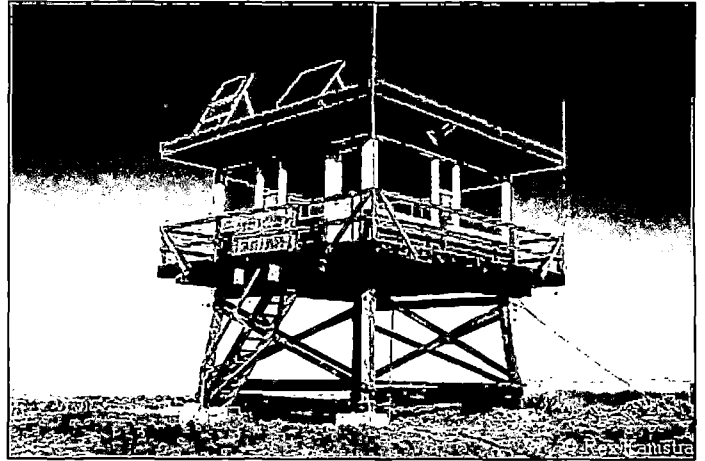
Snow Mountain Lookout c.1997

Year Built: 1961
Ranger District: Emigrant Creek
Lat/ Long: 43.9703/ -119.4964
Access: Road
Current Use: Fire Detection
NRHP Status: **Evaluated, Ineligible**

About: The lookout is a 14x14 ft R-6 cab with a catwalk on 10' treated timber tower and is currently used for fire detection. The R-6 cab was part of the Ochoco NF - Snow Mtn RD but when the districts combined in the late 1990's it became part of Emigrant Cr. RD. According to the FMP, "The Snow Mountain lookout is a R-6 flat cab on a 10-foot treated timber tower built in 1961. The lookout is staffed during fire season. The lookout has some deferred maintenance items including a leaking roof, loose railings, missing window screens, a crack in one footing, outdated propane system and need of painting. There are two other buildings at the site including a fiberglass communication building and a newer CXT toilet (not listed in the I-Web database)."

Partners: Unknown
Deferred Maintenance: $27,717.13
Replacement Value: $51,998.60

ANTELOPE MOUNTAIN (6040405016)

Antelope Mountain Lookout

Year Built: 1963
Ranger District: Emigrant Creek
Lat/ Long: 44.0425/ -118.4192
Access: Road
Current Use: Fire Detection
NRHP Status: **Ineligible**

About: "This location has been used as a lookout since at least 1929, when a 20' timber tower and gable-roofed L-4 cab was constructed. Five years later, a garage was added to the site. The lookout deteriorated over time, and in 1962, the lookout tower and cab were replaced by a 30' tower and an R-6 flat top cab designed by A.P. DiBenedetto, but by 1973, deterioration and damage necessitated replacement. A different R-6 cab, also designed by DiBenedetto and constructed in 1962, which was moved in 1974 from Lake Butte, along with a 30' timber treated tower. The 1974 move via flatbed truck was undertaken by the Emmert Industrial Corporation of Clackamas (Malheur National Forest, n.d.)." According to the FMP, "The lookout is staffed for about 4 months during fire season. The building is in poor condition. The guy wires and railing are loose. The building and the deck around the cab need painting and repairs. Some of the bracing members are split. The flat roof should be replaced. The lightning protection system should be checked for continuity and reliability. The propane system and tank need to be upgraded. There is a newer CXT toilet building in good condition that is not in the I-Web data base. There is also an old wooden toilet on the site and a 6' x 6' fiberglass communication building with a wood floor that is rotted."

Partners: Unknown
Deferred Maintenance: $25,089.30
Replacement Value: $115,480.70

FRAZIER POINT (06040200071)
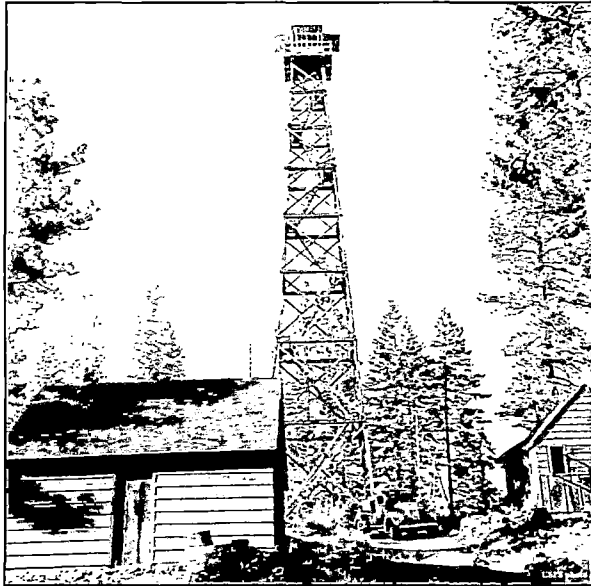
Frazier Point Lookout c.1956
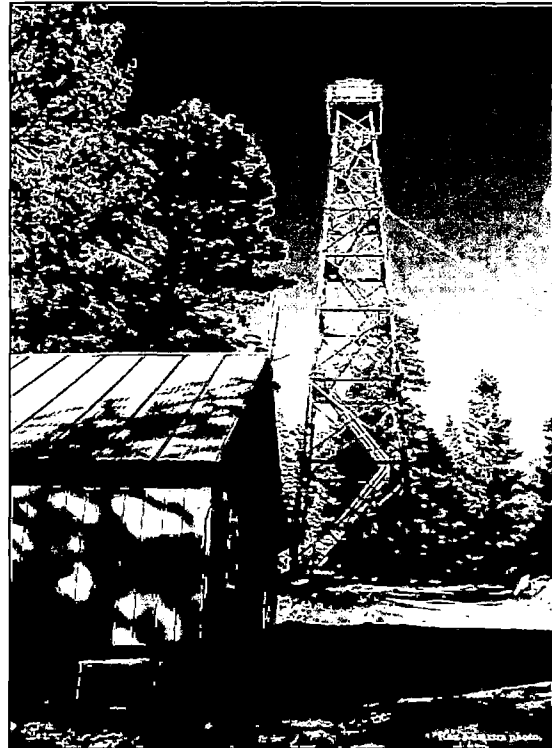
Frazier Point Lookout c.2014

Year Built: 1936
Ranger District: Emigrant Creek
Lat/ Long: 44.09416666/ -118.64694444
Access: Road
Current Use: **Inactive**
NRHP Status: Eligible

About: Frazier Point is inactive and scheduled for decommissioning. A DOE was conducted in 2010 and found the lookout to be eligible for inclusion in the National Register. Frazier Point is a classic L-6 wooden cab w/ catwalk on 100ft guyed treated timber tower with ground house living quarters. According to the RSFMP, "The Frasier Lookout is a 7-foot by 7-foot cab on a 100-foot treated timber tower. The lookout is no longer staffed and the structure is condemned due to structural deficiencies. There is a residence on the ground at the site and a small toilet. The residence and toilet are in poor condition. The buildings have significant deferred maintenance and would require extensive upgrading to be safe for occupants (RSFMP, 2017: 116)"

Partners: Unknown
Deferred Maintenance: $12,831.19
Replacement Value: $12,831.19

KING MOUNTAIN LOOKOUT (06040200424)
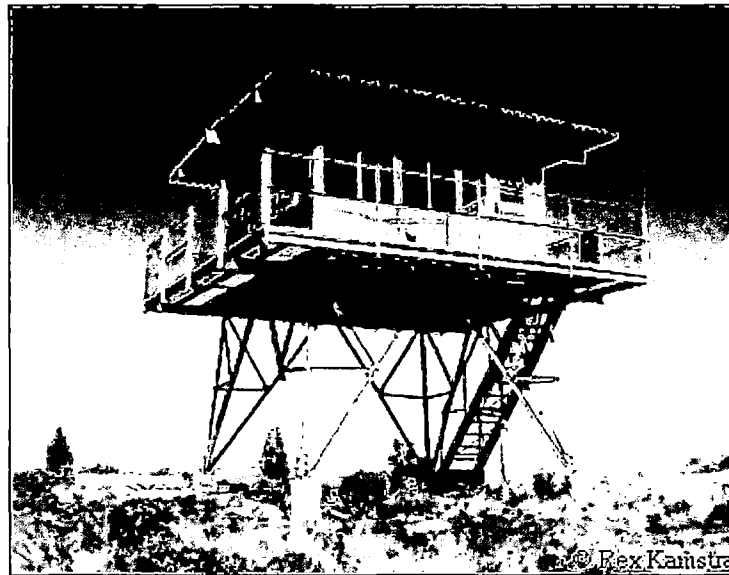
King Mountain Lookout

Year Built: 1957
Ranger District: Emigrant Creek
Lat/ Long: 43.8108333/ -118.8683333
Access: Road
Current Use: Inactive
NRHP Status: Eligible

About: King mountain was originally the location for a D-6 in the 1920's and a cabin in 1933. The CL is made of steel and is inactive. The lookout was originally built on the Ochoco National Forest in 1957 on a 10ft steel tower. According to the RSFMP, "The King Mountain lookout is 13-foot by 13-foot steel cab on a 10-foot steel tower built in 1957. The lookout is no longer staffed. There site also has an old garage, a 10' x 10' communication building and a 6' x 6' communication building. There is also a commercial communication building under special use at the site. The lookout has hazardous stairs, decking, and railings. The garage is in disrepair with a poor roof and siding."

Partners: Unknown
Deferred Maintenance: $39,005.22
Replacement Value: $47,223.22

OCTAGON

CALAMITY BUTTE LOOKOUT (06040200041)
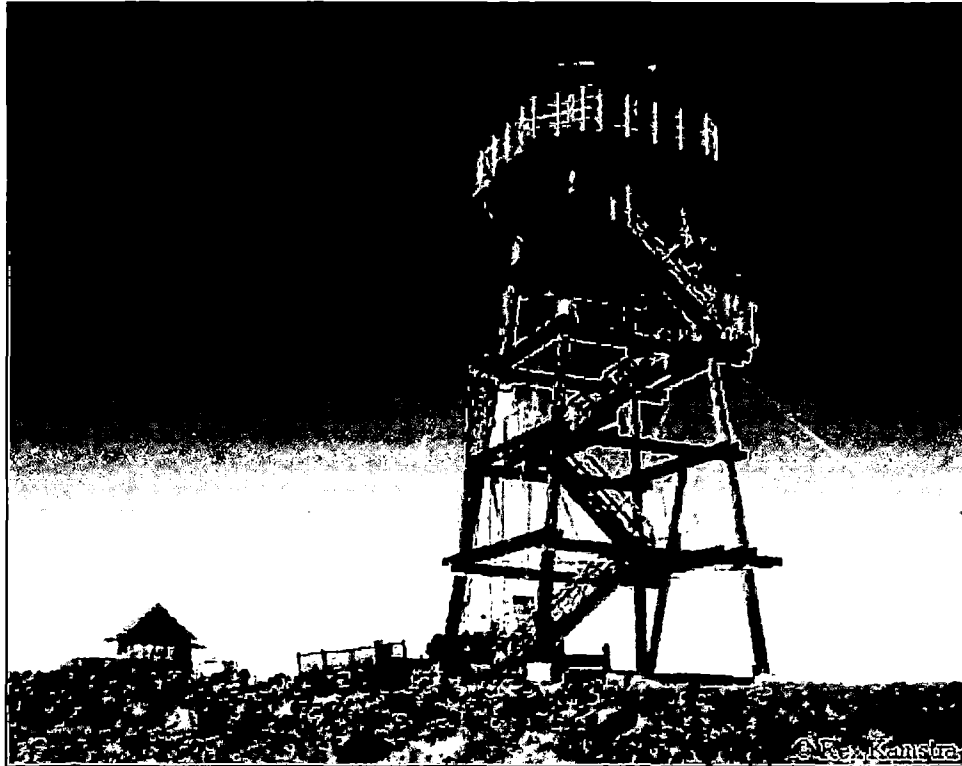
Calamity Butte Lookout

Year Built:	2000
Ranger District:	Emigrant Creek
Lat/ Long:	43.9286/ -118.8253
Access:	Road
Current Use:	Fire Detection
NRHP Status:	Unevaluated

About: Calamity Butte was originally established with an L-4-AR. According to the WWLL, "construction of new 50' pole tower with octagonal cab began in 1996, continuing for several years. It is staffed every summer." The RSFMP describes the lookout as, "an octagonal cab on a 50-foot treated round pole tower constructed in 2000. The lookout is staffed during fire season. An older lookout, R-5 cab (#4003) sits on the ground near the new lookout. The other two buildings at the site are a garage (#1506) and a wooden toilet (#1730). The old lookout, garage and toilet are in poor condition (RSFMP, 2017: 84-85)".

Partners:	Unknown
Deferred Maintenance:	$0
Replacement Value:	$152,812.22

#	NAME	STYLE	YEAR
1	Flag Point Lookout Tower	R-6 Flat	1973 NHLR, 1960 NRM
2	Fivemile butte (5 mi)	R-6 Flat	1957
3	Bull of the Woods	L-4 (Standard '36)	1942
4	Sisi Butte Lookout Tower	Octagon	1977
5	Clear Lake Butte	R-6 Flat	1964
6	Clear Lake Butte Crow Nest	Crow Nest	Unknown
7	Hickman Butte	L-4	1952/ 54
8	Devils Peak	L-4	1952 NRM, 1933 SHPO

CLEAR LAKE BUTTE TREE (662EA71)

Clear Lake Butte Lookout Tree

Year Built:	Unknown, c. 1920-1932
Ranger District:	Hood River
Lat/ Long:	45.1565278/ -121.7184
Access:	Road
Current Use:	Inactive
NRHP Status:	Unknown

About: According to the 1992 site form, "this site was discovered by District employee, Carol Johnson, and consists of one live ~26m tall, 11cm dbh Western hemlock tree. The tree is leaning at 13°; it is being pushed over by a large windthrown Douglas fir tree that has blown down and is lying next to it. The lookout tree has 14-15cm limb rungs nailed onto it with machine-made nails (the bottom rung is missing), rungs extend at ~5.5cm intervals to ~63cm up to the tree. Telephone wire or insulators are not visible around the site. The bottom of the tree has a deep old, over-grown blaze...there was another lookout tree on the NW side of the butte (Site form, Groce, 1992: 1-2)".

Partners:	Unknown
Deferred Maintenance:	$0
Replacement Value:	$0

L-4

BULL OF THE WOODS (06060500144)
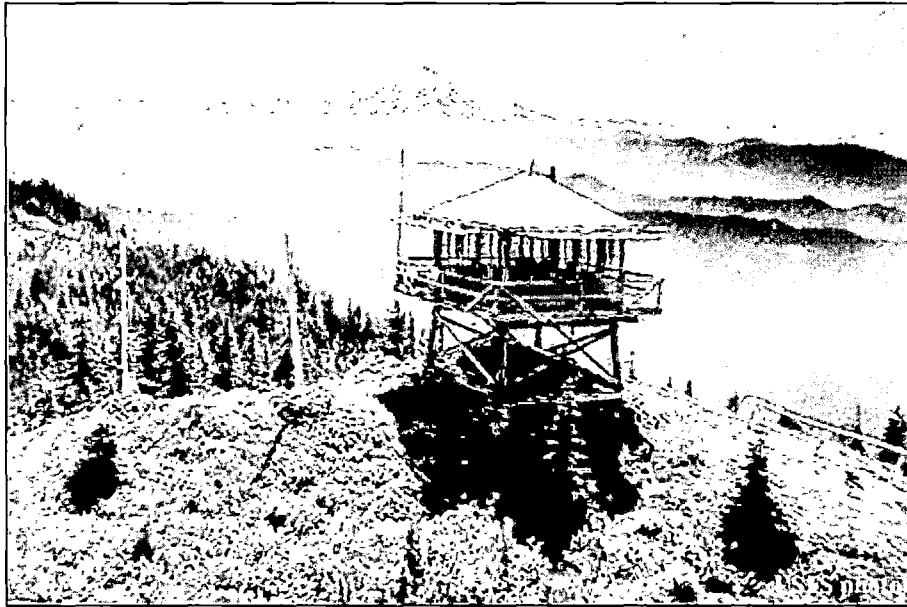
Bull of the Woods Lookout

Year Built:	1942
Ranger District:	Clackamas
Lat/ Long:	44.846/ -122.0957
Access:	Trail
Current Use:	Inactive
NRHP Status:	Eligible

About: This L-4 standard '36 is located in Bull of the Woods wilderness on a 10-foot treated timber tower. It is used as an emergency backcountry guard station. The tower was prefabricated at the Zigzag CCC Camp. Cab was precut from a kit provided by the Aladdin Co.

Partners:	Heritage Trust, FFLA, and Sand Mountain Society.
Deferred Maintenance:	$0
Replacement Value:	$52,260.66

HICKMAN BUTTE (06060400058)

Hickman Butte Lookout c.1967

Hickman Butte Lookout c.2011

Year Built:	1952
Ranger District:	Zig Zag
Lat/ Long:	45.412/ -121.9114
Access:	Road access but need to be officially escorted through the Bull Run Watershed
Current Use:	Fire Detection
NRHP Status:	Unevaluated

About: Hickman Butte is a '36 L-4 standard with a catwalk on a 41-foot treated timber tower. According to the DOE for Bull of the Woods in 1993, Hickman Butte was, ""built in 1952, is another example of the L-4, Standard 36 version lookout. It is built on a 45-foot TT tower. Although it is accessible by road, it is located within the Bull Run Watershed which is closed to public entry. The door, windows, shutters, and siding have been replaced, with in-kind materials. Some of the original features are still in place; the desk, bed, cabinets, and Osborne firefinder. It is presently used as a lookout (Bull of the Woods DOE, 1993: 5)".

Partners:	Unknown
Deferred Maintenance:	$51,421.98
Replacement Value:	$79,990.80

DEVIL'S PEAK (06060900030)

Devil's Peak Lookout

Year Built:	1952
Ranger District:	Zig Zag
Lat/ Long:	45.2641667/ -121.876
Access:	**Trail**
Current Use:	**Inactive**
NRHP Status:	**Eligible**

About: According to NRM, the L-4 lookout cab is on a 10-foot treated timber tower and the cab was salvaged from an old bridge. It is currently inactive. The L-4 ground cab replaced the original 12x12' log cabin w/ cupola (1924). According to the DOE for Bull of the Woods in 1993, Devil's Peak, "is a p roofed L-4 built on a 10-foot TT tower. Although two sources report 1949 as date of construction, a third source confers a date of 1933. The tower style appears to resemble the L-4 hip variation (1932-1936), as does the window fenestration. Therefore, the earlier date may be more accurate. The lookout is located just outside of the Salmon-Huckleberry Wilderness area. It is accessible by three different trails ranging from 1 to 7 miles long. It is no longer used as a lookout, although hikers use the building for recreational purposes. Deducing from the conditions and site report (J. Horn, 1976: 1), there have been few alterations, besides replacement of the stairs to the catwalk. A condition assessment performed in 1993 listed condition as poor. It is not an active fire detection facility, and is occasionally used by the public as an overnight accommodation." Bull of the Woods DOE, 1993: 5.

Partners:	Heritage Trust
Deferred Maintenance:	$0
Replacement Value:	$53,327.20

FLAG POINT (06060100018)

Flag Point Lookout Tower c.1956

Flag Point Lookout Tower

Year Built:	1960 NRM/ 1973 NHLR
Ranger District:	Barlow
Lat/ Long:	45.19083/ -121.4663453
Access:	Road
Current Use:	Fire Detection (summer) and Recreation Rental (winter)
NRHP Status:	Eligible

About: The R-6 is on a 41-foot treated timber tower with a view of Mt Hood. According to the DOE for Bull of the Woods in 1993, "Flag Point Lookout (Barlow Ranger District) is an R-6 style lookout on a 41-foot tower, with a 14 X 14 cabin on 8 X 8 treated legs. It is an active fire detection facility and is rented to the public during the winter months. Although Kresek (page 33) gives c. date of 1973, district sources claim 1960 as c. date. Associated buildings include a remodeled 1940s gable roofed garage, an outhouse (unknown date), and a radio communication facility. According to a 1993 conditions report, the lookout is in fair condition (Bull of the Woods DOE, 1993: 5)".

Partners:	Unknown
Deferred Maintenance:	$14,102.28
Replacement Value:	$89,989.65

FIVEMILE BUTTE (06060100050)
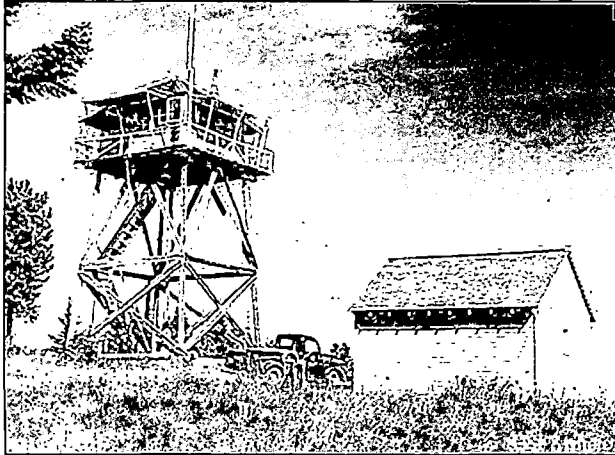
Fivemile Butte Lookout c.1956
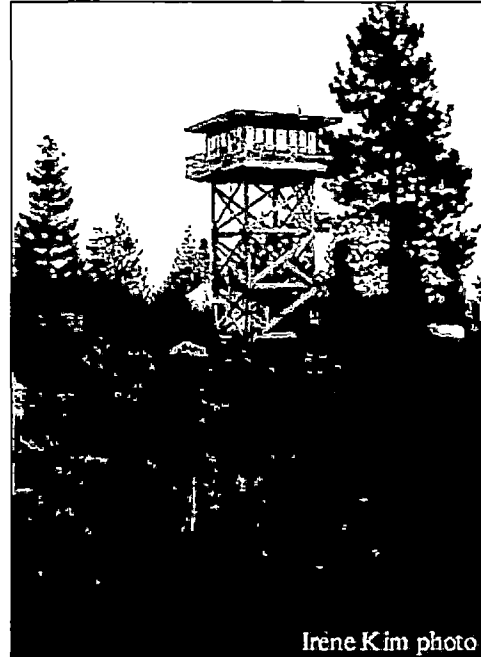
Irene Kim photo

Fivemile Butte Lookout

Year Built:	1957
Ranger District:	Barlow
Lat/ Long:	45.4101306/ -121.4688
Access:	Road
Current Use:	Recreation Rental
NRHP Status:	Unevaluated

About: 40-foot treated timber tower with an R-6 cab. Originally the site had a platform tower in the 1920's and it was replaced by a 30-pole L-4 in 1932. The L-4 was destroyed by heavy snow in 1942 and replaced by another L-4 tower with an inside trap door. There used to be a patrol point and tree platform 1 mile south atop Pebble Point. According to the 1979 site record, the "tower is 40ft tall, platform has 5 glass windows (4 panes each) on side with door. Four on other three sides. Each window is 22" by 48". Wood burning stove with white enamel finish. Osborne Fire Finder #4 in center of room. Linoleum floors, wood desk with Formica top. Wooden bed frame with 2 drawers in it. Two low cabinets with 3 drawers and two cupboards, two wooden chairs and a refrigerator (CRI Record Form, Denise Zemer, 1979)".

Partners:	Unknown
Deferred Maintenance:	$6,414.70
Replacement Value:	$59,993.10

CLEAR LAKE BUTTE TOWER (6060200052)

Clear Lake Butte Lookout

Clear Lake Butte Lookout c.2005

Year Built: 1962
Ranger District: Hood River
Lat/ Long: 45.1565278/ -121.7184
Access: Road
Current Use: Fire Detection (summer) and Recreation rental (winter)
NRHP Status: Unevaluated

About: Originally a 110-foot platform tower constructed in 1932. It was replaced with the present 41-foot R-6 flat in 1962. There is remanence of a crow nest on the butte.

Partners: Unknown
Deferred Maintenance: $16,538.62
Replacement Value: $59,993.10

OCTAGON

SISI BUTTE (06060300177)

Sisi Butte Lookout Tower, NHLR

Sisi Butte Lookout Tower c.1997

Year Built:	1977
Ranger District:	Clackamas
Lat/ Long:	45.0338/ -122.0562
Access:	Road
Current Use:	Fire Detection
NRHP Status:	Unevaluated

About: The octagon was constructed in 1977 on a 40-foot pole tower and the inside uses laminated wood. Originally the site had an L-4 built in 1940 and staffed year-round as AWS in WWII. The L-4 structure was removed but historic parts were salvaged--it is unclear if they were incorporated into the construction of the octagon.

Partners:	Unknown
Deferred Maintenance:	$92,049.97
Replacement Value:	$136,468.74

#	NAME	STYLE	YEAR
1	Mount Pisgah	R-6 Flat	1964 NHLR, 1958 NRM
2	Mount Pisgah Lookout Tree	Tree Platform	1919 NRHP, 1918 FFLA
3	Tower Point	L-4	1955
4	Wolf Mountain	L-4	1947 NHLR, 1952 NRM
5	East Wolf Mountain	Crow Nest	1932 NHLR
6	West Wolf Mountain	Crow Nest	1921 FFLA
7	Black Mountain Lookout Tree	Tree Platform	1937

TREE PLATFORM

MOUNT PISGAH LOOKOUT TREE
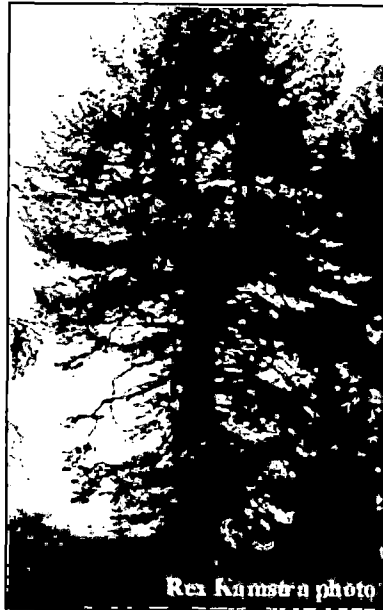
Mount Pisgah Lookout Tree

Year Built: 1918
Ranger District: Lookout Mountain
Lat/ Long: 44.4570441/ -120.2526802
Access: Road
Current Use: **Inactive**
NRHP Status: Unknown
About: 10-foot tree platform

Partners: Unknown
Deferred Maintenance: $0
Replacement Value: $0

BLACK MOUNTAIN LOOKOUT TREE (06070100018)
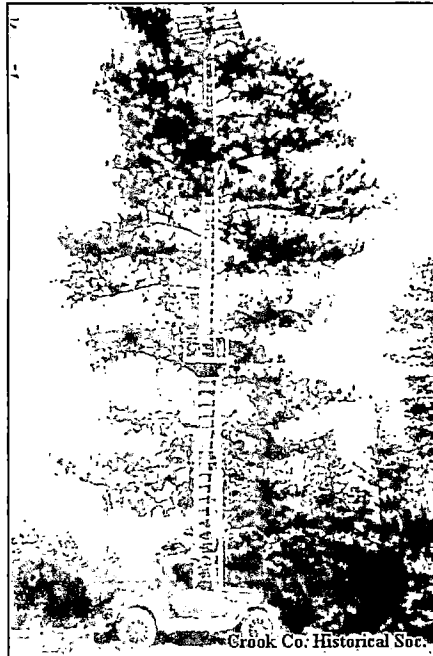
Black Mountain Tree Platform

Black Mountain Lookout Tree 2011, cherylhill.net

Year Built: 1937
Ranger District: Lookout Mountain
Lat/ Long: 44.379/ -120.098694
Access: Trail
Current Use: **Inactive**
NRHP Status: Unevaluated

About: 70-foot tree platform and the frame cabin quarters were relocated to the Ochoco Ranger Station.

Partners: Unknown
Deferred Maintenance: $0
Replacement Value: $0

CROW NEST

EAST WOLF MOUNTAIN

East Wolf Mountain Lookout
c.2012

Year Built:	1932
Ranger District:	Paulina
Lat/ Long:	44.3281222/ -119.7152009
Access:	**Road**
Current Use:	**Inactive**
NRHP Status:	Unknown

About: The Crow Nest is located one mile east of Wolf Mountain

Partners:	Unknown
Deferred Maintenance:	$0
Replacement Value:	$0

WEST WOLF MOUNTAIN

West Wolf Mountain Lookout tree c.1923

Year Built: 1921
Ranger District: Paulina
Lat/ Long: 44.3281222/ -119.7152009
Access: Road
Current Use: Inactive
NRHP Status: Unknown

About: The Crow Nest is located approximately 0.5 miles southwest of the present tower.

Partners: Unknown
Deferred Maintenance: $0
Replacement Value: $0

L-4

TOWER POINT (06070300237)
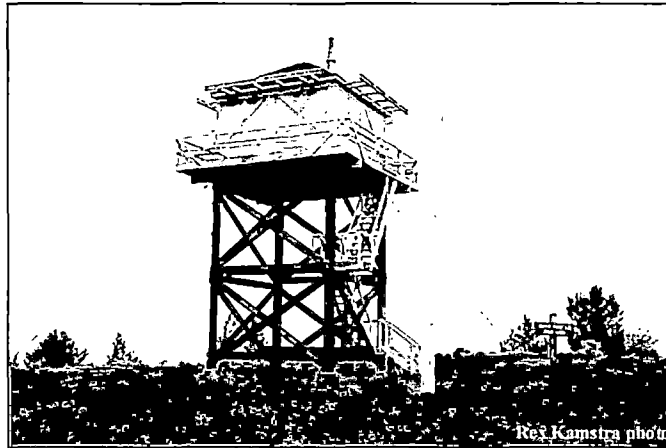
Tower Point Lookout

Year Built:	1955
Ranger District:	Lookout Mountain
Lat/ Long:	44.0573045/ -120.2953879
Access:	Road
Current Use:	Fire Detection
NRHP Status:	Eligible

About: L-4 hip cab on a 20-foot treated timber tower. A DOE was conducted in 2015 and found the lookout to be eligible for inclusion in the National Register.

Partners:	BLM
Deferred Maintenance:	$2,482.10
Replacement Value:	$101,850.37

WOLF MOUNTAIN LOOKOUT (06070200028)

Wolf Mountain Lookout c.1955
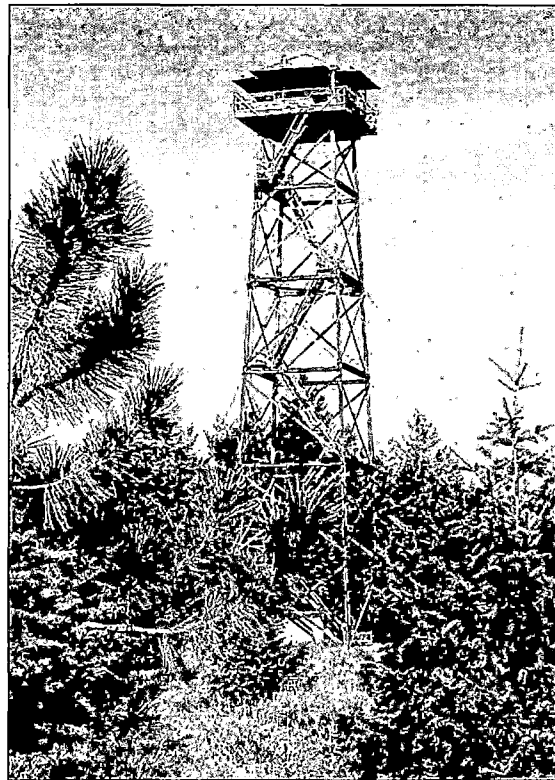
Wolf Mountain Lookout c.2012

Year Built:	1947
Ranger District:	Paulina
Lat/ Long:	44.3281222/ -119.7152009
Access:	Road
Current Use:	Fire Detection
NRHP Status:	Eligible

About: An L-4 on a 107-foot treated timber tower. The old phone system is still present and used--there is a radio for backup. According to the WWLL, "Established in 1921 with a crow's nest tree platform (1/2 mile southwest of the present tower), a 50' wooden tower with 7x7' and cabin were constructed in 1926 (also 1/2 mile southwest of the present tower). A garage was added in 1934. A crow's nest tree platform was added 1/2 mile east of the present tower in 1931 (still there, also called the East Wolf Lookout Tree). Materials for the current 108' treated timber L-4 tower were purchased in 1942, then stored at Derr Guard Station until 1947 when enough manpower was available after World War II to build the tower".

Partners:	Unknown
Deferred Maintenance:	$77,979.19
Replacement Value:	$77,979.19

MOUNT PISGAH LOOKOUT TOWER (06070100009)

Mount Pisgah Lookout

Year Built: 1964
Ranger District: Lookout Mountain
Lat/ Long: 44.4570441/ -120.2526802
Access: Road
**Current Use:** Fire Detection
NRHP Status: Eligible

About: 14x14' R-6 flattop live-in cab w/ catwalk on a 20-foot treated timber tower. The current lookout on Mount Pisgah is the fifth lookout to be placed on site. According to the WWLL, the lookout had a "10' platform built here in 1918, replaced by a 35' platform and accompanying cabin in 1923. A cab was constructed atop the existing tower in 1929, followed up by a 20' L-4 tower in 1933. In addition, there were patrol points 1 mile north (burned in a 2008 forest fire) and 3 miles east. The present 20' treated timber R-6 flat tower, built in 1964, is staffed every summer."

Partners: Unknown
Deferred Maintenance: $6,157.66
Replacement Value: $77,979.19

CROOKED RIVER NATIONAL GRASSLANDS

#	NAME	STYLE	YEAR
1	Stevenson Mountain (Stephenson Mountain)	L-4	1963

STEVENSON (STEPHENSON) MOUNTAIN LOOKOUT
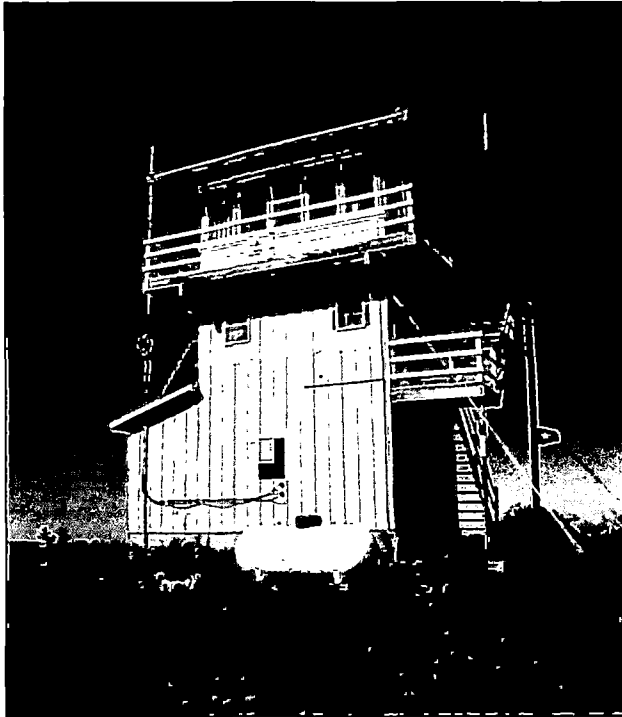
Stevenson Mountain 2009, Ron Kemnow photo,
Oregonlookouts.weebly.com

Stevenson Mountain Lookout

Year Built: 1963
Ranger District: Lookout Mountain
Lat/ Long: 44.58973/ -120.50185
Access: Road
Current Use: Fire Detection and Communication Site
NRHP Status: Unevaluated

About: According to the WWLL, "a crow's nest was developed in the mid-1920s, with ground cabin living quarters added in 1929. The tree was replaced by a 60' wooden tower in 1934. The present 3-story enclosed ODF cab, built in 1962-63 3/4 mile west of the previous tower, is staffed by the Forest Service. It is located on private land with no public access".

Partners: ODF
Deferred Maintenance: $113,673.75
Replacement Value: $267,357.22

#	NAME	STYLE	YEAR
1	Dutchman Peak	D-6	1927
2	Squaw Peak	L-4	1943
3	Bolan Mountain	L-4	1953
4	Rustler Peak	L-4	1948
5	Robinson Butte	R-6	1955
6	Hershberger	D-6	1925
7	Hall's Point	R-6	1956 NHLR, 1960 NRM
8	Mount Stella	L-4	1947
9	Quail Prairie	R-6 Flat	1963
10	Lake of the Woods	CL-160	1955 NHLR, 1958 NRM
11	Snow Camp	CL-100	2004
12	Yellow Jacket	Crow Nest	1917

CROW NEST

YELLOW JACKET

Yellow Jacket 2007, Ron Kemnow
photo. Oregonlookouts.weebly.com

Yellow Jacket Mountain Lookout c.1917, National Archives- Seattle.
Oregonlookouts.weebly.com

Year Built:	1917
Ranger District:	Siskiyou
Lat/ Long:	42.0274/ -122.950593
Access:	**No,** 4 x 4 two-track road/ hike
Current Use:	**Inactive**
NRHP Status:	Unknown

About: Located in a ponderosa pine tree and was abandoned in 1928. According to geocaching.com, "Yellowjacket Mountain Fire Lookout was established in with a crow's nest built in the top of a 30' pine tree on the top of the ridge. Living quarters was a small cabin built near the top of the ridge. This served as a fire lookout until 1927 when the D-6 cupola lookout house was built on Dutchman's Peak, about 1000' higher. This old tree is still alive and well! You can see where the top was cut off and a platform was attached, plus the spikes are still visible that held the ladder in place".

Partners:	Unknown
Deferred Maintenance:	$0
Replacement Value:	$0

DUTCHMAN PEAK LOOKOUT

Dutchman Peak Lookout

Dutchman Peak Lookout c.2009

Year Built: 1927
Ranger District: Siskiyou
Lat/ Long: 42.043567/ -122.890767
Access: Road
Current Use: Fire Detection
NRHP Status: Listed

About: Dutchman Peak is a classic D-6 and it is still used for fire detection. This lookout is a popular spot for hikers to visit from the Pacific Crest Trail. A garage was added in 1937 and converted to living quarters in 1942 for the AWS.

Partners: Unknown
Deferred Maintenance: $31,467.02
Replacement Value: $91,360.51

HERSHBERGER LOOKOUT

Hershberger Lookout c.1925
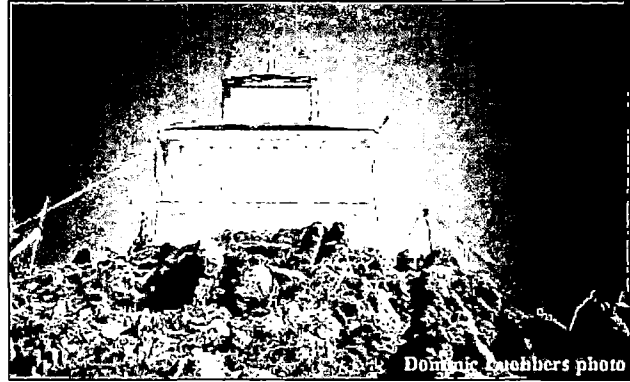
Hershberger Lookout

Year Built:	1925
Ranger District:	High Cascades
Lat/ Long:	42.03494444/ -122.4553333
Access:	Road
Current Use:	Communication and Emergency Fire
NRHP Status:	Listed

About: The D-6 replaced a rag camp that was established in 1917. The lookout is located near the Rogue/Umpqua divide. There is a radio repeater on-site and it is staffed in emergencies in the summer months.

Partners:	Unknown
Deferred Maintenance:	$38,683.83
Replacement Value:	$45,680.26
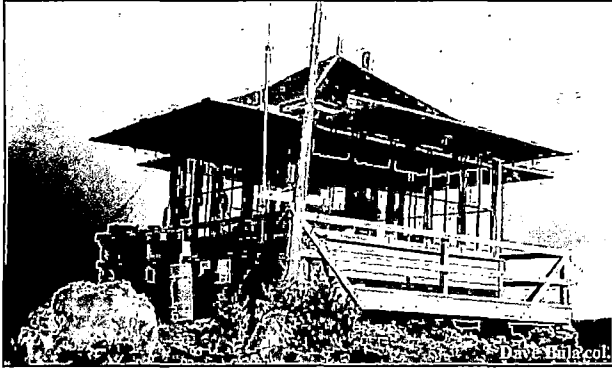
SQUAW PEAK LOOKOUT

Squaw Peak Lookout c.1943

Squaw Peak Lookout, recreation.gov

Year Built:	1943
Ranger District:	Siskiyou
Lat/ Long:	42.069583/ -123.011883
Access:	Road
Current Use:	Recreation Rental (summer)
NRHP Status:	Listed

About: L-4 ground cab with a catwalk. Recently restored and converted into a recreation rental. The lookout is used for emergency fire detection when Dutchman Peak is inaccessible from snow.

Partners:	Unknown
Deferred Maintenance:	$1,103.49
Replacement Value:	$62,175.90

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BOLAN MOUNTAIN LOOKOUT
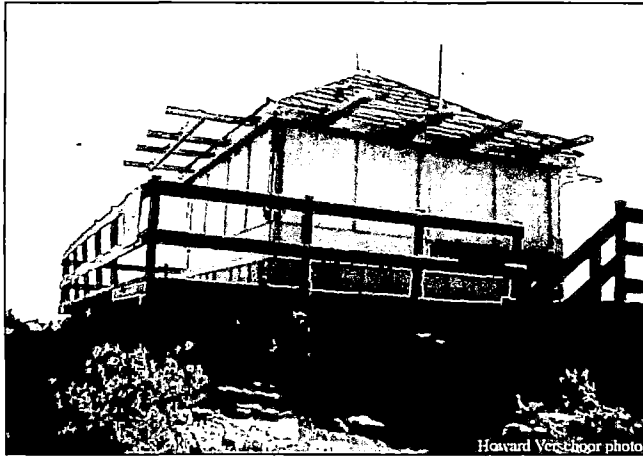
Bolan Mountain Lookout

Bolan Mountain Lookout, recreation.gov

Year Built: 1953
Ranger District: Wild Rivers
Lat/ Long: 42.0156/ -123.4595167
Access: Road
Current Use: **GONE- Wildfire 2020**
NRHP Status: Unevaluated

About: Originally, Bolan mountain was established with a cupola cabin in 1917 on a log crib base. This was replaced in 1953 with a 14 x 14-foot L-4 cab with a hipped roof on a 15-foot treated timber tower. The legs have since been removed and the cab has been placed on a stone foundation. The catwalk was expanded recently and a deck was added on one side. Burned down in 2020. It used to be on the Recreation Rental program.

Bolan Lookout, USFSRRSNF Facebook page

Partners: Unknown
Deferred Maintenance: $2,073.08 (before it burned down)
Replacement Value: $45,680.26

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RUSTLER PEAK

Rustler Peak Lookout c.1948
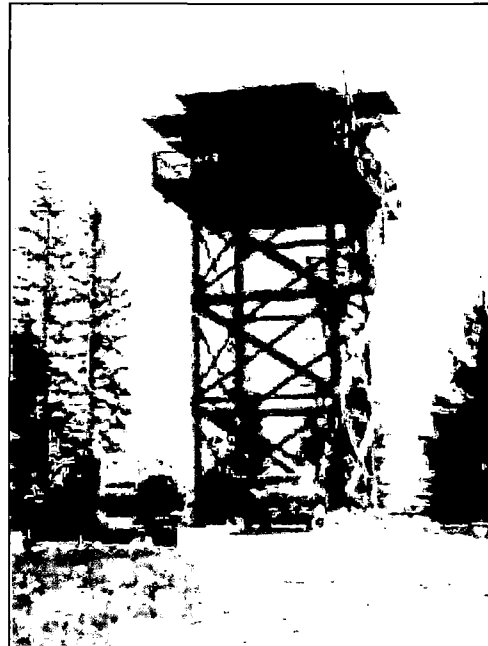
Rustler Peak Lookout. Howard Verschoor photo

Year Built: 1948
Ranger District: High Cascades
Lat/ Long: 42.61925/ -122.3481667
Access: Road
Current Use: Fire Detection and Communication Site
NRHP Status: Unevaluated

About: According to the NHLR, ""Rustler Peak was a full-fledged lookout in 1913 with William Parker as the first Lookout. In 1917 a pre-cut D-6 lookout house from the Mill-Made Construction Company of Portland was assembled in July. In the 1920s, a D-6 cupola on a 10' tower was constructed. In 1940 the CCC expended $600 on lookout construction when the cupola was raised on a tower. The present L-4 14'x14' cab with catwalk on a 31'6" laminated timber tower was built in 1948 and was the site of the first solar-powered radio system in a Forest Service lookout." NHLR

Partners: Unknown
Deferred Maintenance: $6,897.14
Replacement Value: $78,128.93

MOUNT STELLA

Harold C Chriswell photo
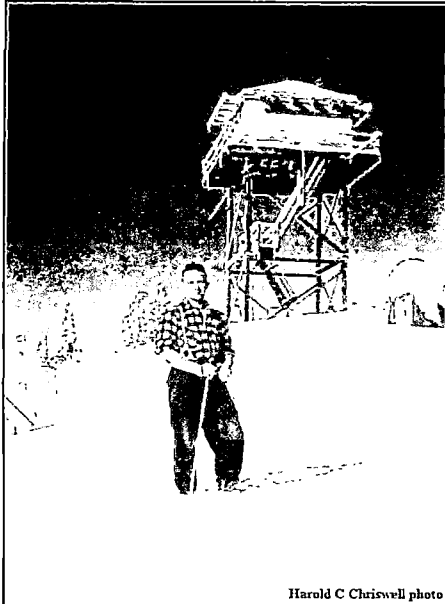
Mount Stella Lookout c.1948

Howard Verschoor photo

Mount Stella Lookout c.1998

Year Built:	1947
Ranger District:	High Cascades
Lat/ Long:	42.937201/ -122.435034
Access:	**No,** take road to hike off-trail
Current Use:	**Inactive**
NRHP Status:	**Listed**

About: Mount Stella is an L-4 on a 40-foot treated timber tower. According to NRM, there is no access for inspection or maintenance.

Partners:	Unknown
Deferred Maintenance:	$0
Replacement Value:	$78,128.93
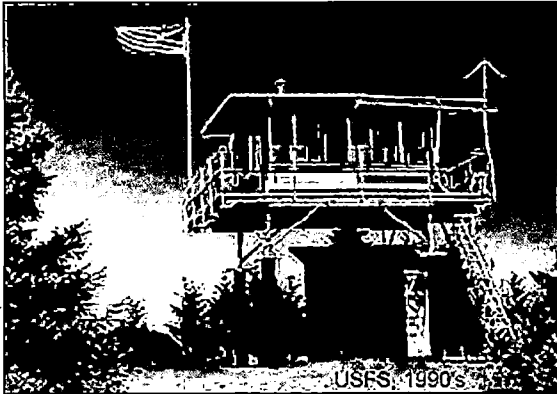
LAKE OF THE WOODS

Lake of the Woods Lookout c.1990s

Lake of the Woods Lookout, recreation.gov

Year Built: 1955 NHLR, 1958 NRM
Ranger District: Gold Beach
Lat/ Long: 42.593/ -124.1295
Access: Road
Current Use: Recreation Rental
NRHP Status: Unevaluated

About: According to NRM, the CL-106 cab is 13'4" x 13'4" on 10-foot steal I-beams. The lookout was originally on Barklow Mountain and was moved to the site in 1974.

Partners: Unknown
Deferred Maintenance: $33,855.43
Replacement Value: $70,555.21

ROBINSON BUTTE LOOKOUT

Robinson Butte Lookout c.1955 on Blue Rock

Robinson Butte Lookout

Year Built:	1955
Ranger District:	High Cascades
Lat/ Long:	42.3646389/ -122.3813611
Access:	Road
Current Use:	**Inactive, Emergency fire**
NRHP Status:	Unevaluated

About: Robinson Butte is a 53-foot treated timber tower with a R-6 flattop cab brought to the site from Blue Rock in 1974.

Partners:	Unknown
Deferred Maintenance:	$25,457.40
Replacement Value:	$52,110.91

HALL'S POINT

Hall's Point Lookout

Hall's Point Lookout c.2001

Year Built:	1956
Ranger District:	High Cascades
Lat/ Long:	42.803594/ -122.548647
Access:	Road
Current Use:	Fire Detection and Communication site
NRHP Status:	Unevaluated

About: The 15' x 15' R-6 ground cab is located roughly two miles north of White Point lookout operated by Oregon State. According to the NHLR, "prior to the construction of the current R-6, this point was primarily a secondary site of Whetstone Point. It was on Whetstone (in early days called Old Baldy or Bald Mountain) that the crow's nest was located in an 80-foot tree in 1914. In 1920 a standard D-6 cupola was built, in 1934 the cupola was elevated onto a ten-foot tower. In 1951 the State erected the 40-foot tower at the south end of the ridge (White Point). Whetstone Point being located at the mid-point of the ridge was not very effective for the Forest Service to cover the northern area. The construction of Halls Point in 1956 remedied the problem and the old Whetstone Lookout was burned in 1958".

Partners:	Unknown
Deferred Maintenance:	$7,622.63
Replacement Value:	$78,988.78

QUAIL PRAIRIE LOOKOUT

Quail Prairie Lookout, Howard
Verschoor photo

Quail Prairie Lookout, NHLR

Year Built:	1963
Ranger District:	Gold Beach
Lat/ Long:	42.24183/ -124.04563
Access:	Road
Current Use:	**Inactive**
NRHP Status:	Unevaluated

About: The R-6 cab is on a 41-foot treated timber tower. It was built to replace Long Ridge lookout which was damaged in the Columbus Day storm of 1941. The lookout was a part of the recreation rental program but it received damage in recent years and is no longer open to the public.

Partners:	Unknown
Deferred Maintenance:	$30,449.57
Replacement Value:	$96,863.93

SNOW CAMP LOOKOUT

Snow Camp Lookout c.2005

Year Built:	2004
Ranger District:	Gold Beach
Lat/ Long:	42.3441667/ -124.1652778
Access:	Road
Current Use:	Recreation Rental
NRHP Status:	Unevaluated

About: Snow Camp was constructed as a replacement for #4015 (Warner Ridge) in 2004. Forest Service supplied materials and volunteers provided the labor. The R-6 hipped 15' x 15' ground cab is designed to accommodate one or two overnight guests. The original cabin was destroyed in Biscuit fire (2002). New is ground cab w/ metal hip roof and catwalk

Partners:	Unknown
Deferred Maintenance:	$3,526.84
Replacement Value:	$137,040.77

#	NAME	STYLE	YEAR
1	Fairview Mountain	Platform Tower	1919

PLATFORM TOWER

FAIRVIEW MOUNTAIN

Fairview Mountain 1982, La Vaughn
Kemnow photo.

Year Built: 1919
Ranger District: Unknown
Lat/ Long: 44.198888/ -124.033105
Access: Road
Current Use: **Inactive**
NRHP Status: Unknown

About: According to Ron Kemnow, Fairview Mountain is, "an open platform with round pole legs. Railroad spikes were used for steps on the northwest corner (oregonlookouts.weebly.com)". This is the last remaining lookout structure on the Siuslaw.

Partners: Unknown
Deferred Maintenance: $0
Replacement Value: $0

#	NAME	STYLE	YEAR
1	Madison Butte	CL-100	1957
2	Tamarack Mountain	Aermotor	1933
3	Bone Point	CL-100	1947
4	Tower Mountain	Aermotor	1929 NHLR, 1934 NRM
5	Desolation Butte	R-6 Flat	1961
6	High Ridge Lookout Tower	R-6 Flat	1959
7	Hoodoo Crow's Nest	Crow Nest	Pre-1933
8	Hoodoo Lookout Tower	Aermotor	1933 FFLA, 1935 NRM
9	Lookout Mountain Lookout Tower	L-4	1948

HOODOO CROW NEST

Hoodoo Crow Nest c.2017

Year Built:	Pre-1933
Ranger District:	Walla Walla
Lat/ Long:	45.9476/ -117.6589
Access:	Road
Current Use:	**Inactive**
NRHP Status:	Unevaluated

About: According to Ron Kemnow, Hoodoo "was first used with a 65-foot tree crow nest, which is still standing (oregonlookouts.com)". The ladder is still located in tree. The Crow Nest is roughly .33 miles NNW of Hoodoo tower.

Partners:	Unknown
Deferred Maintenance:	$0
Replacement Value:	$0
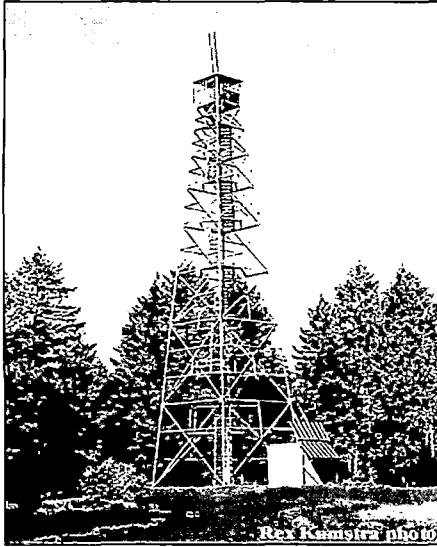
TAMARACK MOUNTAIN

Tamarack Mountain Lookout
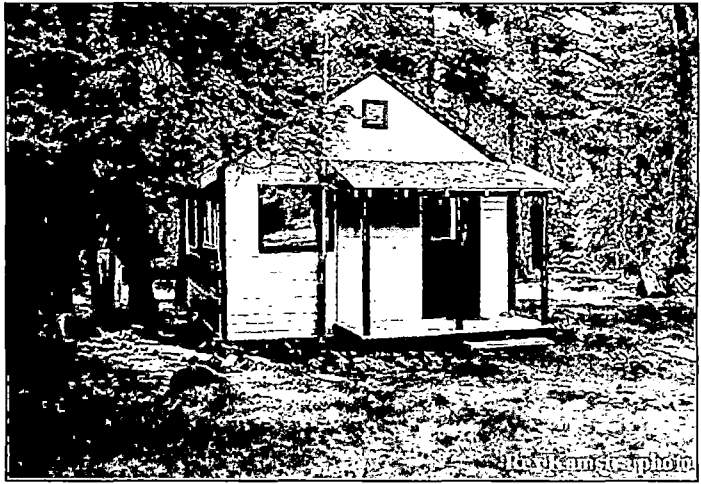
Tamarack Mountain ground cabin and rental

Year Built: 1933
Ranger District: Heppner
Lat/ Long: 44.8739/ -119.66031
Access: Road
Current Use: Fire Detection
NRHP Status: Unevaluated

About: The site was originally established with a tree platform in 1925. Tamarack Mountain is now occupied by a 96-foot steel Aermotor tower. There was a ground house and storage shed built in 1933 but the ground house burned down in 1966 and shed was converted into a recreation rental.

Partners: Unknown
Deferred Maintenance: $11,608.90
Replacement Value: $19,242.10
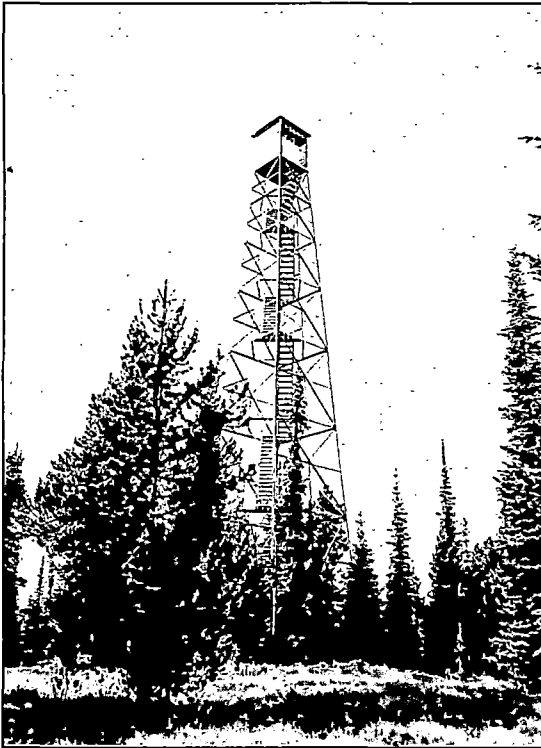
TOWER MOUNTAIN

Tower Mountain c.1957
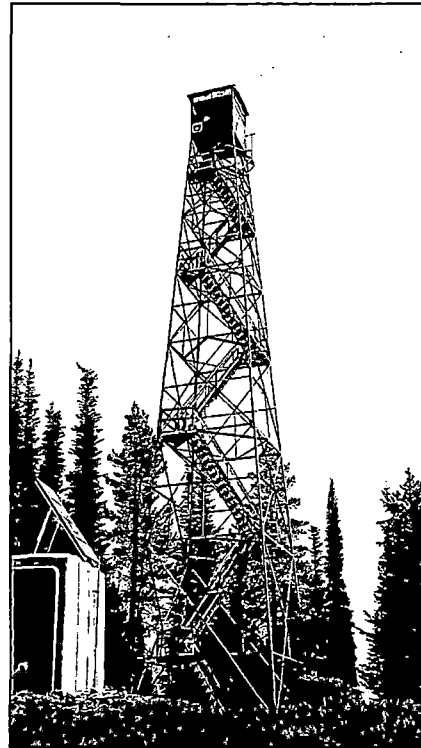
Tower Mountain 2008, Ron Kemnow
photo, oregonlookouts.weebly.com

Year Built:	1929 NHLR/ 1934 NRM
Ranger District:	North Fork John Day
Lat/ Long:	45.05428/ -118.56888
Access:	Road
Current Use:	Fire Detection
NRHP Status:	Eligible

About: Tower Mountain is a 7' x 7' steel cab on an 88-foot Aermotor tower (MC-39 or MC-40). According to the NHLR, "the attractive CCC cabin living quarters [were] moved to the site from Old Lucky Strike in late 1940s".

Partners:	Unknown
Deferred Maintenance:	$3,907.12
Replacement Value:	$19,242.10

HOODOO LOOKOUT TOWER

Hoodoo Lookout Tower
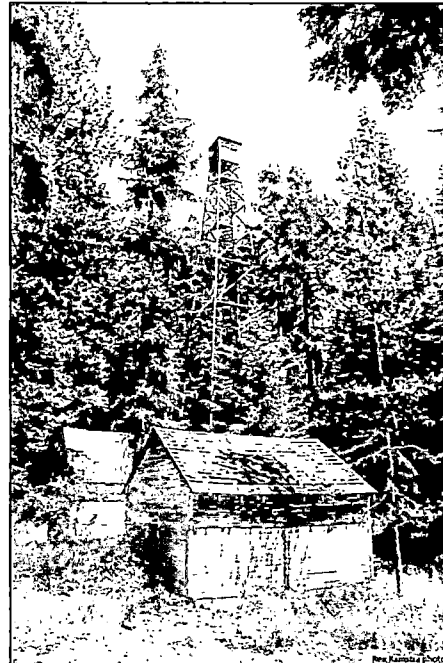
Hoodoo Lookout Tower complex c.2017

Year Built: 1933 FFLA, 1935 NRM
Ranger District: Walla Walla
Lat/ Long: 45.9476/ -117.6589
Access: Road
Current Use: **Inactive**
NRHP Status: Listed

About: Hoodoo is a 7' x 7' steel cab on a 100-foot Aermotor tower. The Tower is accompanied by ground cabin living quarters. Heritage wants to find a way to retain the complex and it might be ideal for conversion into a recreation rental.

Partners: Unknown
Deferred Maintenance: $85,326.67
Replacement Value: $102,612.08

LOOKOUT MOUNTAIN
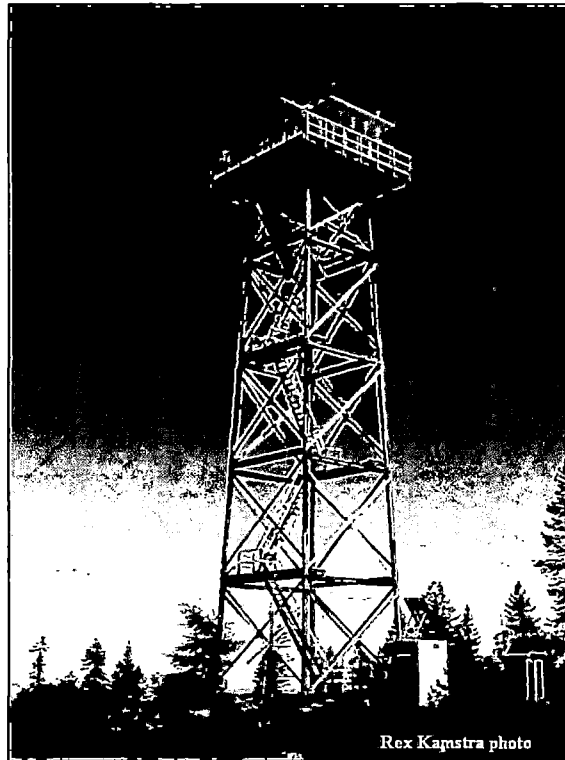
Lookout Mountain Lookout c.2005

Year Built: 1948
Ranger District: Walla Walla
Lat/ Long: 45.85028/ -117.78333
Access: Road
Current Use: Fire Detection
NRHP Status: Eligible

About: Lookout Mountain is an L-4 with a catwalk on an 87-foot treated timber tower. The Cab was removed in 2004, restored on-site, and remounted by crane.

Partners: Unknown
Deferred Maintenance: $3,785.09
Replacement Value: $102,612.08

MADISON BUTTE LOOKOUT

Madison Butte Lookout c.1958
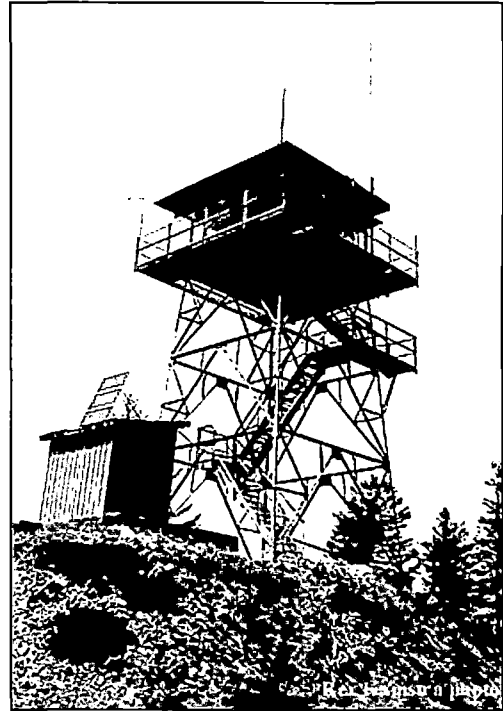
Madison Butte Lookout

Year Built: 1957
Ranger District: Heppner
Lat/ Long: 45.10741/ -119.47483
Access: Road
Current Use: Fire Detection
NRHP Status: Evaluated, noncontributing

About: The CL-100 is on a 37-foot steel tower and was constructed next to the original D-6 cupola. Vicky Ringsdorf of Eugene was the first woman to serve as a lookout in the district in 1967.

Partners: Unknown
Deferred Maintenance: $21,494.45
Replacement Value: $76,968.42

BONE POINT

Bone Point Lookout
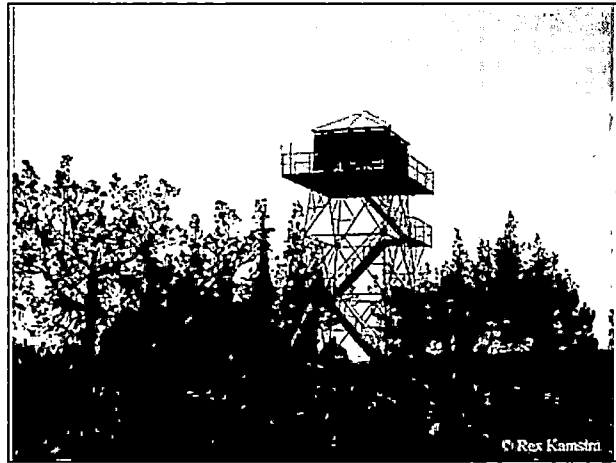
Bone Point Lookout

Year Built: 1961
Ranger District: North Fork John Day
Lat/ Long: 44.9854/ -119.03038
Access: Road
Current Use: Inactive, Emergency fire and Communication Site
NRHP Status: Evaluated, noncontributing

About: The CL-100 hipped is on a 30-foot steel tower and it Is currently used as a radio building and is available in emergencies. According to Ron Kemnow, "The state purchased 10 surplus towers from airfields used during the World War Two era.   One of them being a 30-foot steel structure placed at Bone Point (oregonlookouts.weebly.com)".

Partners: ODF
Deferred Maintenance: $36,392.40
Replacement Value: $76,968.42

DESOLATION BUTTE

Desolation Butte Lookout construction c.1961
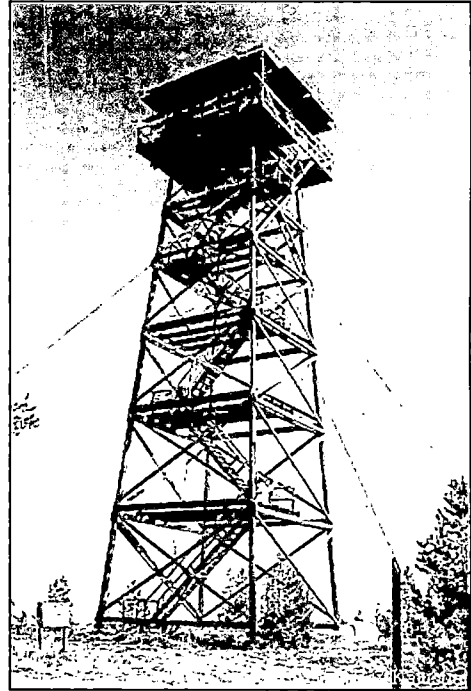
Desolation Butte lookout c.2000

Year Built:	1961
Ranger District:	North Fork John Day
Lat/ Long:	44.85079/ -118.66338
Access:	Road
Current Use:	Fire Detection
NRHP Status:	Unevaluated

About: This R-6 flat is on a 67-foot treated timber tower.

Partners:	Unknown
Deferred Maintenance:	$33,917.83
Replacement Value:	$76,968.42
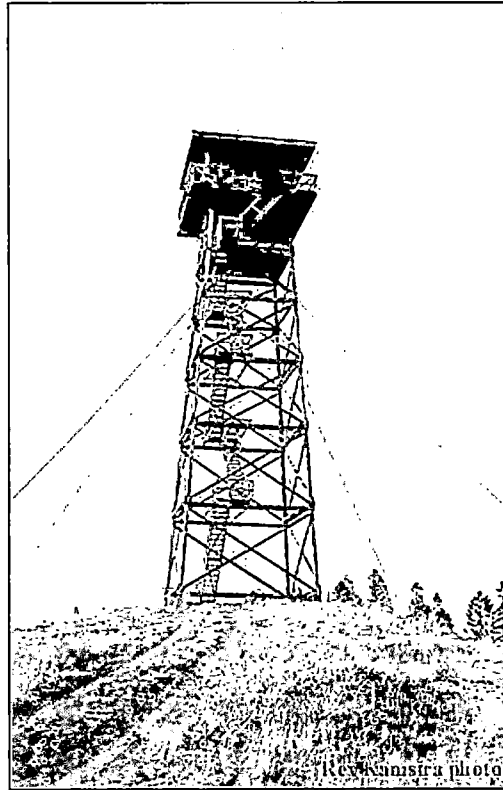
HIGH RIDGE

High Ridge Lookout Tower c.2003

Year Built: 1959
Ranger District: Walla Walla
Lat/ Long: 45.68253/ -118.10197
Access: Road
Current Use: Fire Detection
NRHP Status: Unevaluated
About: This R-6 flat is on a 67-foot treated timber tower.

Partners: Unknown
Deferred Maintenance: $33,917.83
Replacement Value: $76,968.42

#	NAME	STYLE	YEAR
1	Fairview Peak	R-6	1972
2	Acker Rock	R-6	1964 NRM, 1963 SHPO
3	Red Mountain	D-6	1928
4	Abbott Butte	L-4	1939 FFLA, 1936 NRM
5	Pickett Butte	L-4	1948
6	Watson Butte	L-4	1937
7	Cinnamon Butte	R-6	1955 NHLR, 1961 NRM
8	Garwood Butte	L-4	1942
9	Pig Iron	L-5	1950
10	Illahee Rock	D-6	1925
11	Illahee Rock Lookout Tower	L-4	1956 FFLA, 1957 NRM
12	Callahan Mountain	Crow Nest	1922

CROW NEST

CALLAHAN MOUNTAIN
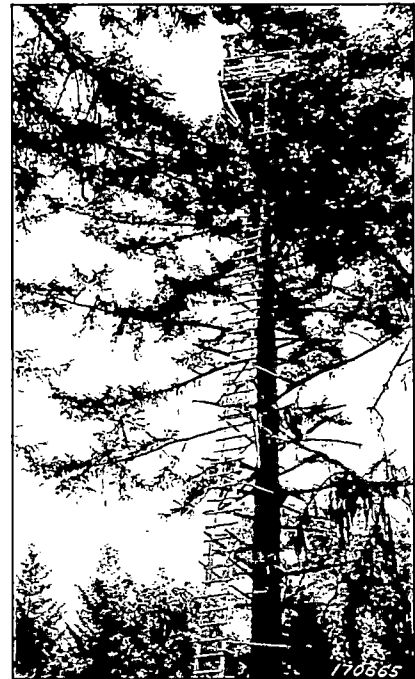
Callahan Mountain 1922, USFS Photo. Oregonlookouts.weebly.com

Year Built: 1922
Ranger District: Tiller
Lat/ Long: 42.90377/ -122.964531
Access: **No,** Hike off road
Current Use: **Inactive**
NRHP Status: Unevaluated

About: Callahan Mountain is a 110-foot Crow Nest that had an accompanying rag camp. Roughly 0.5 miles away is the remains of a single-room shake cabin that was abandoned in 1950 and destroyed in 1965.

Partners: Unknown
Deferred Maintenance: $0
Replacement Value: $0

D-6 CUPOLA

RED MOUNTAIN

Red Mountain Lookout c.1967
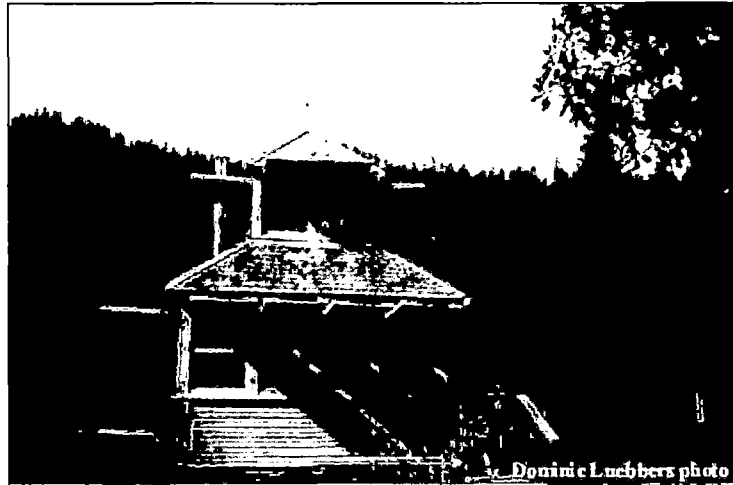
Red Mountain Lookout at Tiller Ranger District

Year Built:	1928
Ranger District:	Tiller
Lat/ Long:	42.926375/ -122.9504
Access:	Road
Current Use:	Monument and Museum Exhibit
NRHP Status:	Eligible

About: Red Mountain is a 12' x 12' D-6 Cupola that was moved from Red Mountain to the Tiller Ranger District and was restored as a museum exhibit. There are no utilities and it is a tourist attraction.

Partners:	Unknown
Deferred Maintenance:	$2,727.55
Replacement Value:	$47,513.16

ILLAHEE ROCK

Illahee Rock Lookout

Year Built: 1925
Ranger District: North Umpqua
Lat/ Long: 43.349258/ -122.5628917
Access: Trail
Current Use: **Museum**
NRHP Status: Unevaluated

About: According to the NHLR, "Hikers to Oregon's Illahee Rock Lookout in the Umpqua National Forest near Crater Lake National Park will also find an informal museum of lookout artifacts in the older cupola lookout... [the] cupola shortened some years ago."

Partners: Unknown
Deferred Maintenance: $1,019.23
Replacement Value: $21,006.40
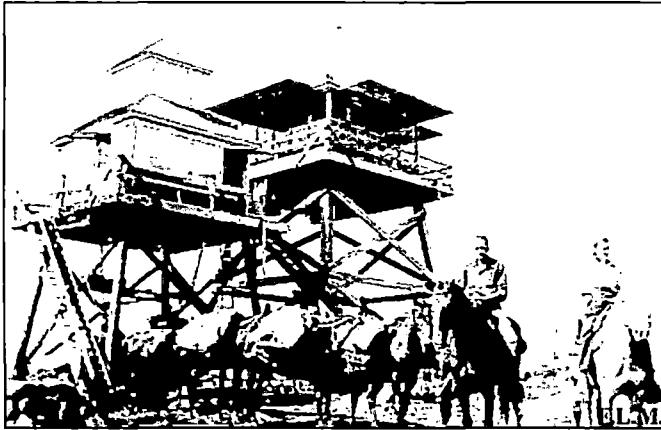
ABBOTT BUTTE

Abbott Butte Lookout c.1939

Ryon Kershner photo
Abbott Butte Lookout c.1961

Year Built: 1936
Ranger District: Tiller
Lat/ Long: 42.942592/ -122.5489111
Access: Road
Current Use: Inactive
NRHP Status: Unevaluated

About: Abbott Butte is a L-4 hip cab on a 20-foot L-4 timber tower (possibly a pole tower). Originally the site had a D-6 on a 15-foot pole tower in 1936.

Partners: Unknown
Deferred Maintenance: $76,285.02
Replacement Value: $76,285.02

PICKET BUTTE

Pickett Butte Lookout
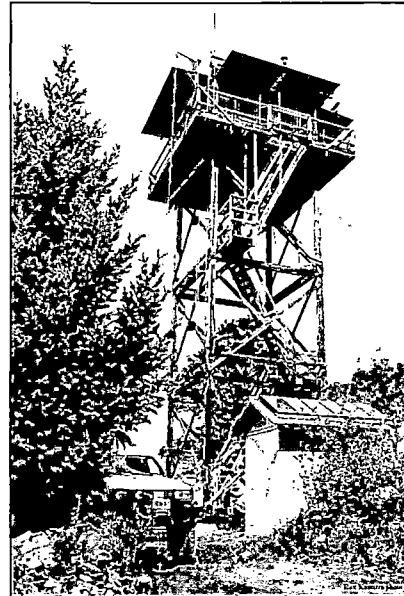
Pickett Butte Lookout c.2008

Year Built: 1948
Ranger District: Tiller
Lat/ Long: 42.94342/ -122.85502
Access: Road
Current Use: Fire Detection (summer) and Recreation Rental (winter)
NRHP Status: Unknown

About: According to the NHLR, "Pickett Butte Lookout is a classic 14' x 14' L-4 on a 41' timber tower. Carefully restored for the cabin rental program, it has remained in active service in the summer, while being available for rental in the non-fire season (the long, wet winters). Because the fire finder and additional lookout paraphernalia remain present, renters are treated to a visit to an authentic historic site. Because it is in such demand as a rental, the district is also making it available during the summer during periods of low fire danger for fire lookout enthusiasts and others",

Partners: Unknown
Deferred Maintenance: $8,588.92
Replacement Value: $105,584.80

WATSON BUTTE LOOKOUT

Watson Butte Lookout

Year Built: 1937
Ranger District: Diamond Lake
Lat/ Long: 43.292236/ -122.2741278
Access: Road
Current Use: Inactive
NRHP Status: Unevaluated

About: Watson Butte is an L-4 hip ground cab. The cab is in poor condition from being inactive and major hazards need to be abated.

Partners: Unknown
Deferred Maintenance: $51,736.55
Replacement Value: $51,736.55
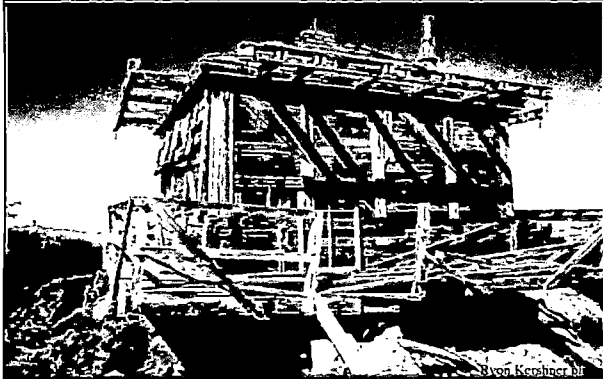
GARWOOD BUTTE

Garwood Butte Lookout
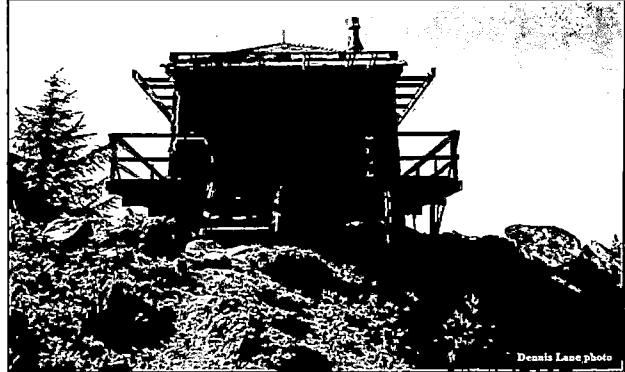
Garwood Butte Lookout c.2014

Year Built:	1942
Ranger District:	Diamond Lake
Lat/ Long:	43.145183, -122.2823556
Access:	**Trail**
Current Use:	**Inactive**
NRHP Status:	Unevaluated

About: According to the FFLA, "originally called Bear Butte, the summit was renamed in 1946 for Leroy E. Garwood, a former Umpqua National Forest employee who died in 1944. Built in 1942, this L-4 cab has been abandoned since the 1960's. Restoration work has been ongoing in recent years".

Partners:	Unknown
Deferred Maintenance:	$22,109.24
Replacement Value:	$41,172.54

ILLAHEE ROCK LOOKOUT TOWER
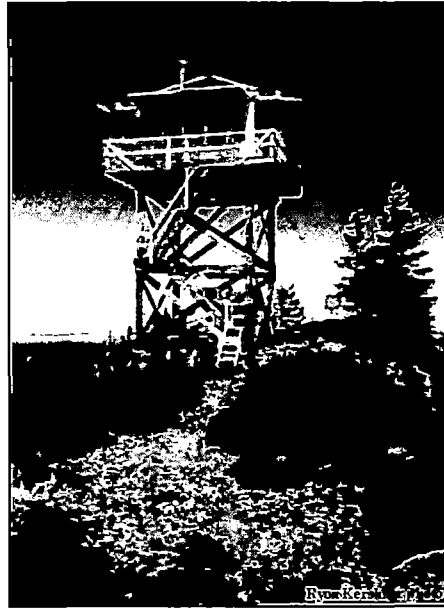
Illahee Rock Lookout Tower

Year Built:	1957
Ranger District:	North Umpqua
Lat/ Long:	43.349258/ -122.5628917
Access:	Trail
Current Use:	Fire Detection
NRHP Status:	Unevaluated

About: Illahee Rock Lookout Tower is a 14' x 14' L-4 cab with a catwalk on a 20-foot treated timber tower.

Partners:	Unknown
Deferred Maintenance:	$51,736.55
Replacement Value:	$51,736.55

PIG IRON LOOKOUT

Howard Verschoor photo
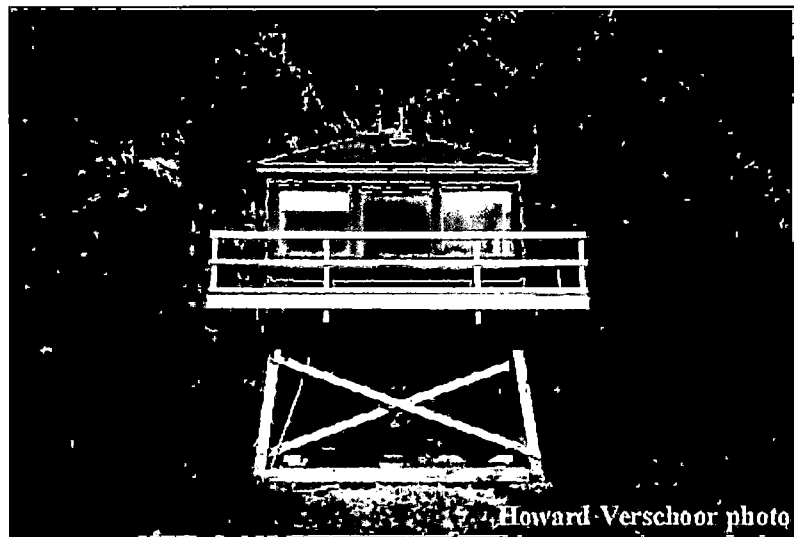
Pig Iron Lookout

Year Built:	1950
Ranger District:	Diamond Lake
Lat/ Long:	43.264131/ -122.3799778
Access:	Road
Current Use:	**Inactive, Emergency Fire**
NRHP Status:	Unevaluated

About: According to the NHLR, "Prefabricated by the Weyerhaeuser Sales Company in 1950, Pig Iron Lookout is probably one of a kind. No other examples of this kit have been identified. Similar to an L-4, the 10' x 10' cab has 3' x 3' solid pane windows and a catwalk atop a 10' wooden tower. This Umpqua National Forest lookout, located a half mile below the summit to get a better view, has been restored and it is used as an emergency detection site. Former lookout Gary Wilson has contributed the following information: "I manned this lookout in the summer of 1951. At that time, I believe it was an L4 type cab. The usual paned windows were present and the shutter assembly opened up for shading. It was a brand-new lookout which allowed me to do some painting and trimming of Douglas Fir trees felled to improve the view. In 2001 or so I visited the site and found the cab to look similar to the photo. There may have been a lookout structure at site before the current structure. A friend of mine served as a lookout the previous summer living in a tent near the site with an Osborne situated outside on a large log. He joked that he wore out his shoes on one side due to the steep slope he was working on. The current structure was built during this time and into the Fall of 1950".

Partners:	Unknown
Deferred Maintenance:	Unknown
Replacement Value:	Unknown

FAIRVIEW PEAK LOOKOUT
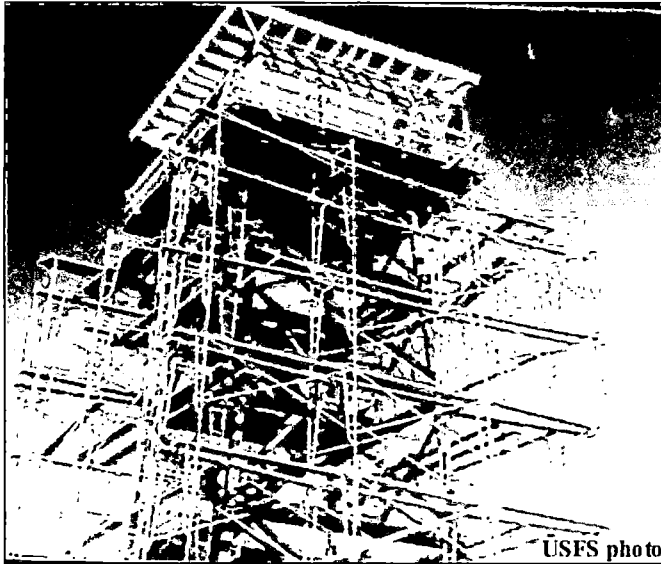
Fairview Peak Lookout c.1972
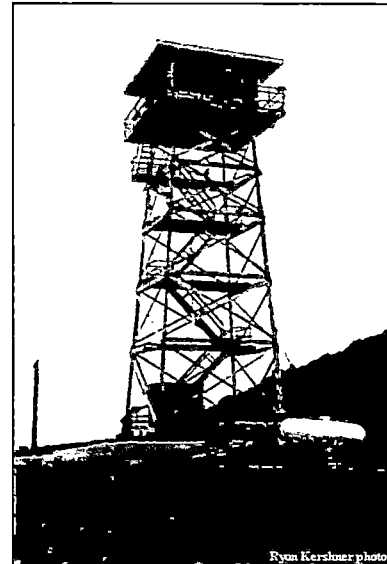
Fairview Peak Lookout

Year Built:	1972
Ranger District:	Cottage Grove
Lat/ Long:	43.585767/ -122.6527222
Access:	Road
Current Use:	**Inactive**
NRHP Status:	Unevaluated

About: Fairview Peak is an R-6 cab on a 53-foot treated timber tower. The lookout was on the recreation rental program but is no longer taking reservations. According to the NHLR, "The first lookout was an open-air Alidade dating back to the early teens. The D-6 cupola was built in 1921 at a cost of $876.99. In 1936 the 20-foot tower with L-4 cab was constructed and the cupola was retained as a place for visitors to stay, later in became a storage building and at one time dynamite was stored in it. The present 53-foot tower with R-6 cab was built in 1972".

Partners:	Unknown
Deferred Maintenance:	$11,781.20
Replacement Value:	$120,102.71
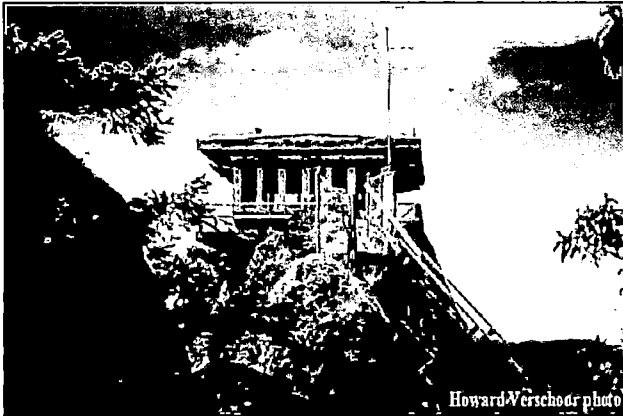
ACKER ROCK

Acker Rock Lookout

Acker Rock Lookout c.2008

Year Built: 1964
Ranger District: Tiller
Lat/ Long: 43.05196/ -122.646124
Access: Trail
Current Use: Recreation Rental
NRHP Status: Unknown

About: According to the NHLR, "Perched on a high rock formation 2000' above the valley floor, Acker Rock Lookout offers a stunning view of the mountain's northwest of Crater Lake National Park. Originally the site of an L-4 constructed in 1934, it was replaced by a R-6 flattop ground house in 1964".

Partners: Unknown
Deferred Maintenance: $15,924.61
Replacement Value: $95,369.06

CINNAMON BUTTE

Cinnamon Butte Lookout

Year Built:	1961
Ranger District:	Diamond Lake
Lat/ Long:	43.241131/ -122.1097083
Access:	Road
Current Use:	Fire Detection
NRHP Status:	Unevaluated

About: Cinnamon Butte is a R-6 cab on a 41-foot treated timber. The cab was originally constructed in 1961 on Buster Butte and was moved to the site in 1976.

Partners:	Unknown
Deferred Maintenance:	$11,520.43
Replacement Value:	$67,574.27

#	NAME	STYLE	YEAR
1	Harl Butte	L-4	1954 NRM, 1935 SHPO
2	Red Hill	L-4	1947
3	Buckhorn Mountain	L-4	1940
4	Dry Diggins - **IDAHO**	R-6	1968 NHLR, 1969 NRM
5	Heaven's Gate LO House - **IDAHO**	R-6	1978
6	Hat Point	L-6	1948
7	Mule Peak	L-4-AR	1924 FFLA
8	Johnson Rock	L-4	1952
9	Point Prominence	L-4	1954
10	Unity Ranger Station LO (Unity Upper Compound)	6x6 Aermotor	1938 FFLA, 1935 NRM
11	Summit Point	L-4	1949 FFLA, 1951 NRM
12	Table Rock	L-4	1949 FFLA, 1940 NRM
13	Mt Ireland	CL-100	1958
14	Russell Mountain	L-4	1950
15	Halfway (Pine) Ranger Station Lookout	L-6	1938
16	McGraw Mountain	R-6	1965

MULE PEAK

Mule Peak Lookout c.1936
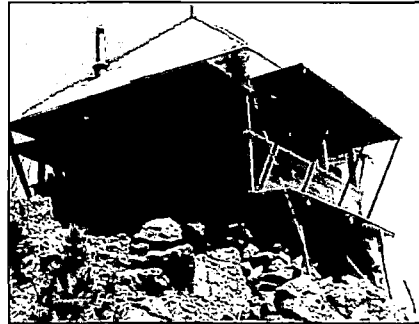
Mule Peak c.1960
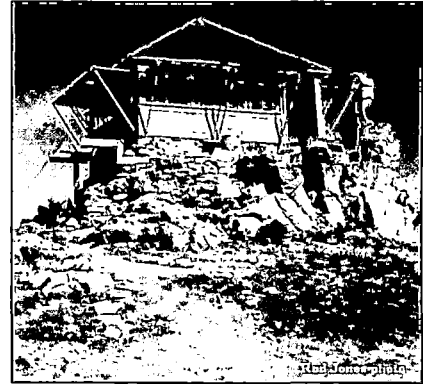
Mule Peak Lookout c.1988

Year Built:	1924
Ranger District:	La Grande
Lat/ Long:	45.1304395/ -117.50299
Access:	Trail
Current Use:	**Inactive, Emergency Fire**
NRHP Status:	Unevaluated

About: Mule Peak is located in Eagle Cap Wilderness and is used only for emergency fire incidents. The lookout was threatened by wildfire in 2005 & 2007. The lookout was wrapped and retardant drops were deployed. Firefighters were evacuated by helicopter in both incidents.

Partners:	Unknown
Deferred Maintenance:	$26,561.66
Replacement Value:	$95,825.36

AERMOTOR*

UNITY RANGER STATION LOOKOUT

Unity Ranger Station Lookout

Unity Guard Station c. 1935, National Archives

Year Built: 1935
Ranger District: Whitman, upper Unity compound
Lat/ Long: 44.436584/ -118.18772
Access: Road
Current Use: Inactive, Town Christmas Tree and Emergency Fire
NRHP Status: Unevaluated

About: The Unity Ranger Station lookout is a 6' x 6' (likely Aermotor but could be an L-6) cab on a 60-foot treated timber tower. Located in the town of Unity, the lookout is wrapped in Christmas lights and celebrated as the town Christmas tree. Due to major hazards, the lookout is planned for decommissioning and demolition.

Partners: Town of Unity
Deferred Maintenance: $86,142.53
Replacement Value: $86,142.53

*The cab has been designated Aermotor but it might be an L-6.
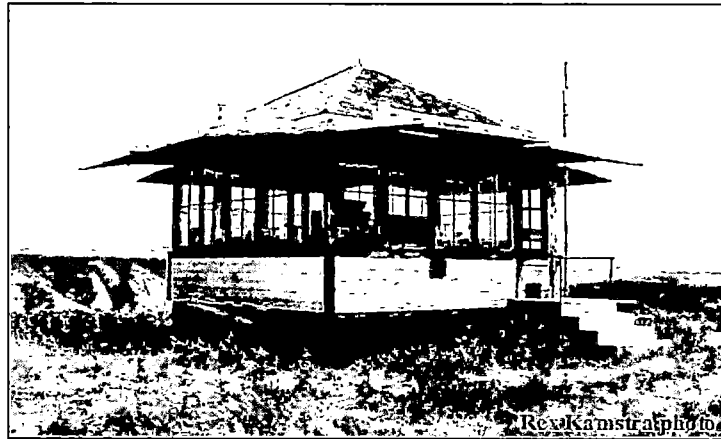
HARL BUTTE LOOKOUT

Harl Butte Lookout

Year Built: 1954
Ranger District: Wallowa Valley
Lat/ Long: 45.328549/ -116.87719
Access: Road
Current Use: Fire Detection
NRHP Status: Unevaluated

About: According to the NHLR, Harl Butte is an, "outrigger hip roof L-4 ground house w/o catwalk". The lookout is named for a local homesteader, John Harl

Partners: Unknown
Deferred Maintenance: $4,175.22
Replacement Value: $61,252.35

RED HILL LOOKOUT

Red Hill Lookout

Year Built:	1947
Ranger District:	Wallowa Valley
Lat/ Long:	45.7885758/ -117.10269
Access:	Road
Current Use:	**Inactive, Emergency Fire**
NRHP Status:	Unevaluated

About: Red Hill lookout is an L-4 cab on a 40-foot treated timber tower. Major hazards need to be abated if it is to be converted into a recreation rental. According to the WWLL, Red Hill was, "developed with a pole platform and a tent in 1917, a 26' pole tower with 10x10' cab was built in 1936. The present 40' treated timber L-4 tower, built in 1947, is available for emergencies".

Partners:	Unknown
Deferred Maintenance:	$51,324.76
Replacement Value:	$51,324.76

BUCKHORN MOUNTAIN LOOKOUT

Buckhorn Mountain Lookout c.1952
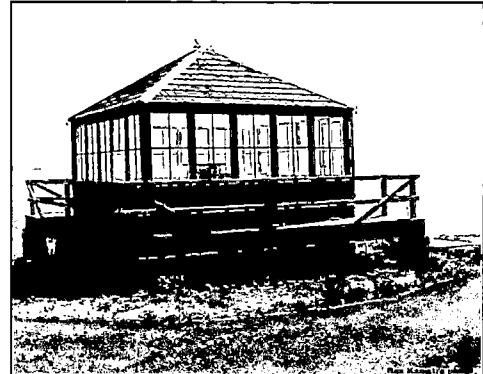
Buckhorn Mountain Lookout c.2008

Year Built: 1940
Ranger District: Hells Canyon
Lat/ Long: 45.753775/ -116.82294
Access: Road
Current Use: **Inactive**
NRHP Status: Unevaluated

About: Buckhorn Mountain is an L-4 cab with a catwalk on stone piers. Major hazards need to be abated before it could be converted into a recreation rental. According to NRM, Buckhorn Mountain is considered excess and is awaiting a historic evaluation.

Partners: Unknown
Deferred Maintenance: $40,874.62
Replacement Value: $40,874.62

JOHNSON ROCK LOOKOUT

Johnson Rock Lookout

Year Built:	1952
Ranger District:	La Grande
Lat/ Long:	45.1254642/ -118.4030822
Access:	Road
Current Use:	Fire Detection
NRHP Status:	Unevaluated

About: Johnson Rock is a L-4 cab on an 82-foot treated timber tower.

Partners:	Unknown
Deferred Maintenance:	$4,975.51
Replacement Value:	$60,228.03

POINT PROMINENCE LOOKOUT

Point Prominence Lookout c. 1930s

Point Prominence Lookout c.2007

Year Built:	1954
Ranger District:	La Grande
Lat/ Long:	45.3718195/ -117.7021972
Access:	Road
Current Use:	**Fire Detection**
NRHP Status:	Unevaluated

About: Point Prominence was originally established in 1931 with a L-4 cab on a 30-foot pole tower. It was replaced in 1954 with the current L-4 cab on an 82-foot treated timber tower. According to the FFLA, the "new cab was built 1/8 mi east of 1931 location".

Partners:	Unknown
Deferred Maintenance:	$13,091.69
Replacement Value:	$60,228.03

SUMMIT POINT LOOKOUT
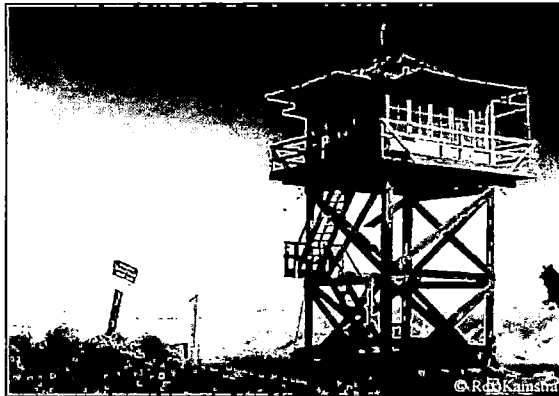
Summit Point Lookout

Summit Point Lookout c. 2017

Year Built: 1951
Ranger District: Whitman
Lat/ Long: 44.9828921/ -117.23923
Access: Road
Current Use: Fire Detection
NRHP Status: Unevaluated

About: Summit Point is a L-4 cab on a 20-foot treated timber tower. The lookout is located on the southern aspect of the ridge against an extreme cliff.

Partners: Unknown
Deferred Maintenance: $12,348.26
Replacement Value: $78,128.93
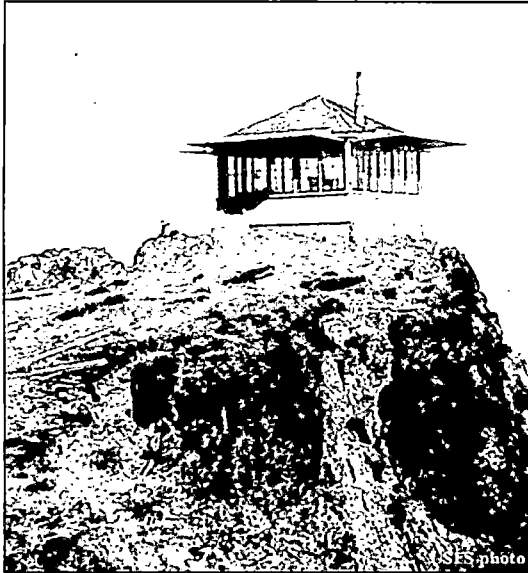
TABLE ROCK LOOKOUT

Table Rock Lookout c.1942
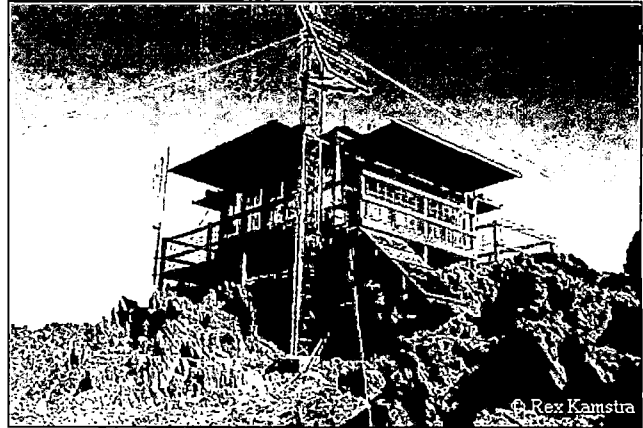
Table Rock Lookout c. 2005

Year Built:	1940
Ranger District:	Whitman
Lat/ Long:	44.334035/ -118.31653
Access:	Trail
Current Use:	Fire Detection
NRHP Status:	Unevaluated

About: Table Rock lookout is a L-4 ground cab in the Monument Rock Wilderness and is currently used by fire. It has been remodeled and solar panels added to the exterior. According to the NHLR, "Table Rock Lookout began as a cupola built in the early 1920s. It was replaced with a 14' x 14' L-4 cab with catwalk in 1937, and again with a new L-4 in 1949".

Partners:	Unknown
Deferred Maintenance:	$36,649.16
Replacement Value:	$62,175.90

RUSSELL MOUNTAIN LOOKOUT

Russell Mountain Lookout c.1921

Russell Mountain Lookout

Year Built: 1950
Ranger District: Whitman
Lat/ Long: 45.0683902/ -117.08696
Access: Trail
Current Use: **Inactive, Emergency Fire**
NRHP Status: Unevaluated

About: Russell Mountain is a L-4 cab on an 82-foot treated timber tower. According to the WWLL, Russell Mountain was, "established about 1921 with a 50' pole tower and open cab, the present 82' treated timber tower was built in 1949 with an open platform on top. The L-4 cab was added in 1950. Now available for emergencies, the tower was threatened by a forest fire in the 1990's".

Partners: Unknown
Deferred Maintenance: $57,056.29
Replacement Value: $102,045.95

HAT POINT LOOKOUT

Hat Point Lookout

Hat Point Lookout c.2002

Year Built: 1948
Ranger District: Hells Canyon
Lat/ Long: 45.43779/ -116.66176
Access: Road
Current Use: Inactive
NRHP Status: Unevaluated

About: Hat Point is a 7' x 7' L-6 cab with a catwalk on an 82-foot treated timber tower with a wooden deck platform foundation. The tower was restored in the 1980's and an observation deck was added around the tower at 60-feet.

Partners: Hells Canyon National Recreation Area.
Deferred Maintenance: $17,222.50
Replacement Value: $47,562.44

HALFWAY (PINE) RANGER STATION LOOKOUT

July 10, 2008 - Ron Kemnow photo

Halfway (Pine) Ranger Station Lookout c.2008
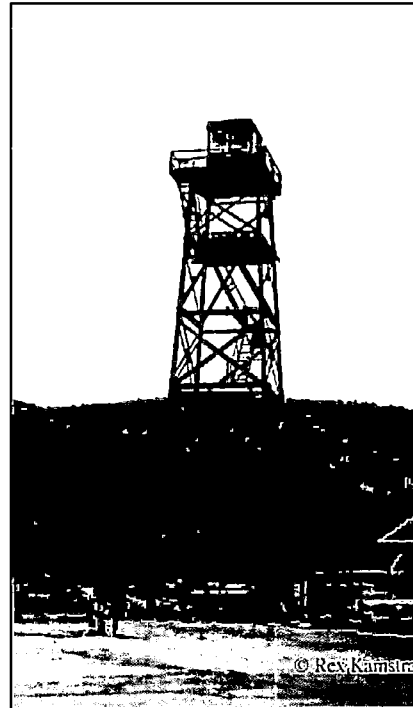
Halfway (Pine) Ranger Station Lookout

Year Built:	1938
Ranger District:	Whitman
Lat/ Long:	44.86004/ -117.08832
Access:	Road
Current Use:	**Inactive, Emergency Fire**
NRHP Status:	Unevaluated

About: According to firelookout.com, "this 52' treated timber tower with 7x7' cab was built in the yard of the Pine Ranger Station in 1938". The lookout is planned for decommissioning and demolition because of major hazards.

.

Partners:	Unknown
Deferred Maintenance:	$31,904.64
Replacement Value:	$31,904.64

MT IRELAND LOOKOUT

Mt Ireland Cupola being blown-up in 1957.

Mt Ireland Lookout c.1980

Year Built: 1958
Ranger District: Whitman
Lat/ Long: 44.8368925/ -118.32061
Access: Trail
Current Use: Fire Detection
NRHP Status: Unevaluated

About: According to the WWLL, Mt Ireland was "previously known as Bald Mountain, the name was changed to honor former Whitman National Forest supervisor Henry Ireland who died in 1916. First used as a camp in 1915, a cabin with rooftop observation platform was built in 1916. A cupola was added to the cabin later. In 1957, the cabin was blasted off the summit to make room for the present all-steel live-in cab, which is staffed every summer".

Partners: Unknown
Deferred Maintenance: $5,798.77
Replacement Value: $78,128.93

DRY DIGGINS LOOKOUT - IDAHO
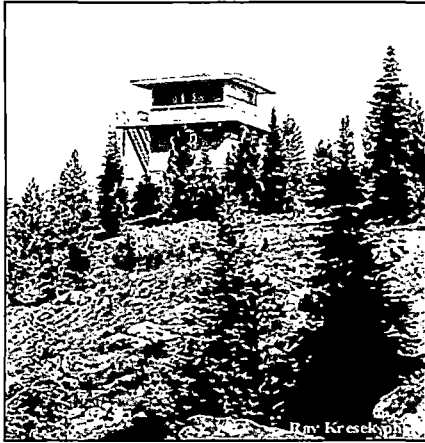
Dry Diggins Lookout c.1988
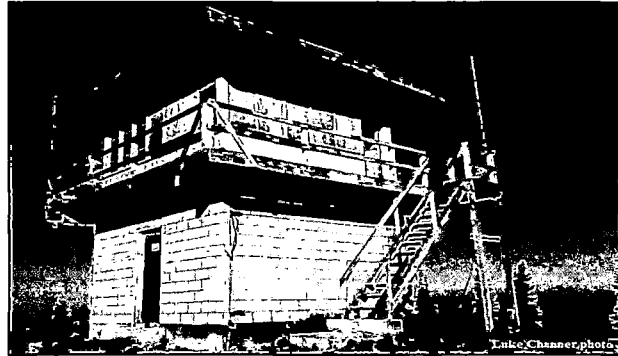
Dry Diggins Lookout c.2015

Year Built: 1969
Ranger District: Hells Canyon
Lat/ Long: 45.371741/ -116.58938
Access: Trail
Current Use: **Inactive, Emergency Fire**
NRHP Status: Unevaluated

About: Dry Diggins lookout is a R-6 cab on a 10-foot concrete base. Located in Idaho, the lookout is planned for decommissioning and demolition because of major hazards

Partners: Hells Canyon National Recreation Area, Twin Rivers Back Country Horsemen of North Central Idaho.
Deferred Maintenance: $1,314.29
Replacement Value: $268,341.25

HEAVENS GATE LOOKOUT- IDAHO

Heaven's Gate Lookout c.1978
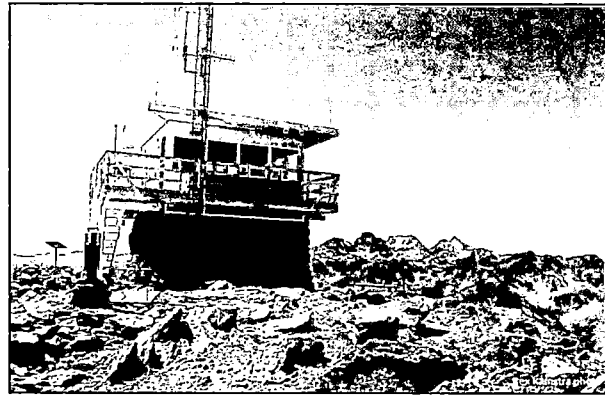
Heaven's Gate Lookout c.2017

Year Built: 1978
Ranger District: Hells Canyon
Lat/ Long: 45.3688/ -116.4949
Access: Trail
Current Use: Fire Detection
NRHP Status: Unevaluated

About: According to the NHLR, "the original 1924 log cabin with cupola was destroyed in a 1958 fire. Twenty years later this R-6 flattop with catwalk on a 10' stone base was constructed".

Partners: Hells Canyon National Recreation Area
Deferred Maintenance: $8,450.15
Replacement Value: $176,885.10

MCGRAW LOOKOUT

McGraw Mountain 2015. Dennis Poulin photo, peakbagger.com
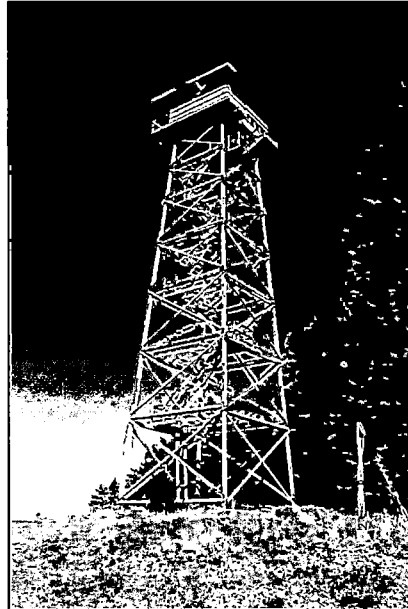
McGraw Mountain 2018. Rex Kamastra photo, oregonlookouts.weebly.com

Year Built: 1965
Ranger District: Hells Canyon
Lat/ Long: 45.176375/ -116.7782722
Access: Road
Current Use: Inactive
NRHP Status: Unevaluated

About: McGraw Mountain is a R-6 cab on an 82-foot timber tower. The lookout is planned for demolition due to major hazards. Originally, the peak had a L-4 on a 10-foot pole tower in 1934.

Partners: Hells Canyon National Recreation Area
Deferred Maintenance: $77,043.29
Replacement Value: $77,043.29

#	NAME	STYLE	YEAR
1	Indian Ridge Lookout	R-6	1957 NRHL, 1952 NRM
2	Dee Wright Observatory		1935 USFS web, 1934 NRM
3	Olallie Mountain*	L-4	1932
4	Carpenter Mountain	L-4	1935
5	Sand Mountain	L-4	1989
6	Gold Butte	L-4	1934
7	Huckleberry Mountain	L-4	1939
8	Waldo Mountain	R-6	1957
9	Warner Ridge Lookout	D-6 Replica	1986 FFLA & NHRL, 1962 NRM
10	Saddleblanket Mountain Tree	Crow Nest	1922
11	Saddleblanket Mountain	Aermotor	1927 NHLR, 1926 NRM
12	Little Cowhorn	R-6	1960

*Olallie Mountain burned down over the winter of 2019 and was found in the spring of 2020.

SADDLEBLANKET MOUNTAIN TREE

Saddleblanket Mountain Lookout Tree c.1922

Year Built:	1922
Ranger District:	Middle Fork
Lat/ Long:	43.893675/ -122.510024
Access:	Trail
Current Use:	**Inactive**
NRHP Status:	Unevaluated

About: The Crow Nest is located in a 30-foot tree next to the Aermotor.

Partners:	Unknown
Deferred Maintenance:	$0
Replacement Value:	$0

AERMOTOR

SADDLEBLANKET MOUNTAIN TOWER

Alice Bowerman photo
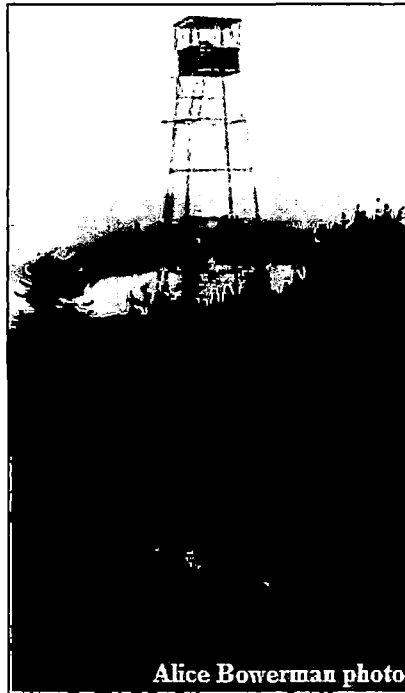
Saddleblanket Mountain Lookout
c.1927

Robert Seymour photo

Saddleblanket Mountain Lookout
c.2007

Year Built:	1926
Ranger District:	Middle Fork
Lat/ Long:	43.99373/ -120.510375
Access:	Trail
Current Use:	**Inactive**
NRHP Status:	Eligible

About: Saddleblanket Mountain lookout is a 6' x 6' Aermotor lookout on a 70-foot steel braced tower. Due to major hazards and aerial coverage of the area, the lookout was abandoned and the Forest tried to sell the lookout in 1969. According to the NHLR, "the 70-foot tall Aermotor type LX-24 tower with a 7x7 cab was erected in 1927. This is the oldest lookout structure remaining on the National Forest and the only 6'x6' Aermotor constructed on the Forest". The sizes that the NHLR gives for the cab are contradictory and should be remeasured.

Partners:	Unknown
Deferred Maintenance:	$0
Replacement Value:	$9,502.63

L-4

OLALLIE MOUNTAIN LOOKOUT
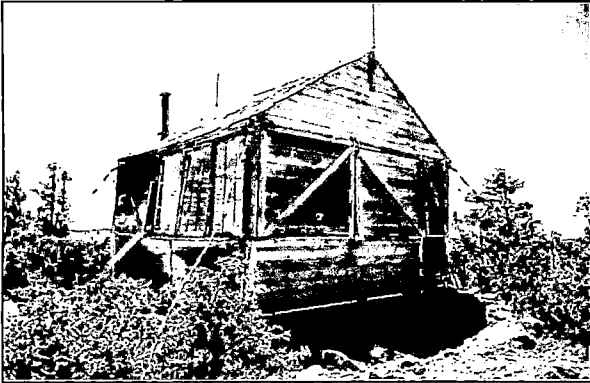
Olallie Mountain, Cheryl Hill
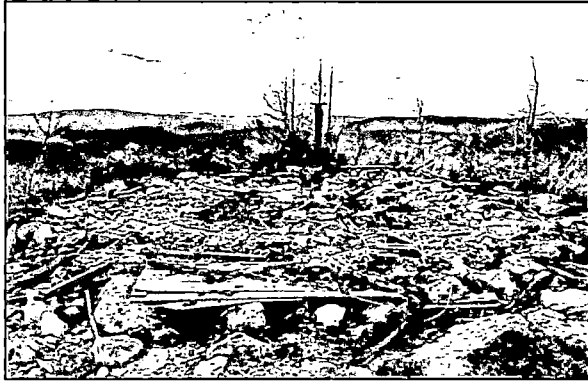
"Olallie Mountain Lookout after it burned down. Photo by Steve Johnson", The Statesman Journal, 2020.

Year Built:	1932
Ranger District:	McKenzie River
Lat/ Long:	44.02943056/ -122.0688222
Access:	Trail
Current Use:	**GONE- Wildfire 2020**
NRHP Status:	Eligible

About: Olallie Mountain was an L-4 gable ground house in the Three Sisters Wilderness. It burned down during the winter of 2019/2020. This lookout was the last lookout standing in the Three Sisters Wilderness and would be an excellent candidate for reconstruction.

Partners:	Sand Mountain Society (SMS), Forest Fire Lookout Assoc.
Deferred Maintenance:	$0
Replacement Value:	$0

CARPENTER MOUNTAIN LOOKOUT
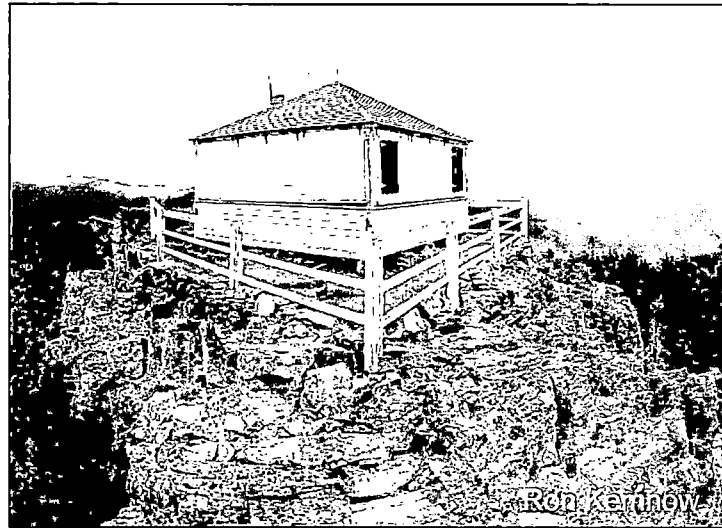
Carpenter Mountain Lookout c.2008

Year Built: 1935
Ranger District: McKenzie River
Lat/ Long: 44.28177/ -122.1435
Access: Trail
Current Use: Fire Detection
NRHP Status: Eligible

About: Carpenter Mountain is an L-4 ground cab surrounded by a catwalk. The lookout was constructed by the CCC and it was restored in recent years,

Partners: Sand Mountain Society (SMS)
Deferred Maintenance: $5,426.65
Replacement Value: $51,736.55

SAND MOUNTAIN LOOKOUT

Sand Mountain Lookout c.1989

Sand Mountain Lookout c.2004

Year Built:	1989
Ranger District:	McKenzie River
Lat/ Long:	44.384767/ -121.928
Access:	Road
Current Use:	Fire Detection and Interpretive Site
NRHP Status:	Unevaluated

About: The Sand Mountain lookout is a L-4 cab on a 10-foot treated timber tower. The structural members used were salvaged from the original 1930 lookout tower and remains of Whiskey Peak lookout from the Rogue River-Siskiyou National Forest in 1989.

Partners:	Sand Mountain Society (SMS)
Deferred Maintenance:	$12,329.50
Replacement Value:	$51,736.55
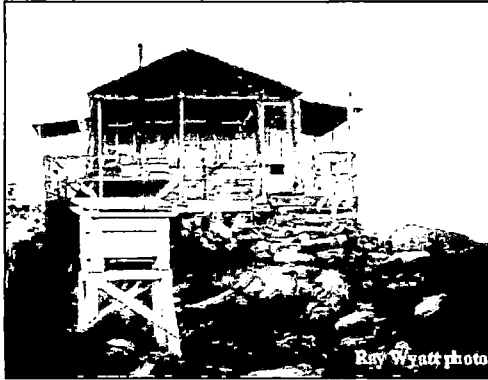
GOLD BUTTE LOOKOUT

Gold Butte Lookout

Gold Butte Lookout, NHLR

Year Built: 1934
Ranger District: Detroit
Lat/ Long: 44.80509339/ -122.0833821
Access: Road
Current Use: Recreation Rental (July to October)
NRHP Status: Unevaluated

About: The Gold Butte L-4 ground cab with a catwalk was built by the CCC is 1934. Originally, the CCC built a complex at Gold Butte that included a garage and cabin that hosted the AWS during WWII--these structures are no longer standing. According to NRM, the lookout was, "renovated to historic standard by Sand Mt Society in 2006. According to the WWLL, "this L-4 ground cab, built in 1934, was last used in the 1970's. The Sand Mountain Society completely restored the structure, literally tearing the cab down to ground level and starting over due to rot and insect damage".

Partners: Pacific Crest Trail Fund and the Sand Mountain Society (SMS)
Deferred Maintenance: $411.82
Replacement Value: $52,260.66

HUCKLEBERRY MOUNTAIN LOOKOUT
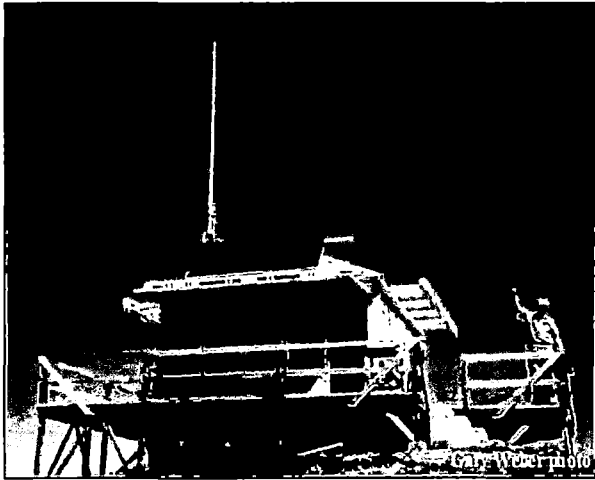
Huckleberry Mountain Lookout
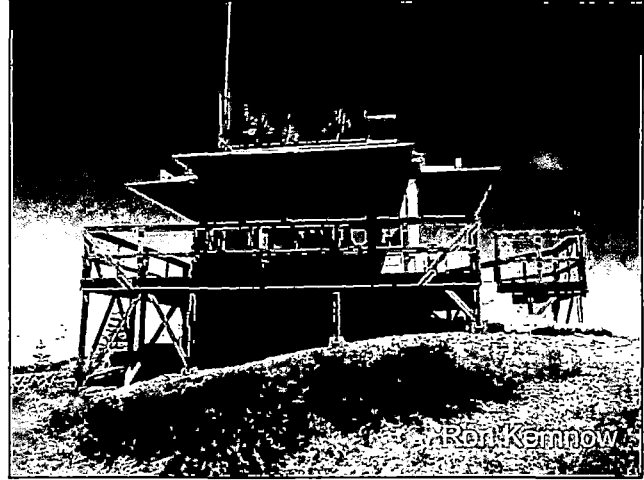
Huckleberry Mountain Lookout c.2007

Year Built: 1939
Ranger District: Middle Fork
Lat/ Long: 43.846405/ -122.318038
Access: Road
Current Use: Fire Detection and Communication Site
NRHP Status: Eligible
About: Huckleberry Mountain is a L-4 ground cab with a catwalk. The lookout was restored by volunteers in 1990 and 1991.

Partners: Volunteers and the Sand Mountain Society (SMS)
Deferred Maintenance: $500.00
Replacement Value: $55,432.02

INDIAN RIDGE LOOKOUT

Indian Ridge Lookout c.2006

Year Built:	1952
Ranger District:	McKenzie River
Lat/ Long:	44.005475/ -122.2549278
Access:	Road
Current Use:	Recreation Rental, Communication Site, and Emergency Fire
NRHP Status:	Unevaluated

About: Originally, Indian Ridge was established with a cathedral in 1918. It was replaced with the current R-6 with a catwalk on a 20-foot treated timber tower.

Partners:	Unknown
Deferred Maintenance:	$2,162.38
Replacement Value:	$51,736.55

WALDO MOUNTAIN LOOKOUT
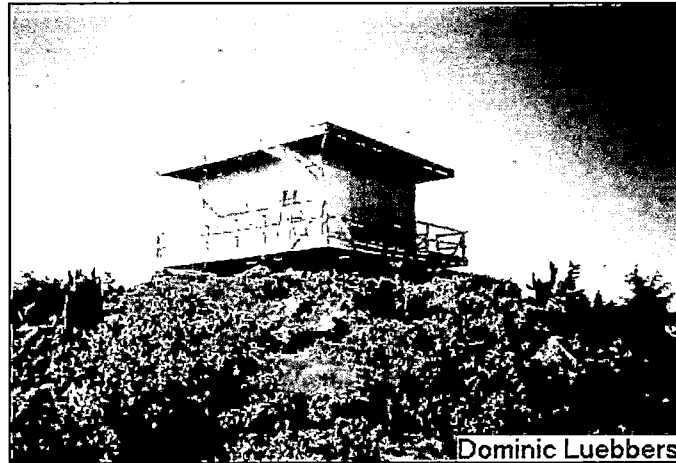
Waldo Mountain Lookout

Year Built: 1957
Ranger District: Middle Fork
Lat/ Long: 43.765075/ -122.098921
Access: Trail
Current Use: **Inactive, Emergency Fire**
NRHP Status: Unevaluated
About: Located in Waldo Lake Wilderness, Waldo Mountain is a R-6 ground cab.

Partners: Sand Mountain Society (SMS)
Deferred Maintenance: $500.00
Replacement Value: $63,350.88

LITTLE COWHORN LOOKOUT

Howard Verschoor photo

Little Cowhorn Lookout

Year Built:	1960
Ranger District:	Middle Fork
Lat/ Long:	44.038567/ -122.5036
Access:	Trail
Current Use:	**Inactive**
NRHP Status:	Unevaluated

About: Little Cowhorn lookout is a R-6 cab on a 4-foot wooden foundation. The lookout was partially restored in the 1990's and is located off a popular trail.

Partners:	Unknown
Deferred Maintenance:	Unknown
Replacement Value:	Unknown

COFFIN MOUNTAIN LOOKOUT

Coffin Mountain lookout 2009, Ron Kemnow photo

Year Built:	1984
Ranger District:	Detroit
Lat/ Long:	44.621383/ -122.044333
Access:	Road
Current Use:	Fire Detection
NRHP Status:	Unevaluated

About: According to firelookout.com, Coffin Mountain is a, "long-time lookout site, the first structure was a cabin and platform tower built in 1906. This was replaced by a D-6 cupola cabin in 1921, followed by an L-4 cab in 1936. The present modified R-6 flat cab, built in 1984, is staffed in the summer". The lookout is located in the Middle Santiam Wilderness.

Partners:	Volunteers
Deferred Maintenance:	$0
Replacement Value:	$192,871.36

WARNER RIDGE LOOKOUT

Warner Ridge Lookout

Sue Bula photo

Warner Ridge Lookout c.2000

Year Built:	1986
Ranger District:	Middle Fork
Lat/ Long:	43.5434/ -122.366389
Access:	Road
Current Use:	Fire Detection (summer) and Recreation Rental (winter)
NRHP Status:	Unevaluated

About: The superstructure for Warner Ridge came from Grass Mountain in 1986 and dates to 1962. A replica cupola cabin was built on top. According to the NHLR, "Although of recent construction (1987), the 41' tower is historically unique in the U.S. The 14'x14' live-in cab is a replica of the cupola design of the 1920s. Most of the cupola buildings were on the ground and a few were on short crib structures".

Partners:	Unknown
Deferred Maintenance:	$9,933.13
Replacement Value:	$84,467.84

APPENDIX B: INVENTORY OF WASHINGTON

0603   **GIFFORD PINCHOT NATIONAL FOREST (GIP/GP)**

#	NAME	STYLE	YEAR
1	Red Mountain	R-6	1959
2	Highrock	L-4 gable	1929
3	Burley Mountain	L-4	1934
4	Mt Adams	D-6	1918
5*	House Rock	Cabin	1935
6*	Watch Mountain	R-6	1963

*These lookouts were found after the inventory was finalized and they need to be added to the overall total and maps.

MT ADAMS

Mt Adams Lookout, trailchick.com

Mt Adams D-6, willhiteweb.com

Year Built:	1918
Ranger District:	Mt. Adams
Lat/ Long:	46.201441/ -121.49031
Access:	Trail
Current Use:	**Inactive**
NRHP Status:	Unknown

About: According to firelookout.com, "The highest lookout site in Washington state, construction began on the D-6 cupola cabin in 1918. The lookout was staffed from 1922-1924 then abandoned. Sulfur miners took over the cabin in the 1930s, adding a couple of additions and recycling the cupola in the process. The cabin is still there, encased in ice most of the time".

Partners:	Unknown
Deferred Maintenance:	Unknown
Replacement Value:	Unknown

CABIN

HOUSE ROCK
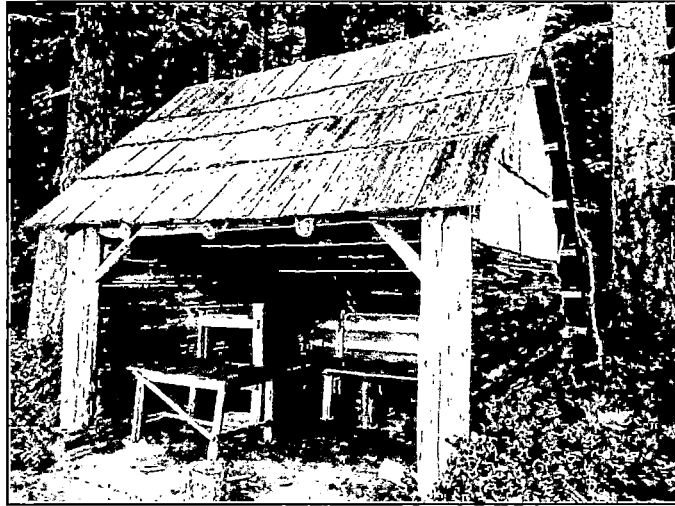
House Rock 3-sided lookout cabin, willhiteweb.com

Year Built: 1935
Ranger District: Mt. Adams
Lat/ Long: 46.68449/ -121.90303
Access: Trail
Current Use: **Inactive, Trail Shelter**
NRHP Status: Unknown

About: According to willhiteweb.com, "built in 1935, the three-sided Adirondack shelter is on the summit of House Rock. It was constructed as an emergency fire lookout. The shelter sits just back from the top of a high cliff with a panoramic view of the Lewis and Muddy River Valleys and Mount St. Helens. Volunteers refurbished the shelter in 1991 and the inside seems to change year to year. It is assumed a firefinder was once on a stump in front of the shelter and not inside".

Partners: Unknown
Deferred Maintenance: Unknown
Replacement Value: Unknown

HIGHROCK LOOKOUT (06030500077)
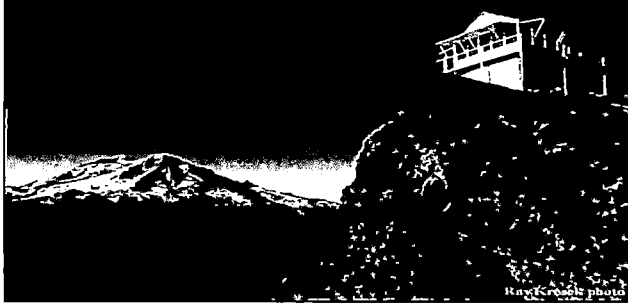
High Rock Lookout

High Rock, DAHP

Year Built: 1929
Ranger District: Cowlitz
Lat/ Long: 46.6845/ -121.8899739
Access: Trail
Current Use: Inactive
NRHP Status: Eligible

About: High Rock lookout is only accessible in the summer via a 1.6-mile trail. The lookout is a L-4 ground house and catwalk on a ½ story foundation. The lookout is perched on the edge of a 1200-foot sheer cliff. According to the NHLR, "Undoubtedly one of the most spectacular lookouts in America, High Rock is on the Gifford Pinchot National Forest just south of Mt. Rainier National Park".

Partners: Unknown
Deferred Maintenance: $49,511.52
Replacement Value: $105,532.08

BURLEY MOUNTAIN LOOKOUT (06030500009)

Burley Mountain Lookout, Photo by Gary Weber, WWLL

Year Built:	1934
Ranger District:	Cowlitz
Lat/ Long:	46.4075/ -121.8641
Access:	Road
Current Use:	Recreation Rental
NRHP Status:	Eligible

About: Burley Mountain is a L-4 ground cab without a catwalk. The lookout is located equidistant from Mt Rainier, Mount St Helens, & Mt Adams. A DOE was conducted in 1991 and found the lookout to be eligible for inclusion in the National Register.

Partners:	Unknown
Deferred Maintenance:	$52,784.76
Replacement Value:	$121,935.10

RED MOUNTAIN (06030300031)

Red Mountain Lookout No. 4037, DAHP
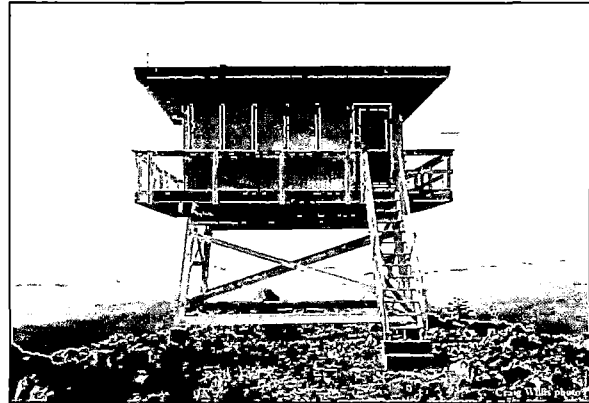
Red Mountain Lookout c.2013

Year Built: 1959
Ranger District: Mt. Adams
Lat/ Long: 45.93467/ -121.820929
Access: Trail
Current Use: **Inactive**
NRHP Status: Eligible

About: Red Mountain lookout is a R-6 on a 10-foot treated timber tower. The area is subject to severe weather conditions and the roof collapsed in 2003. The roof was rebuilt in 2003 and is now covered with a fibrous roof membrane. Rehabilitation and restoration work was completed in 2007-2008. There is a CCC garage on-site that has been recently renovated. From 1942 to 1943, the lookout was staffed 24/7 by the AWS.

Partners: Unknown
Deferred Maintenance: $6,175.62
Replacement Value: $67,623.17

WATCH MOUNTAIN

Watch Mountain, willhiteweb.com

Year Built:	1963
Ranger District:	Unknown
Lat/ Long:	Unknown
Access:	Road
Current Use:	**Inactive, Communication Site**
NRHP Status:	Unknown

About: According to willhiteweb.com, "This is the second lookout built on Watch Mountain, built in 1963 at the end of lookout construction days. The original lookout was 2 miles to the east on the most eastern point of this long ridgeline. This present 14 x14 foot DNR flattop cab with catwalk is not used for anything fire related. Solar panels on top with numerous batteries inside assist some sort of radio communication equipment. Almost all the windows have been covered by insulation, so inside looks bleak. Someone pointed out on the NHLR.org page that in this unique situation it seems the agencies who own the equipment take care of the lookout so that it continues to house their items. It is likely that this use saved the tower from being removed long ago".

Willhiteweb.com also has a request for the Forest Service: if you ever decide to remove this lookout (appears to be in danger of neglect), consider flying just the cab to the original location to the east. No access across private land is required to reach the original location. Minimal work by volunteers would be needed to clear the trail to just below the site, then easy to make a new trail up the ridge to the old lookout site. The location would be quite an attraction and a popular destination year-round.

Partners:	Unknown
Deferred Maintenance:	$6,175.62
Replacement Value:	$67,623.17

#	NAME	STYLE	YEAR
1	Park Butte	L-4	1932
2	Lookout Mountain Cathedral	Cathedral Cupola	1928
3	Lookout Mountain	R-6	1967 NHLR, 1962 NRM
4	Hidden Lake Peak	L-4 Gable	1931
5	Winchester Mountain	L-4	1935
6	Green Mountain	L-4	1933
7	Three Fingers	L-4	1933
8	North Mountain	R-6	1966 NHLR, 1965 NRM
9	Miners Ridge	L-4	1953 NHLR, 1938 NRM
10	Kelly Butte	L-4	1950 NHLR, 1936 NRM
11	Suntop	L-4	1932 NHLR, 1933 NRM
12	Granite Mountain	L-4	1955
13	Heybrook	R-6	1964
14	Evergreen Mountain	L-4	1935 NHLR, 1934 NRM

LOOKOUT MOUNTAIN CATHEDRAL

Lookout Mountain Lookout c.1961
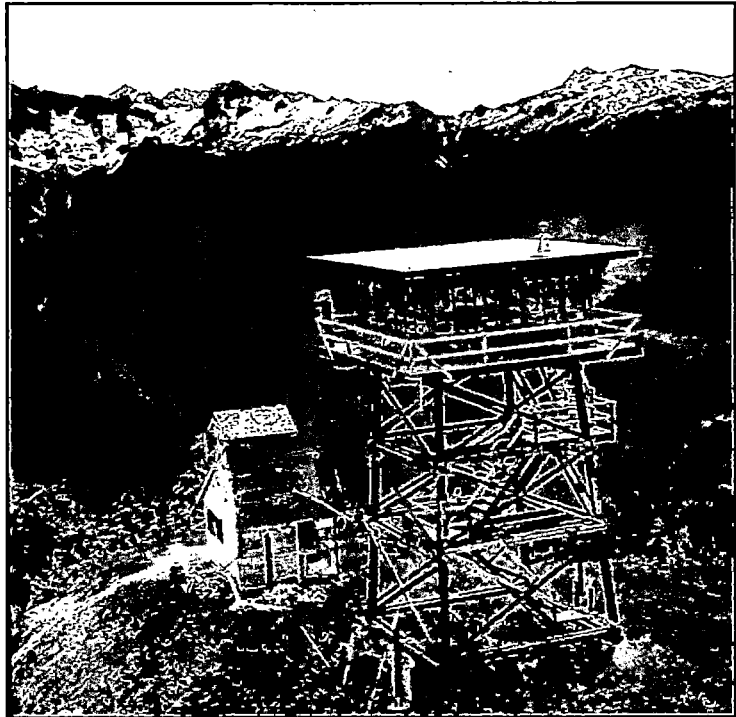
Lookout Mountain Lookout, NHLR

Year Built: 1928
Ranger District: Mt. Baker
Lat/ Long: 48.552285/ -121.329005
Access: Trail
Current Use: **Inactive**
NRHP Status: Unevaluated

About: Not much is known about the Lookout Mountain cathedral other than it was the first lookout constructed on Mt Baker National Forest. The lookout is in poor condition and may no longer be standing. If it isn't, this lookout would make an excellent candidate for reconstruction.

Partners: Unknown
Deferred Maintenance: Unknown
Replacement Value: Unknown

PARK BUTTE LOOKOUT (06050100043)
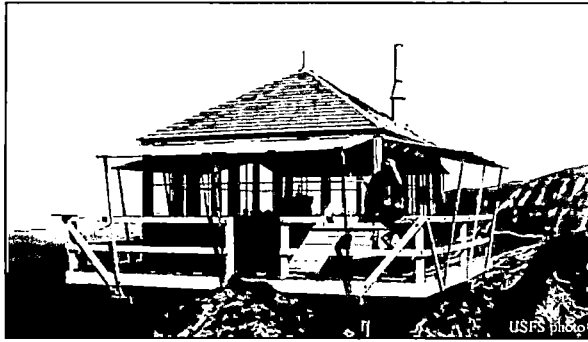
Park Butte Lookout c.1933
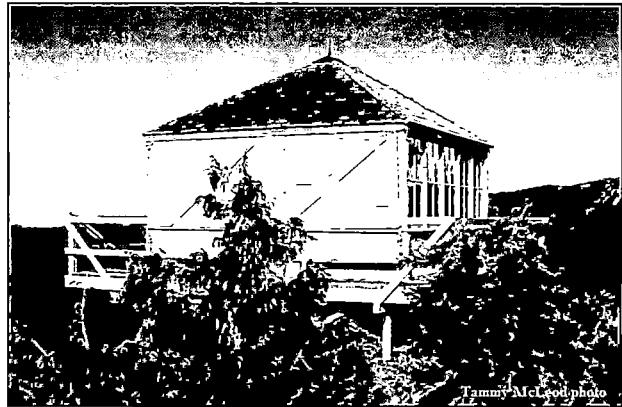
Park Butte Lookout c.2006

Year Built: 1932
Ranger District: Mt. Baker
Lat/ Long: 48.4257/ -121.51215
Access: Trail
Current Use: Recreation Rental (winter)
NRHP Status: Listed

About: Park Butte is a L-4 ground cab with a catwalk. The lookout was abandoned in the 1960's and, according to NRM, the lookout was reconstructed in 1993 and served as an observatory for volcano monitors in the 1970's.

Partners: Volunteers and the Skagit Alpine Club
Deferred Maintenance: $40,777.62
Replacement Value: $105,007.98

HIDDEN LAKE PEAK LOOKOUT (06050100002)

Fred Darvill photo
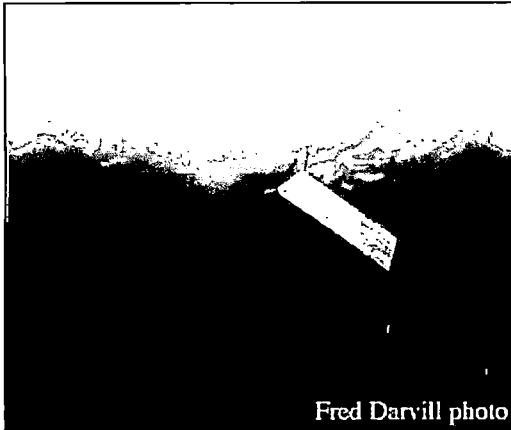
Hidden Lake Peak Lookout c.1980

Hidden Lake Peak Lookout c.2014

Year Built:	1931
Ranger District:	Mt. Baker
Lat/ Long:	48.49533/ -121.204862
Access:	Trail
Current Use:	Recreation Rental
NRHP Status:	Listed

About: Hidden Lake Peak is an L-4 gable ground house. The lookout was abandoned in 1958.

Partners:	Dr. Fred Darvill and the Skagit Alpine Club
Deferred Maintenance:	$40,777.62
Replacement Value:	$105,007.98

WINCHESTER MOUNTAIN (06050300012)

Winchester Mountain, DAHP

Winchester Mountain c.2005

Year Built: 1935
Ranger District: Mt Baker
Lat/ Long: 48.95643/ -121.642859
Access: Trail
Current Use: **Inactive, open to the public**
NRHP Status: Listed

About: Located in the Mt Baker Wilderness, Winchester mountain L-4 ground cab was restored in 1982.

Partners: Mt. Baker Club
Deferred Maintenance: $40,777.62
Replacement Value: $105,007.98

GREEN MOUNTAIN LOOKOUT (06050200012)
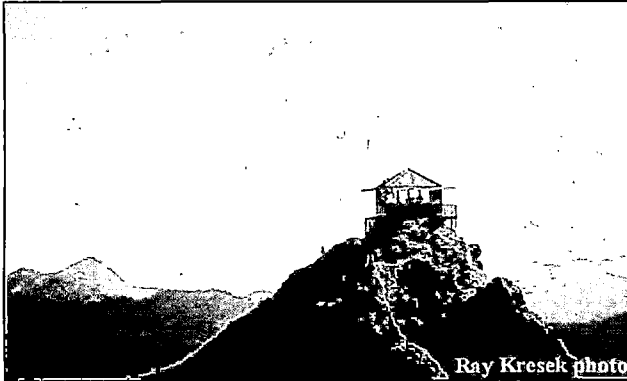
Green Mountain Lookout

Green Mountain Lookout, NHLR

Year Built: 1933
Ranger District: Darrington
Lat/ Long: 48.291405/ -121.238447
Access: Trail
Current Use: Inactive
NRHP Status: Listed

About: Located in the Glacier Peak wilderness, this L-4 ground cab was recently restored. This caused controversy and litigation.

Partners: Friends of Green Mountain
Deferred Maintenance: $0
Replacement Value: $78,765.34

THREE FINGERS LOOKOUT (06050200049)

Three Fingers Lookout c.1991

Three Fingers Lookout

Year Built: 1933
Ranger District: Darrington
Lat/ Long: 48.1696/ -121.6877
Access: Trail
Current Use: **Inactive**
NRHP Status: Listed

About: Three Fingers lookout is a L-4 ground cab on a rock outcropping accessible via a set of wooden ladders. According to NRM, "All materials had to be lifted the last 1,000 feet via a windlass made from telephone wire". The lookout was restored in 1986--the restoration effort was led by daughter of the last watchman.

Partners: Friends of Three Fingers
Deferred Maintenance: $0
Replacement Value: $157,530.69

240

MINERS RIDGE LOOKOUT (06050200007)

Miners Ridge Lookout c.2001
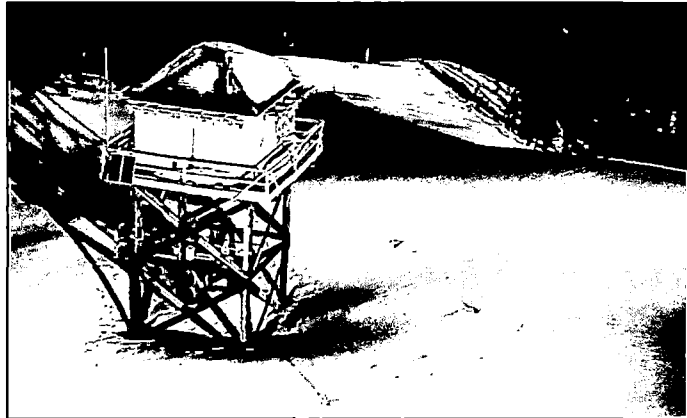
Miners Ridge Lookout c.2018, NHLR courtesy of John Scurlock

Year Built:	1938
Ranger District:	Darrington
Lat/ Long:	48.207/ -121.0289
Access:	**Trail (12 miles)**
Current Use:	**Fire Detection (volunteers)**
NRHP Status:	**Listed**

About: Miners Ridge was first established in 1926 with a 10' x 10' shake cabin and replaced with a L-4 hip cab on a 20-foot treated timber tower. Miners Ridge is accessed by a 12-mile trail through the Glacier Peak Wilderness and is staffed in the summer for fire detection by volunteers. The lookout has been active for over 65 years.

Partners:	Volunteers
Deferred Maintenance:	$0
Replacement Value:	$105,007.98

KELLY BUTTE LOOKOUT (06050500070)
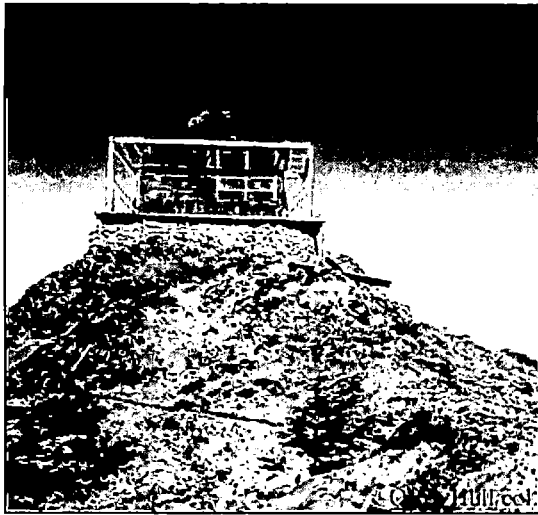
Kelly Butte c.1996
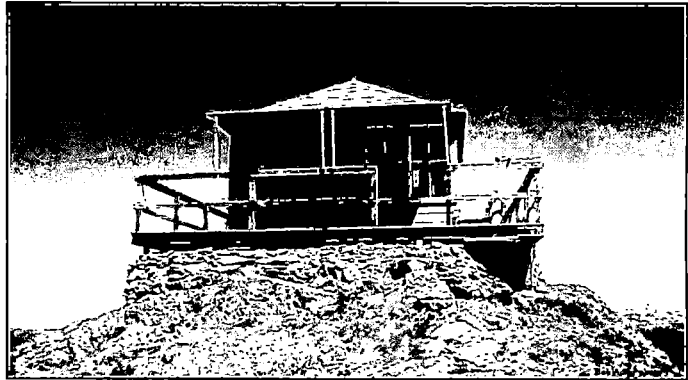
Kelly Butte Lookout c.2011

Year Built: 1936
Ranger District: Snoqualmie
Lat/ Long: 47.1681/ -121.4902
Access: Trail
Current Use: Recreation Rental and Emergency Fire
NRHP Status: Unevaluated

About: Kelly Butte is a L-4 hip ground house. The lookout was completely restored in 2011 with new trail access.

Partners: Unknown
Deferred Maintenance: $0
Replacement Value: $80,487.40

SUNTOP LOOKOUT (06050700027)
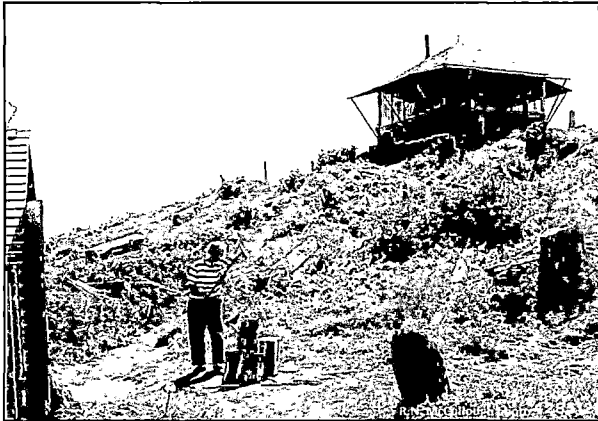
Watchwoman at Suntop Lookout c.1943

Suntop Lookout

Year Built: 1933
Ranger District: Snoqualmie
Lat/ Long: 47.041/ -121.5964
Access: Road
Current Use: Fire Detection (volunteers)
NRHP Status: Listed

About: Suntop lookout is a L-4 ground cab located 15-miles northeast of Mt Rainier. The lookout was used by the AWS during WWII.

Partners: Volunteers
Deferred Maintenance: $31,251.86
Replacement Value: $80,487.40

GRANITE MOUNTAIN LOOKOUT (06050500152)

Granite Mountain Lookout c.1985

Granite Mountain Lookout, NHLR USFS photo

Year Built: 1955
Ranger District: Snoqualmie
Lat/ Long: 47.417075/ -121.481106
Access: Trail
Current Use: Fire Detection (volunteers, June to September)
NRHP Status: Unevaluated
About: Granite Mountain is a L-4 hip cab on a 10-foot treated timber tower.

Partners: Volunteers
Deferred Maintenance: $0
Replacement Value: $80,487.40

EVERGREEN MOUNTAIN LOOKOUT (06050600012)

Evergreen Mountain Lookout c.2004
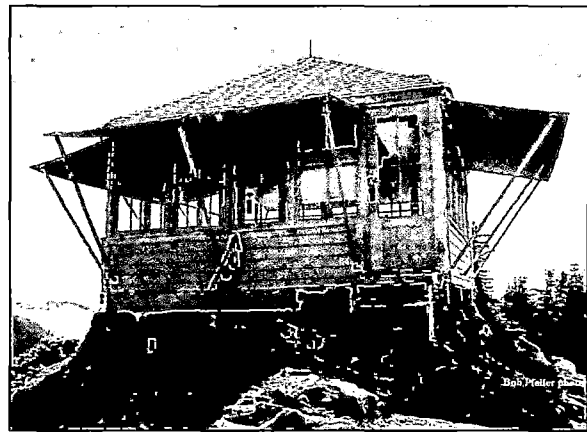
Evergreen Mountain Lookout c.2004

Year Built:	1934
Ranger District:	Skykomish
Lat/ Long:	47.83643/ -121.263738
Access:	Trail
Current Use:	Recreation Rental
NRHP Status:	Listed

About: Evergreen Mountain is a L-4 ground house on a stone foundation. The road to the lookout washed out and it is only accessible via a 7-mile trail. The AWS staffed the lookout 24/7 during WWII. Materials were airlifted to the site by the 141st Army Reserve Aviation Battalion.

Partners:	Seattle Area Explorer Scout Search & Rescue Group, Mountaineers, Quest school
Deferred Maintenance:	$30,583.22
Replacement Value:	$78,765.34

LOOKOUT MOUNTAIN TOWER (06050100121)
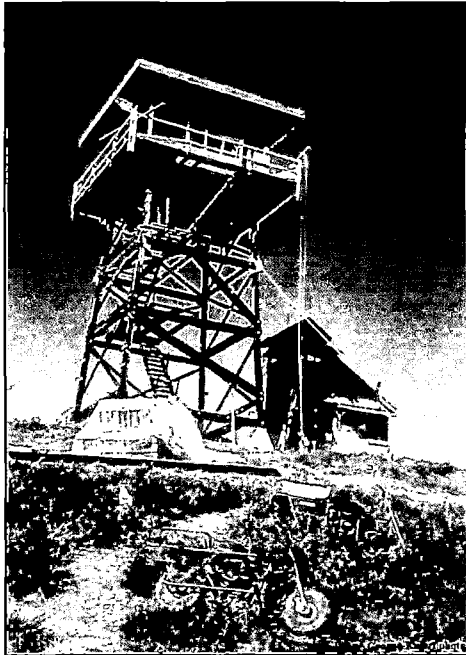
Lookout Mountain Lookout c.1961

Bob Pfeifer photo

Lookout Mountain Lookout c.2005

Year Built: 1962
Ranger District: Mt. Baker
Lat/ Long: 48.552201/ -121.329169
Access: Trail
Current Use: Inactive
NRHP Status: Unevaluated

About: According to the WWLL, the peak was first "established in 1929 with a 2-story "cathedral" cabin. The present 1961-constructed 30' treated timber R-6 tower, is open to the public on a first come, first serve basis".

Partners: Unknown
Deferred Maintenance: $27,181.85
Replacement Value: $105,007.98

NORTH MOUNTAIN LOOKOUT (06050200145)
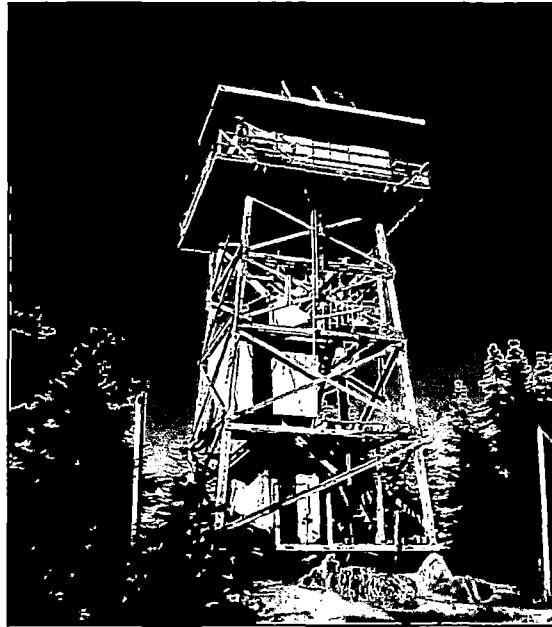
North Mountain Lookout c.2009 by Gary Weber

Year Built: 1965
Ranger District: Darrington
Lat/ Long: 48.3181056/ -121.6030472
Access: Road
Current Use: Inactive, Communication site and Emergency Fire
NRHP Status: Eligible

About: North Mountain is a R-6 cab on a 41-foot treated timber tower. The tower was restored and a DOE conducted in 2015. The peak was originally established with a rag camp between 1962 and 1966.

Partners: Unknown
Deferred Maintenance: $27,181.85
Replacement Value: $105,007.98

HEYBROOK LOOKOUT (06050600011)

Heybrook Lookout c.2001. Photo courtesy the Dave Bula collection and Rex Kamastra

Heybrook Lookout, Gary Weber 2009

Year Built: 1964
Ranger District: Skykomish
Lat/ Long: 47.8105/ -121.5251
Access: **Road**
Current Use: **Inactive**
NRHP Status: Unevaluated

About: According to the WWLL..." Heybrook was developed in 1925 with a platform tower, replaced by a 45' tower with L-4 cab in 1932. In 1964, the present 67' treated timber tower was built with an R-6 flat cab. Promptly abandoned in 1970, volunteers worked on constructing a new cab during the late 1990's. The lookout may be added to the Recreation Rental program in the future".

Partners: Unknown
Deferred Maintenance: $24,626.14
Replacement Value: $78,765.34

#	NAME	STYLE	YEAR
1	Ned Hill	Platform Tower	1933 FFLA
2	North Point	L-4	1939 FFLA
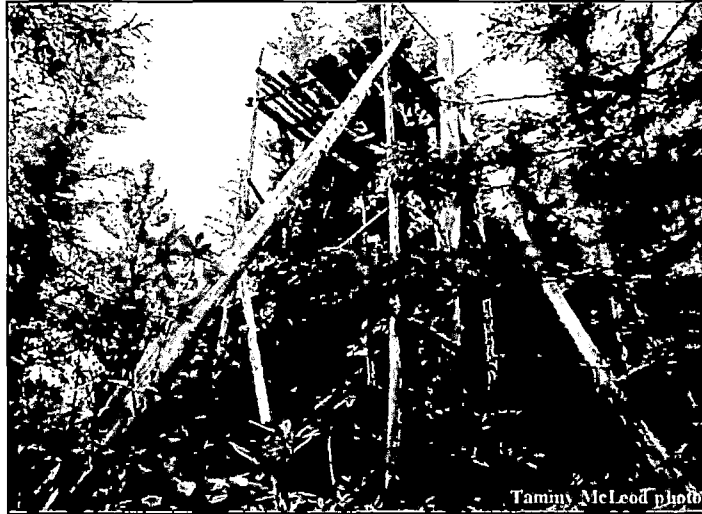
NED HILL LOOKOUT

Ned Hill Lookout

Year Built:	1933
Ranger District:	Hood Canal
Lat/ Long:	47.964238/ -123.17652
Access:	Trail
Current Use:	**Inactive**
NRHP Status:	Unevaluated

About: Located on the edge of the Buckhorn wilderness, the Ned Hill Platform tower is made of local timbers and snags. According to willhiteweb.com, "The Ned Hill Lookout is a real makeshift tower built of standing snags and poles. The two main posts are tree's rooted in the ground heavily burned on the outside. Other posts were placed diagonally to brace the structure".

Partners:	Washington Trails Association
Deferred Maintenance:	$0
Replacement Value:	$0

L-4

NORTH POINT LOOKOUT
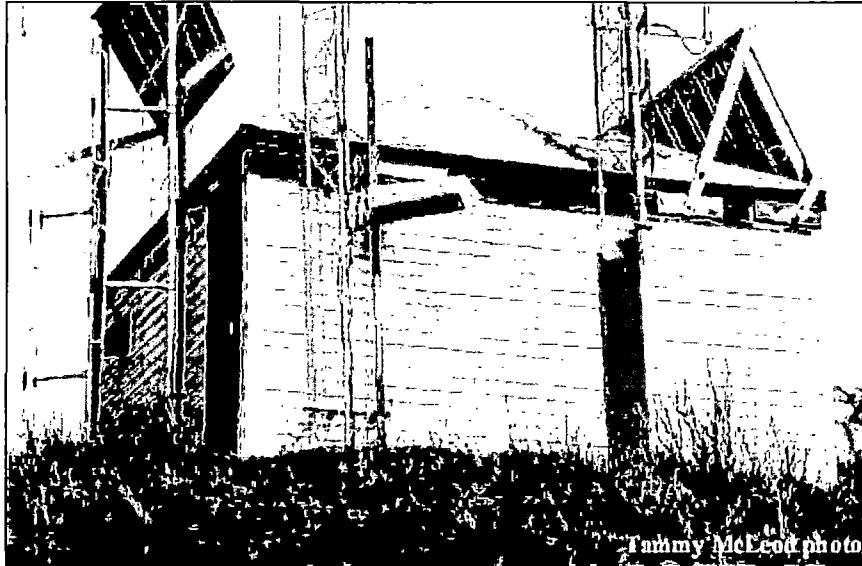
North Point Lookout, WWLL

Year Built:	1939
Ranger District:	Pacific
Lat/ Long:	48.084433/ -124.072333
Access:	Road
Current Use:	**Inactive, Communication Site**
NRHP Status:	Unevaluated

About: According to willhiteweb.com, "once just a patrol point for Kloshe Nanitch, North Point eventually replaced it being a few hundred feet higher and having views to the north. The lookout L-4 cab was built in 1939. It was used for some time but somewhat left unused in the 1950's. A Port Angeles Evening News article said on May 18, 1956 "The North Point Lookout on the ridge north of the Snider Ranger Station is being manned on an emergency basis." The article also said "opening this road will enable the lookout to get to the station and will also permit the installation of the necessary radio sets and relays at this point." So maybe North Point was preferred to Kloshe Nanitch because the radio or other signals could reach further. The Forest Service said in 1959 they had plans on developing North Point to provide great views of mountains and water. In 1965 Bryon Loucks was the observer reporting fires, he lived in Port Angeles and was majoring in forestry at Peninsula College. The building is said to be officially abandoned in 1969. The building has since been converted into a communications station. But with the same original frame it is still considered a standing lookout building. Rumor is that the building still has the center table that holds the Osborne Firefinder".

Partners:	Washington Trails Association
Deferred Maintenance:	$0
Replacement Value:	$0

#	NAME	STYLE	YEAR
1	Big Butte	L-4	1950
2	Clearwater	Aermotor	1938 FFLA, 1933 NRM
3	Oregon Butte	L-4 Gable	1931 NHLR, 1935 NRM
4	Table Rock	L-4	1949

BIG BUTTE LOOKOUT

Big Butte Lookout c.1959

Big Butte Lookout, WWLL

Year Built: 1950
Ranger District: Pomeroy
Lat/ Long: 46.115333/ -117.249148
Access: Road
Current Use: Inactive
NRHP Status: Eligible

About: Big Butte lookout is a L-4 cab on a 73-foot CT-4 pole tower. According to NRM, a tree fell on the guy wires in 2010 and caused extensive damage.

Partners: Unknown
Deferred Maintenance: $19,133.01
Replacement Value: $76,893.54

OREGON BUTTE LOOKOUT
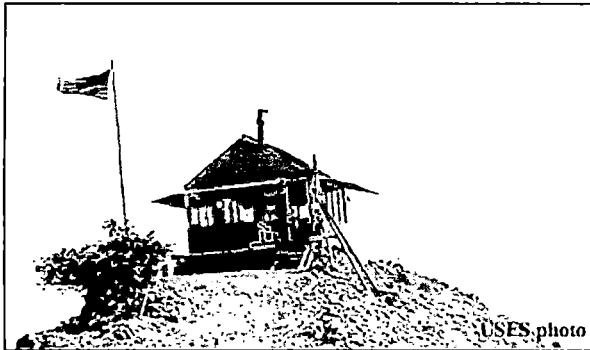
Oregon Butte Lookout c.1940
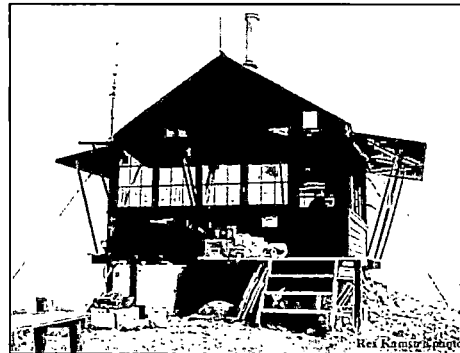
Oregon Butte Lookout c.2002

Year Built:	1931
Ranger District:	Pomeroy
Lat/ Long:	46.110558/ -117.678194
Access:	Trail
Current Use:	Fire Detection
NRHP Status:	Eligible

About: This L-4 gable is accessed through the Wenaha- Tucannon wilderness. According to the NHLR, "At one time there were 200 gable-roof L-4 lookouts throughout the Northwest (pre-1933), and now fewer than 15 remain. Built in 1931, Oregon Butte Lookout on the Umatilla National Forest in southeastern Washington is one of them. Accessible only by trail, it is located within the Wenaha-Tucannon Wilderness and was in active status until 1972. In 1980 the structure was restored and has since been regularly staffed".

Partners:	Unknown
Deferred Maintenance:	$7,578.34
Replacement Value:	$205,036.97
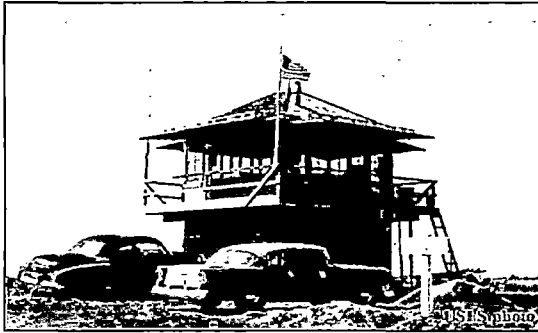
TABLE ROCK

Table Rock Lookout c.1958

Table Rock Lookout c.2000

Year Built: 1949
Ranger District: Walla Walla
Lat/ Long: 46.030885/ -117.911723
Access: Road
Current Use: Fire Detection
NRHP Status: Unevaluated

About: Table Rock is a L-4 cab on a 10-foot concrete base. According to the FFLA, the, "cab was modified in 1989".

Partners: Unknown
Deferred Maintenance: $0
Replacement Value: $76,968.42

AERMOTOR

CLEARWATER LOOKOUT
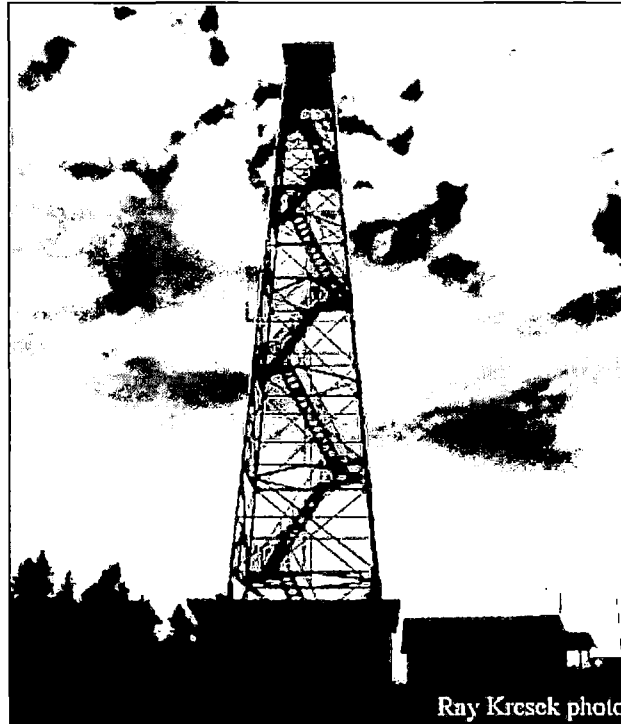
Clearwater Lookout c.1997

Year Built: 1933
Ranger District: Pomeroy
Lat/ Long: 46.20301/ -117.57524
Access: Road
Current Use: **Inactive, ground house is a recreation rental**
NRHP Status: Eligible

About: Clearwater lookout is a 94-foot Aermotor steel frame tower constructed by the CCC. The ground house is used as a recreation rental.

Partners: Unknown
Deferred Maintenance: $17,387.32
Replacement Value: $19,223.39

OKANOGAN-WENATCHEE NATIONAL FOREST (OKW)

#	NAME	STYLE	YEAR
1	Red Top	L-4	1952
2	Thorp Mountain	L-4 Gable	1930 NHLR, 1934 NRM
3	Lookout Mountain	L-4	1937
4	First Butte	L-4	1938 NHLR, 1937 NRM
5	Goat Peak	L-4	1950
6	Monument 83	L-4	1953
7	Slate Peak	L-4	1954
8	Leecher Mountain	Crow Nest	1921
9	Leecher Mountain	L-4	1940
10	Tyee Mountain	L-4	1952 NHLR, 1933 NRM
11	Steliko Point	L-4	1947
12	Sugarloaf Mountain	L-4	1949 NHLR, 1944 NRM
13	Alpine	R-6	1975
14	Jumpoff Lookout	R-6	1958
15	Cornell Butte	CL-100	1958
16	North Twenty Mile Peak	D-6	1923
17	North Twenty Mile Peak	L-4	1947
18	Mount Bonaparte	Cabin	1914
19	Mount Bonaparte	R-6	1961
20	Funk Mountain	Tree Platform	1914
21	Funk Mountain	L-4	1943
22	Meebee Pass	L-5	1933

MOUNT BONAPARTE LOOKOUT
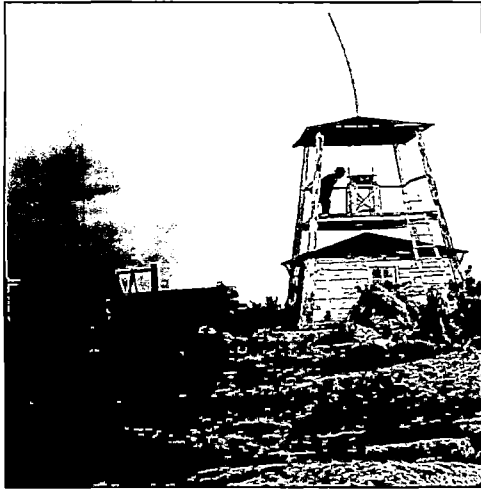
Mount Bonaparte Lookout c.1914 with
Adelaide and pup tent.

Mount Bonaparte c.2008

Year Built:	1914
Ranger District:	Tonasket
Lat/ Long:	48.7853/ -119.1222
Access:	**Off Trail**
Current Use:	**Inactive, Storage**
NRHP Status:	Unknown

About: Mount Bonaparte is a 12' x 12' slant-walled flat-hewn cabin that originally had a 15-foot covered platform. A R-6 cab on a 20-foot treated timber tower was constructed on site in the 1960's. The lookout is not easily accessible--there is a dirt road to trail and the trail turns west away from the lookouts.

Partners:	Unknown
Deferred Maintenance:	$4,720.08
Replacement Value:	$20,155.20

LEECHER MOUNTAIN LOOKOUT

Leecher Mountain Lookout Tree
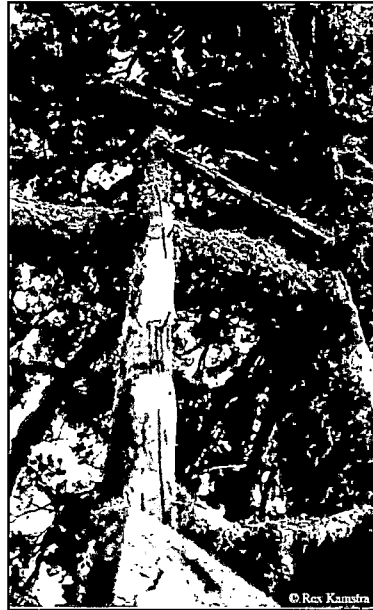
Leecher Mountain Lookout Tree

Year Built:	1921
Ranger District:	Methow Valley
Lat/ Long:	48.250611/ -120.002194
Access:	Trail
Current Use:	**Inactive**
NRHP Status:	Eligible

About: According to the WWLL, "Leecher has had a long and varied history of structures. The first was a crow's nest tree lookout dating from as early as 1918 located 1000' south of the present tower (still there). In 1921, a 45' steel windmill tower with a 6x6' cab was built, along with an 18x22' log cabin, which was replaced by an L-4 cab for living quarters in 1936".

Partners:	Unknown
Deferred Maintenance:	$0
Replacement Value:	$0

TREE PLATFORM

FUNK MOUNTAIN

Funk Mountain Crow's nest, DAHP 2006

Year Built: 1914
Ranger District: Tonasket
Lat/ Long: 48.5997/ -119.7447
Access: Trail
Current Use: Inactive
NRHP Status: Unknown

About: Locally known as the "Funk Nest", Funk Mountain tree platform is still in the tree adjacent to the current L-4.

Partners: Unknown
Deferred Maintenance: $0
Replacement Value: $0

NORTH TWENTY MILE PEAK

North Twenty Mile Peak c.1923

North Twenty Mile Peak Lookout c.2010

Year Built:	1923
Ranger District:	Tonasket
Lat/ Long:	48.7515/ -120.0682
Access:	Trail
Current Use:	**Inactive, Storage**
NRHP Status:	Listed

About: According to WWLL, "Developed with a log cabin about 1920, a cupola cabin was built in 1923 and is still on the summit. A 30' treated timber L-4 followed the cupola in 1947. The lookout was last staffed in the late 1980's. The site is listed on the National Historic Lookout Register".

Partners:	Unknown
Deferred Maintenance:	$51,398.41
Replacement Value:	$116,093.95

L-5

MEEBEE PASS
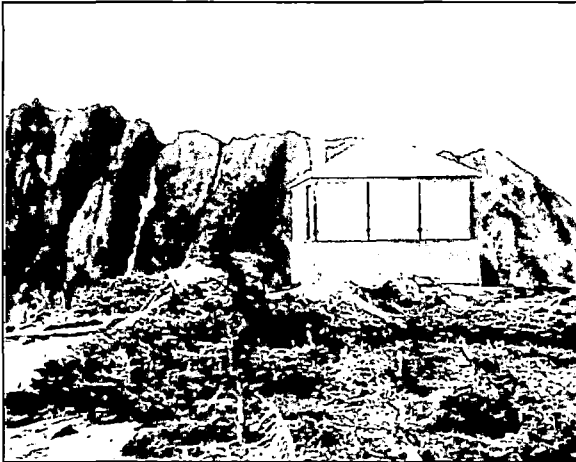
Meebee Pass c.1935, willhiteweb.com
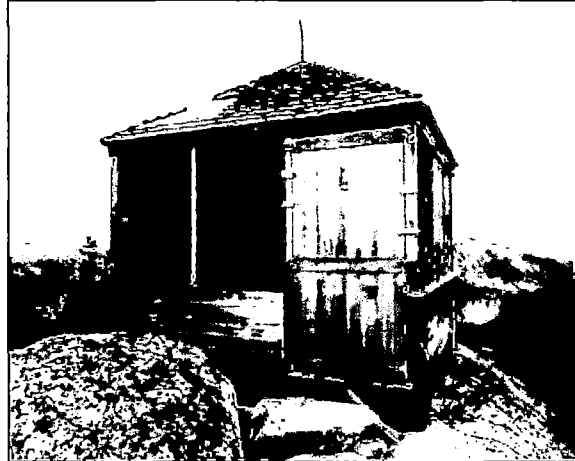
Meebee Pass lookout, willhiteweb.com

Year Built:	1933
Ranger District:	Methow Valley
Lat/ Long:	48.631361/ -120.779806
Access:	Trail
Current Use:	**Inactive**
NRHP Status:	Unknown

About: According to willhiteweb.com, "the lookout at Meebee Pass was built sometime in the mid-1930s. We know from a newspaper article on September 2, 1933 in the Wenatchee Daily World, that Tracy Heath was finishing a structure on Setting Sun Mountain and would next be going to Meebee Pass to build a structure. So at the soonest, it was built in 1934. But, the pictures and information in the 1936 panoramics appear to show no lookout yet as of July 24, 1936. Whenever the construction date, the structure was an L-5 cab, one of the last known standing of this type. At some point, the station was abandoned, I've seen dates from 1941 to 1954. Some preservation work took place in 2002 and again in 2013-2015".

Partners:	Friends of Meebee Pass and volunteers
Deferred Maintenance:	Unknown
Replacement Value:	Unknown
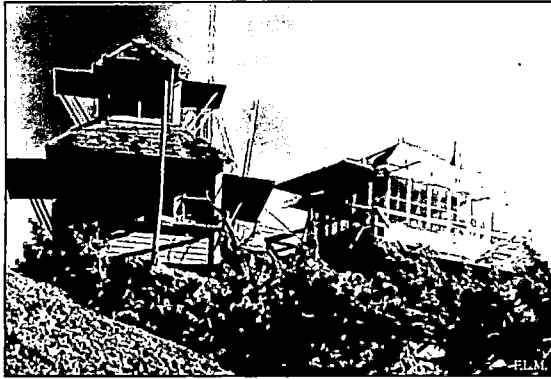
RED TOP LOOKOUT

Red Top Lookout c.1952. L-4 in background

Red Top Lookout, WWLL

Year Built: 1952
Ranger District: Cle Elum
Lat/ Long: 47.30154/ -120.7606
Access: Trail
Current Use: Fire Detection and Public Information
NRHP Status: Eligible

About: The Red Top L-4 is on a 10-foot treated timber tower. The lookout was reconstructed over two years beginning in 1997 using force account and volunteer crews. The lookout is also a public information site for 350-million-year-old jasper geodes in the area.

Partners: Volunteers and Friends of Red Top
Deferred Maintenance: $14,711.51
Replacement Value: $101,361.41

THORP MOUNTAIN LOOKOUT
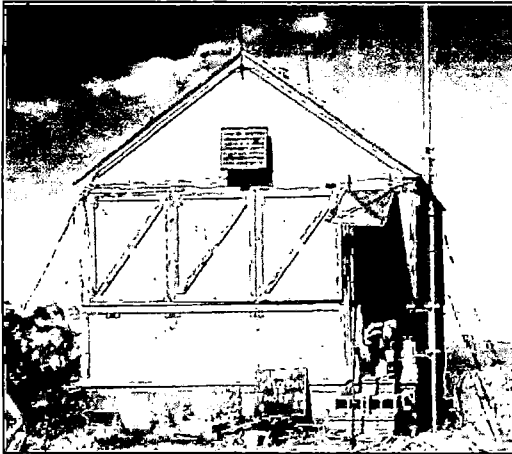
Thorp Mountain Lookout. Photo's courtesy of
Tim Thornton and Tammy McLeod, WWLL

Thorp Mountain Lookout c.2009

Year Built:	1934
Ranger District:	Cle Elum
Lat/ Long:	47.3708/ -120.2071
Access:	Trail
Current Use:	Fire Detection
NRHP Status:	Unevaluated

About: Thorp Mountain is a L-4 gable ground house that has been in service since its construction. The lookout was refurbished in 2007.

Partners:	Unknown
Deferred Maintenance:	$53,559.39
Replacement Value:	$206,908.77

LOOKOUT MOUTNAIN LOOKOUT
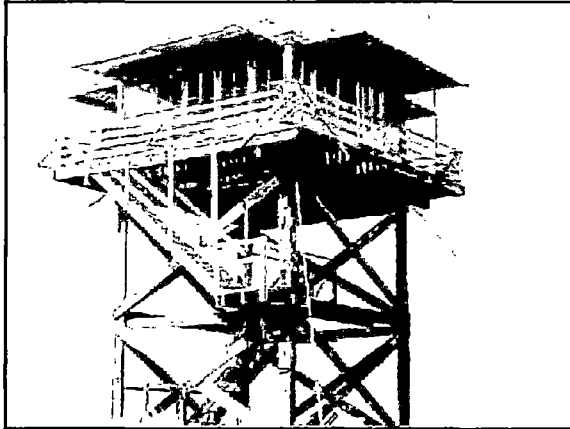
Lookout Mountain Lookout, NHLR

© Rex Kamstra
Lookout Mountain Lookout
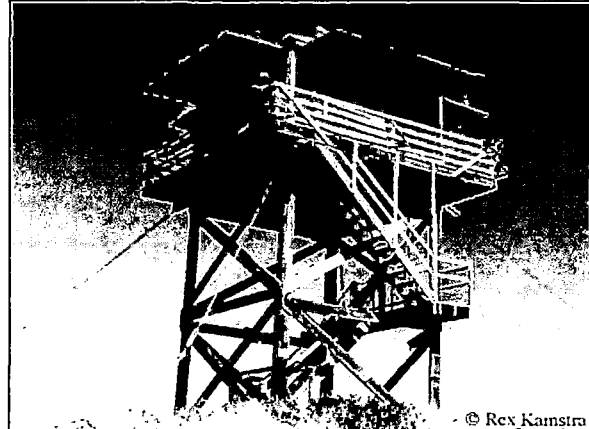
Year Built:	1937
Ranger District:	Methow Valley
Lat/ Long:	48.3133/ -120.1875
Access:	**No**
Current Use:	**Inactive**
NRHP Status:	Unevaluated

About: Lookout Mountain lookout is a L-4 cab with a catwalk on a 25-foot treated timber tower. There is a trail that terminates 0.75-miles northeast of the lookout. According to the WWLL, the lookout was, "established as a camp lookout in 1916, a log cupola cabin was constructed in 1931. The present 25' timber tower with L-4 cab, built in 1937, was staffed regularly every summer up to 1997".

Partners:	Unknown
Deferred Maintenance:	$1.56
Replacement Value:	$56,984.85

FIRST BUTTE LOOKOUT
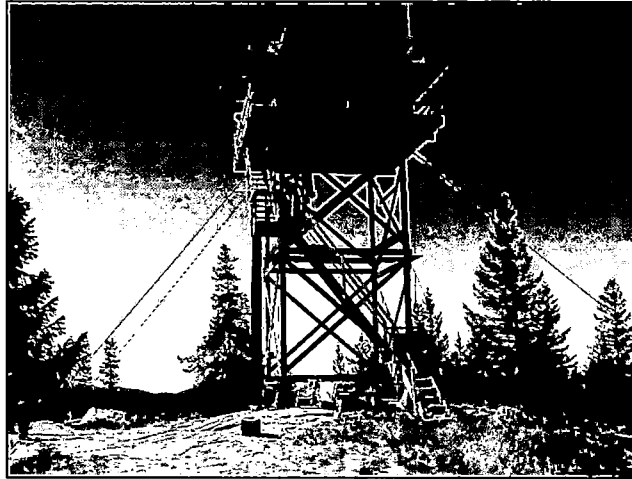
First Butte Lookout, DAHP c. 2006

Year Built: 1937
Ranger District: Methow Valley
Lat/ Long: 48.619154/ -120.108946
Access: Road
Current Use: Fire Detection
NRHP Status: Unknown
About: First Butte is a L-4 cab with a catwalk on a 28-foot treated timber tower.

Partners: Unknown
Deferred Maintenance: $12,849.60
Replacement Value: $49,640.14

GOAT PEAK LOOKOUT

Goat Peak Lookout, NHLR
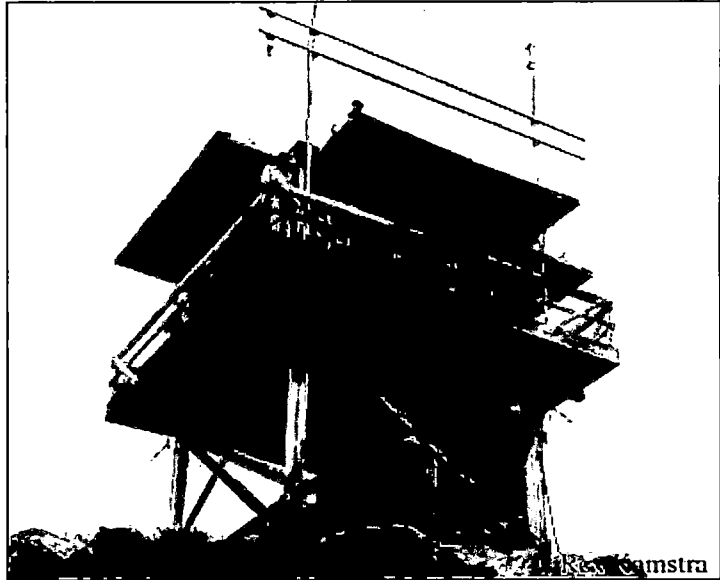
Goat Peak Lookout

Year Built: 1950
Ranger District: Methow Valley
Lat/ Long: 48.6322/ -120.4039
Access: Trail
Current Use: Fire Detection
NRHP Status: Unevaluated
About: Goat Peak is a L-4 cab on a 15-foot treated timber tower with a catwalk.

Partners: Unknown
Deferred Maintenance: $9,782.96
Replacement Value: $198,560.54
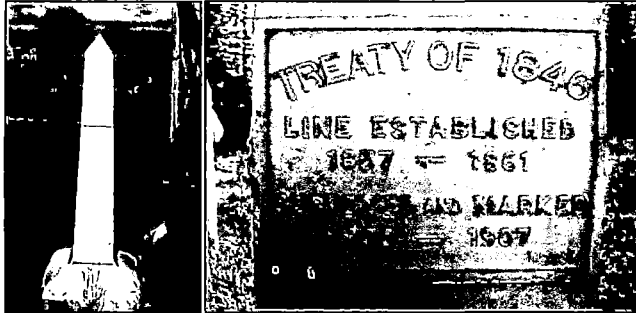
MONUMENT 83

Monument 83 at base of lookout, DAHP 2010

L-4 Tower in foreground with Log Cabin Cupola in background

Year Built: 1953
Ranger District: Methow Valley
Lat/ Long: 49/ -120.6450001
Access: Trail
Current Use: **Inactive**
NRHP Status: Unevaluated

About: Located in the Pasayten Wilderness, Monument 83 is the northernmost lookout in Washington and the Region. Originally, the point was established with a rag camp and tree platform in the 1920's. The forest built a D-1 cupola in 1930 and it was later found to be in Canada once the 49th parallel was established. The forest built the current L-4 cab and catwalk on a 30-foot treated timber tower on concrete blocks on the U.S. side of the peak.

Partners: Unknown
Deferred Maintenance: $30,214.88
Replacement Value: $202,612.80

SLATE PEAK LOOKOUT

Slate Peak c.2001

Year Built:	1954
Ranger District:	Methow Valley
Lat/ Long:	48.741701/ -120.680645
Access:	Road
Current Use:	**Inactive, Communication Site and Emergency Fire**
NRHP Status:	Unevaluated

About: Slate Peak is a L-4 cab and catwalk on a 41-foot treated timber tower. During WWII, the Air Force removed 40-feet from the summit (including the original lookout) in order to establish a radar station. According to the WWLL, "The first lookout structure here was a 1924 gable-roof cupola cabin. The current 41' treated timber tower with L-4 cab was built in 1956, after the Air Force decided they didn't need to build a radar station here. The summit was formerly 40' higher, but the Air Force kicked out the U.S. Forest Service tenant, destroyed the L-4 cabin which had been moved to the summit just 2 years earlier from Leecher Mtn. Lookout, and blasted the top 40' off the mountain. The project was declared obsolete before completion, and what remains is a huge flat summit. It is the highest point in Washington accessible by automobile. The lookout was pressed into emergency service during 1994 when nearby Goat Peak Lookout had to be evacuated because of a forest fire. It was used in 1996 to monitor the Elbow Basin fire in the Pasayten Wilderness, and relay radio messages from personnel on the fire. The lookout is listed on the National Historic Lookout Register".

Partners:	Unknown
Deferred Maintenance:	$75,979.80
Replacement Value:	$75,979.80

LEECHER MOUNTAIN TOWER

Leecher Mountain Lookout c.1940

Leecher Mountain Lookout c.1999
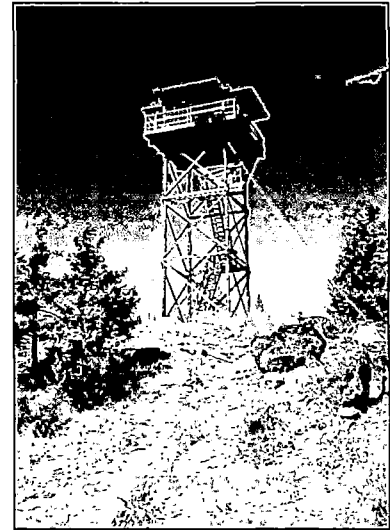
Leecher Mountain Lookout, DAHP c.2013

Year Built:	1940
Ranger District:	Methow Valley
Lat/ Long:	48.2508/ -120.0125
Access:	Trail
Current Use:	Inactive
NRHP Status:	Eligible

About: According to the NHLR, " In 1921 a Sears windmill tower with 6'x6' cab was constructed, and a ground house living quarters added in 1922. In 1941 a live-in L-4 on an 11' timber tower was built and the windmill tower moved to the Twisp Smokejumper Base for use as a training loft. The present L-4 on a 41' tower was moved there from Chiliwist in 1954. The lookout has been recently [2010] renovated". There is also an outhouse, garage, and a Remote Automated Weather Station (RAWS) on site.

Partners:	Unknown
Deferred Maintenance:	$109,513.75
Replacement Value:	$198,560.54

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TYEE MOUNTAIN LOOKOUT

Tyee Mountain Lookout
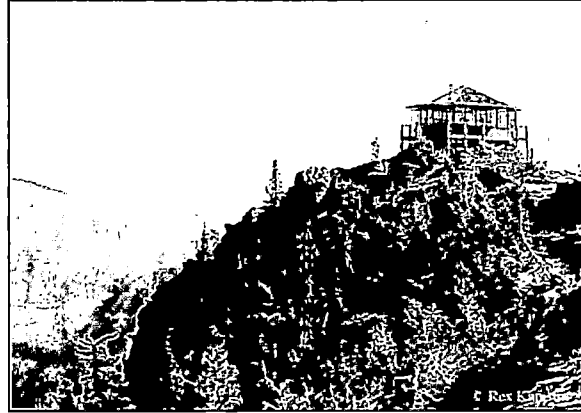
Tyee Mountain Lookout

Year Built: 1952
Ranger District: Entiat
Lat/ Long: 47.863954/ -120.4711
Access: Road
Current Use: Inactive, Emergency Fire
NRHP Status: Listed

About: This L-4 ground cab with a catwalk replaced the original L-4 cab that was placed on the peak in 1931. The outhouse was lost in 1994 during the Tyee-Hatchery Fire. According to NHLR member, "on Feb. 8, 2013, Ken Jones reported: "I have been advised by the Entiat RD Fire [Management] Officer that Tyee LO cannot be used, even by volunteers, because the lightning protection system is apparently not up to code. Cost to upgrade the system would be several thousand dollars, which isn't in their budgets. Therefore, there are no plans to utilize Tyee in the foreseeable future. Considering all the repair and maintenance work that has been done so far, this is a real shame".

Partners: Unknown
Deferred Maintenance: $38,750.30
Replacement Value: $99,280.27

STELIKO POINT LOOKOUT

Steliko Point Lookout

Steliko Lookout c. 2009, NHLR Gary Weber

Year Built: 1947
Ranger District: Entiat
Lat/ Long: 47.7403/ -120.3439
Access: Road
Current Use: **Inactive, Emergency Fire**
NRHP Status: Unevaluated

About: This L-4 cab with a catwalk is on a 10-foot treated timber tower. According to a condition assessment from 2014, the lookout is in poor condition. According to NRM, "Minimize Impact Strategy Tactics (MIST) strategically placed lookouts in the Wenatchee National Forest".

Partners: Unknown
Deferred Maintenance: $19,274.40
Replacement Value: $101,812.93

SUGARLOAF MOUNTAIN LOOKOUT
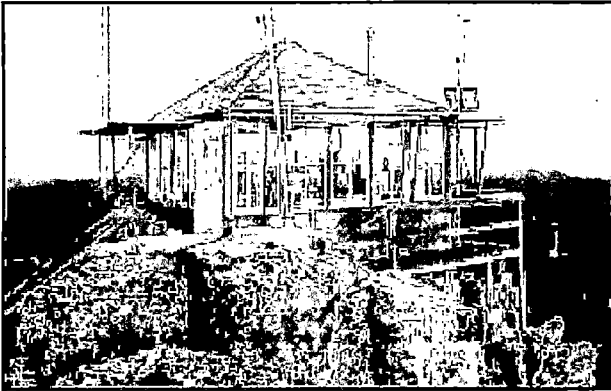
Sugarloaf Mountain Lookout, NHLR

Sugarloaf Mountain Lookout c.2000

Year Built:	1933
Ranger District:	Entiat
Lat/ Long:	47.7569/ -120.5278
Access:	Road
Current Use:	**Fire Detection and Communication Site**
NRHP Status:	Unevaluated

About: Sugarloaf is a L-4 cab was constructed in 1933 and moved to the site in 1949--it replaced the original cupola cabin. The outhouse and garage were destroyed in 1994 during the Tyee-Hatchery Fire. This lookout is also sometimes called, Sugarloaf Peak.

Partners:	Unknown
Deferred Maintenance:	$36,727.95
Replacement Value:	$99,280.27

NORTH TWENTY MILE PEAK LOOKOUT

North Twenty Mile Peak Lookout c.1974

North Twenty Mile Peak Lookout c.2015

Year Built:	1947
Ranger District:	Tonasket
Lat/ Long:	48.7514/ -120.0683
Access:	Trail
Current Use:	**Inactive**
NRHP Status:	Listed

About: North Twenty Mile Peak lookout is a L-4 cab with a catwalk on a 30-foot treated timber tower. According to the NHLR, "the first lookout, a log cabin, was established on North Twentymile Peak on the Okanogan National Forest in 1920. A D-6 cupola lookout was constructed in 1923. Now used for storage, it is one of only nine remaining of more than 200 that were built in the Northwest. In 1947 a 30' timber tower with a 14' x 14' hip roof L-4 cab with catwalk was erected. Last staffed in 1988, it is now maintained as an emergency lookout." NHLR

Partners:	Unknown
Deferred Maintenance:	$51,398.41
Replacement Value:	$202,612.80

FUNK MOUNTAIN TOWER
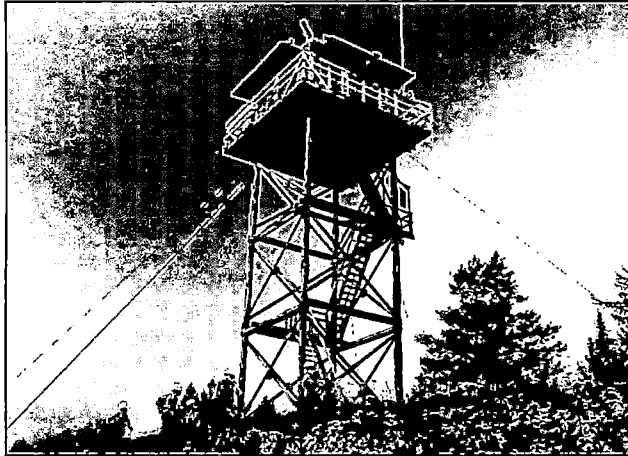
Funk Mountain lookout, DAHP c.2006. Fire crew digging line around lookout during the Tripod wildfire.

Funk Mountain Lookout cab, DAHP c.2006

Year Built: 1943
Ranger District: Tonasket
Lat/ Long: 48.5997/ -119.7447
Access: Trail
Current Use: Fire Detection
NRHP Status: Unevaluated

About: Funk Mountain is a L-4 cab on a 40-foot treated timber tower. According to the NHLR, Funk Mountain was, "first established as a tree platform in 1914, Funk Mountain Lookout is one of the oldest in the Northwest still in existence. A ground L-5 cab was added in 1935 and replaced in 1943 by the current L-4 cab with catwalk on a 40' treated timber tower. Used sporadically for the past decade, it was returned to service by the Okanogan National Forest in 2000".

Partners: Unknown
Deferred Maintenance: $22,753.76
Replacement Value: $49,640.14

CL-100

CORNELL BUTTE

Cornell Butte Lookout

Year Built:	1958
Ranger District:	Tonasket
Lat/ Long:	48.5944/ -118.8903
Access:	Road
Current Use:	Inactive, Communication Site
NRHP Status:	Eligible

About: Cornell Butte is a CL-100 on a 42-foot steel tower. According to the WWLL, Cornell Butte, "was purchased by a private party for removal in 1996. As of last report, the tower is still on the summit". The removal was cancelled due to lack of funds. The wooden floorboards were burned in 2015 during the North Star fire.

Partners:	Unknown
Deferred Maintenance:	$39,929.73
Replacement Value:	$44,828.08

ALPINE LOOKOUT

Alpine Lookout c.1979
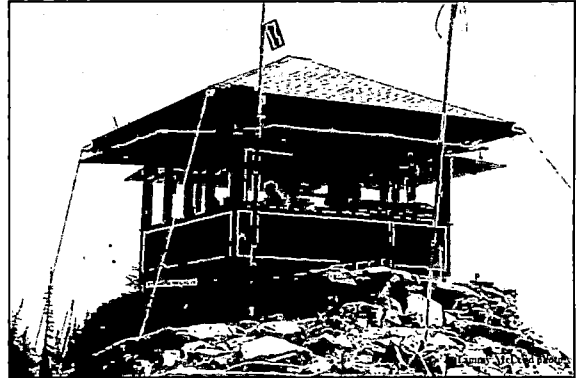
Alpine Lookout c.2007

Year Built:	1975
Ranger District:	Wenatchee River
Lat/ Long:	47.812036/ -120.865811
Access:	Trail
Current Use:	Fire Detection
NRHP Status:	Unevaluated

About: Alpine lookout is a R-6 ground cab with the recent addition of a hipped roof. Alpine was originally established in 1920 with an alidade, a crank-telephone, and a rag camp. An L-4 was placed on the peak in 1936 and was replaced with the R-6 in 1975.

Partners:	Unknown
Deferred Maintenance:	$53,559.39
Replacement Value:	$253,357.68

MOUNT BONAPARTE

Mount Bonaparte Lookout c.1962

Year Built:	1961
Ranger District:	Tonasket
Lat/ Long:	48.7853/ -119.1222
Access:	**Off Trail**
Current Use:	**Fire Detection**
NRHP Status:	Unevaluated

About: Mount Bonaparte R-6 cab with a catwalk is on a 20-foot treated timber tower. According to the NHLR, "Mt. Bonaparte on the Okanogan National Forest in north central Washington may have been used as early as 1906 as a tent camp lookout. The first 12' x 12' flat-hewn tapered wall ground house with tower was constructed in 1914 and the house portion remains today as a storage building. The present 15' x 15' R-6 flattop cab and catwalk on a 20' timber tower was built in 1963 and remains in active service".

Partners:	Unknown
Deferred Maintenance:	$16.81
Replacement Value:	$227,939.40
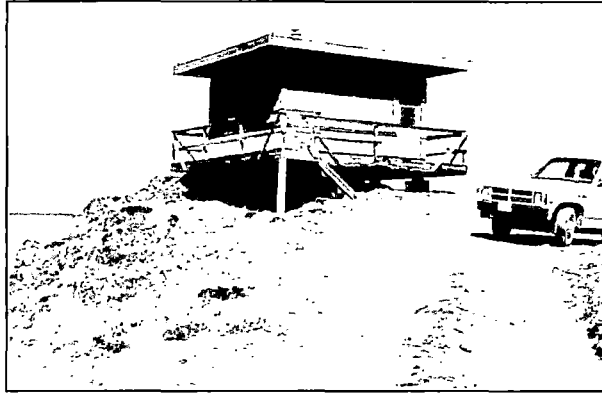
JUMPOFF LOOKOUT

Jumpoff Lookout, DAHP c.2007

Year Built:	1958
Ranger District:	Naches
Lat/ Long:	46.6445/ -121.0318
Access:	Road
Current Use:	**Inactive, Emergency Fire**
NRHP Status:	Eligible

About: According to the DAHP site file from 2007, "the property consists of a lookout tower and associated improvements on Jumpoff Ridge. The original tower constructed at this location was a D-5 with cupola built around the 1920-1930s. This lookout burnt down and was subsequently "pushed" over the edge of the cliff (pieces of it can still be seen if you look over the edge). The present lookout is a square, flat top style built sometime around 1958-1961. The present lookout structure is a 14'8" square frame construction on concrete pillars with a 3' wide catwalk surround. The siding is T1-11. A flat top roof extends over the catwalk (21' square drip line) and is made of 2x6" tongue and groove covered with felt paper, a hot tar build up and a roll-on silver coating. There are seven four-pane windows on each face of the lookout with exterior plywood shutters to cover them in the winter. Stairs to the cat-walk and an entrance door on located on the south face of the building. The lookout has been vandalized and damaged in more recent times. Several plywood shutters have been thrown over the edge, graffiti has painted on interior walls, and the door has been damaged by "break-ins". The roof is in bad condition, leaking, and mold is growing on the interior of the building. There are presently 21 broken windows that need replacement, and the steps/catwalk are weathered and deteriorating. A former garage associated with the original lookout is no longer present (removal date unknown). The outhouse was heavily vandalized and pushed over/destroyed in the more recent past.

Partners:	Unknown
Deferred Maintenance:	$0
Replacement Value:	$67,574.27

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COLVILLE NATIONAL FOREST (COL)

#	NAME	STYLE	YEAR
1	Timber Mountain	R-6	1959
2	South Baldy Mountain	R-6	1960
3	Sullivan Mountain	R-6	1959 NHLR, 1964 NRM
4	Salmo Mountain	R-6	1964 NHLR, 1965 NRM
5	Columbia Mountain	Cabin	1914
6	Diamond Point	Platform Tower	1934

COLUMBIA MOUNTAIN

Columbia Mountain Cabin post restoration
2009/2010, willhiteweb.com

Columbia Mountain c. 1930,
willhiteweb.com

Year Built: c. 1914
Ranger District: Republic
Lat/ Long: 48.62044/ -118.482093
Access: Trail
Current Use: **Inactive, Trail Shelter**
NRHP Status: Unknown

About: Columbia Mountain cabin is 12' x 12' slant-walled with hand-hewn square notching and the corner posts used to support a 15-foot platform above the roof. It was designed by the second supervisor of the forest, CC Reed. The Washington Chapter of the Forest Fire Lookout Association led by Ray Kresek conducted the initial restoration work in 1993. It was restored again in 2009/2010 by Passport in Time (PIT) volunteers. Restoration in 2009/2010 included new hand-hewn squared course logs, flooring, new shake roof, and new framing (hand peeled) for the rotted roof supports. As much of the original material was reused in the construction--this included old magazines used as chinking.

Partners: Volunteers and the Washington Chapter of the Forest Fire
                            Lookout Association
Deferred Maintenance: $0
Replacement Value: $0

DIAMOND POINT

willhiteweb.com

Gary Weber photo c.1982,
firelookout.com

willhiteweb.com

Year Built:	1934
Ranger District:	Kalispell
Lat/ Long:	48.63251/ -117.078452
Access:	**Road (gated)**
Current Use:	**Inactive**
NRHP Status:	Unknown

About: The access road was close in the late 90s to protect grizzly bear habitat.

Partners:	Unknown
Deferred Maintenance:	$0
Replacement Value:	$0

TIMBER MOUNTAIN LOOKOUT (06210300180)

Timber Mountain Lookout c.1950.
Photo's courtesy the Fire Lookout
Museum and Rex Kamastra

Timber Mountain, NHLR

Year Built:	1959
Ranger District:	Newport
Lat/ Long:	48.527028/ -117.452528
Access:	Road
Current Use:	**Inactive, Emergencies**
NRHP Status:	Unevaluated

About: Timber Mountain is a R-6 cab on a 41-foot treated timber tower. The lookout was restored during a PIT project in 1995 and 2017.

Partners:	Pend Oreille Anthropological Society
Deferred Maintenance:	$16,658.07
Replacement Value:	$58,231.13

SOUTH BALDY MOUNTAIN (06210300103)
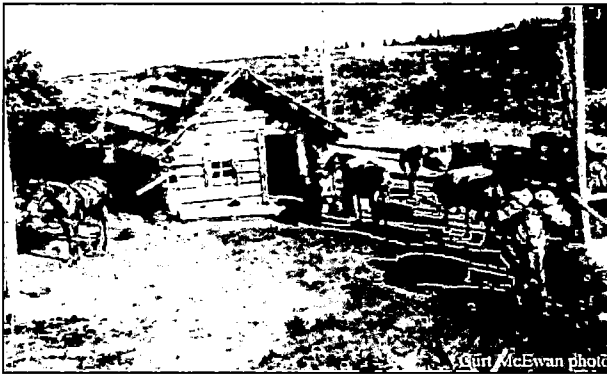
Original one-room cabin c.1930

Rex Kamstra photo

South Baldy Lookout c.2000

Year Built:	1960
Ranger District:	Newport
Lat/ Long:	48.42334/ -117.137471
Access:	Trail
Current Use:	Fire Detection
NRHP Status:	Unevaluated

About: South Baldy is a R-6 on a 41-foot treated timber tower. According to NRM, the lookout is staffed by Region 1.

Partners:	Unknown
Deferred Maintenance:	$15,840.14
Replacement Value:	$58,231.13

SULLIVAN MOUNTAIN LOOKOUT (06210500094)

Sullivan Mountain c.2012

Year Built:	1964
Ranger District:	Sullivan
Lat/ Long:	48.878/ -117.249
Access:	Road
Current Use:	**Inactive**
NRHP Status:	Unevaluated

About: Sullivan Mountain is a R-6 cab on a 20-foot treated timber tower. According to the WWLL, Sullivan Mountain "started in 1926 with a cupola cabin, a 20' pole tower with L-4 cab replaced it in 1935. The present 20' treated timber tower with R-6 flat cab, built in 1959, borders the Salmo-Priest Wilderness Area in Northeast Washington. Last used in the 1970s, it is presently abandoned".

Partners:	Unknown
Deferred Maintenance:	$42,193.62
Replacement Value:	$48,227.88

SALMO MOUNTAIN LOOKOUT (0 6210500137)

Salmo Mountain Lookout c.2018, NHLR courtesy of
Nicholas Muto

Year Built: 1965
Ranger District: Sullivan
Lat/ Long: 48.96824/ -117.102908
Access: Road
Current Use: **Inactive**
NRHP Status: Unevaluated

About: Salmo Mountain is a R-6 cab with a catwalk on a 10-foot treated timber tower. The lookout is the furthest northwest in the Region and captures a view of B.C., Idaho, and Washington. Can also see fire scars from the Great Idaho Fire of 1910. According to the WWLL, Salmo was "developed in 1927 with a 35' pole platform tower on the south summit and a crow's nest tree platform on the north summit, a log cabin was built at the south summit and a pole platform tower on the north summit in 1929. About 1933 a 30' L-4 was constructed on the south summit. The present 10' treated timber tower with R-6 flat cab, built on the south summit in 1964, is on the National Historic Lookout Register. The site borders the Salmo-Priest Wilderness".

Partners: Unknown
Deferred Maintenance: $12,810.84
Replacement Value: $49,490.39

APPENDIX C: INVENTORY OF USE

Forest	Name	Style	Inactive	Rec Rental	SUP	Fire Detection	Emergency	Other	Comments
Colville	Sullivan Mountain	R-6	■						
Colville	Salmo Mountain	R-6	■						
Colville	Timber Mountain	R-6				■			
Colville	South Baldy	R-6				■			
Colville	Columbia Mountain	Cabin						■	Trail shelter
Colville	Diamond Point	Platform Tower	■						
Gifford Pinchot	Red Mountain	R-6	■						
Gifford Pinchot	Mt Adams	Modified D-6	■						1200' sheer cliff
Gifford Pinchot	Burley Mountain	L-4		■					
Gifford Pinchot	Highrock	L-4 gable	■						
Mt Baker-Snoqualmie	Lookout mtn	Cathedral	■						
Mt Baker-Snoqualmie	Winchester Mtn	L-4						■	Open to public
Mt Baker-Snoqualmie	Lookout mtn	R-6	■						
Mt Baker-Snoqualmie	Green Mtn	L-4	■						In Glacier Peak wilderness
Mt Baker-Snoqualmie	North Mtn	R-6	■		■		■		
Mt Baker-Snoqualmie	Park Butte	L-4		■					
Mt Baker-Snoqualmie	Miners Ridge	L-4				■			Staffed by volunteers
Mt Baker-Snoqualmie	Suntop	L-4				■			Staffed by volunteers
Mt Baker-Snoqualmie	Granite Mtn	L-4				■			Staffed by volunteers
Mt Baker-Snoqualmie	Hidden Lake peak	L-4		■					
Mt Baker-Snoqualmie	Kelly Butte	L-4		■			■		
Mt Baker-Snoqualmie	Evergreen Mountain	L-4		■					

Forest	Name	Type							Notes
	Three Fingers	L-4	■						
	Heybrook	R-6	■						
Okanogan-Wenatchee	Lookout mtn	L-4	■						
	Monument 83	L-4	■						
	Leecher Mtn	Crow Nest	■						
	Leecher Mtn	L-4 hip	■						
	Slate Peak	L-4			■				
	Red Top	L-4 hip				■		■	Public information post
	Tyee Mtn	L-4 hip	■				■		
	Steliko Point	L-4 hip					■		
	Jumpoff	R-6	■				■		
	Thorp Mtn	L-4 gable				■			
	First Butte	L-4				■			
	Mount Bonaparte	Cabin	■					■	Storage
	Goat Peak	L-4 hip				■			
	Sugarloaf Mtn	L-4 hip			■	■			
	Alpine	R-6				■			
	Mount Bonaparte	R-6				■			
	Funk Mountain	L-4				■			
	Cornell Butte	CL-100			■				
	North Twenty Mile Peak	D-6	■					■	Storage
	North Twenty Mile Peak	L-4 hip	■						
	Funk Mountain	Tree Platform	■						
	Meebee Pass	L-5	■						
Olympic	Ned Hill	Platform Tower	■						
	North Point	L-4			■				

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	Name	Type							Notes
Umatilla	Big Butte	L-4	■						
	Clearwater	Aermotor	■						ground cabin is rec rental
	Hoodoo	Crow Nest	■						
	Oregon Butte	L-4 gable				■			
	Table Rock	L-4				■			
	Madison Butte	CL-100				■			
	Tamarack Mtn	Aermotor				■			
	Bone Point	CL-100			■		■		
	Tower Mtn	Aermotor				■			
	Desolation Butte	R-6				■			
	High Ridge tower	R-6				■			
	Lookout Mountain	L-4				■			
	Hoodoo Tower	Aermotor	■						
Willamette	Olallie Mtn	L-4	■						Burnt down 2020
	Indian Ridge	R-6		■	■		■		
	Saddleblanket Mtn	Crow Nest	■						
	Gold Butte	L-4		■					July to Oct
	Warner Mtn	D-6 replica							fire detection in summer, Winter rental
	Carpenter Mtn	L-4 hip				■			
	Sand Mtn	L-4				■		■	also, interpretive site for SIA
	Coffin Mtn	R-6				■			summer only
	Huckleberry Mtn	L-4			■	■			
	Waldo Mtn	R-6					■		
	Saddleblanket Mtn	Aermotor	■						

Forest	Site	Code								Notes
	Little Cowhorn	R-6	■							
Wallowa-Whitman	Buckhorn Mtn	L-4	■							
	Harl Butte	L-4				■				
	Red Hill	L-4	■				■			
	Dry Diggins	R-6	■				■			In Idaho
	Heaven's Gate	R-6				■				In Idaho
	Mule Peak	L-4-AR	■				■			
	Johnson Rock	L-4				■				
	Point Prominence	L-4				■				
	Unity RS LO	Aermotor					■	■		Town Christmas tree
	Summit Point	L-4				■				
	Table Rock	L-4				■				
	Mt Ireland	CL-100				■				
	Russell Mtn	L-4	■				■			
	Hat Point	L-6	■							
	Pine RS LO	L-6	■							
Umpqua	Fairview Peak	R-6	■							
	Abbott Butte	L-4	■							
	Watson Butte	L-4	■							
	Acker Rock	R-6		■						
	Pickett Butte	L-4		■			■			summer and winter rental
	Garwood Butte	L-4	■							
	Cinnamon Butte	R-6				■				
	Red Mountain	D-6						■		Monument/ exhibit
	Illahee rock	D-6						■		museum
	Pig Iron	L-5	■				■			
	Illahee rock tower	L-4				■				
	Callahan Mtn	Crow Nest	■							

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Forest	Site	Type	1	2	3	4	5	6	7	Notes
Siuslaw	Fairview Mtn	Platform Tower	■							
Rogue River-Siskiyou	Mt Stella	L-4	■							Inactive Rec rental
	Rustler Peak	L-4			■	■				
	Quail Prairie	R-6	■	■						
	Squaw Peak	L-4		■						
	Bolan Mtn	L-4		■			■			
	Lake of the Woods	CL-160		■						
	Snow Camp	R-6 hip		■						
	Dutchman Peak	D-6				■				
	Robinson Butte	R-6	■				■			
	Hershberger	D-6			■		■			
	Hall's Point	R-6				■				
	Yellow Jacket	Crow Nest	■							
Ochoco	Mount Pisgah	Tree Platform	■							
	East Wolf Mtn	Crow Nest	■							
	West Wolf Mtn	Crow Nest	■							
	Mount Pisgah	R-6				■				
	Tower Point	L-4				■				
	Wolf Mountain	L-4				■				
	Black Mountain	Tree Platform	■							
Mt Hood	Clear Lake Butte	Tree Platform	■							
	Flag Point	R-6		■		■				winter rental, summer fire
	Fivemile Butte	R-6		■						
	Bull of the Woods	L-4	■					■		Backcountry Guard Station
	Sisi Butte	Octagon				■				

	Name	Model	1	2	3	4	5	6	7	Notes
	Hickman Butte	L-4				■				
	Clear Lake Butte	R-6		■						
	Devil's Peak	L-4	■							
Malheur	Flagtail	Crow Nest	■							
	Calamity	L-4-AR	■							
	King Mountain	CL-100	■							Condemned
	Bald Butte	R-6	■							
	Fall Mountain	L-4		■						
	Antelope Mtn	R-6	■							
	Dry Soda	L-4				■				
	Flagtail	L-4				■				
	Indian Rock	R-6				■				
	Black Butte	L-4	■				■			
	Dixie Butte	R-6				■				
	Calamity Butte	Octagon				■				
	Sugarloaf	L-4				■				
	West Myrtle Butte	Aermotor	■				■			
	Snow Mountain	R-6				■				
	Dry Mtn	Aermotor	■				■			BLM emergency staffing
	Fraizer Point	L-6	■				■			
	Craft Point	Platform Tower	■							

Forest	Lookout	Type								Notes
Fremont-Winema	Lookout Rock	R-6	■							
	Drakes Peak	L-4		■						rental from June 15 to Oct 15
	Bald Butte	L-4 Gable		■			■			rental from June 15 to Oct 15
	Hager Mtn	R-6		■		■				winter rental, summer fire
	Bald Mtn	L-4			■	■				Staffed by Walker Range Patrol under SUP
	Horsefly Mtn	R-6				■				
	Spodue	R-6				■				
	Dog Mountain	LO House				■				
	Morgan Butte	R-6				■				
	Sugarpine Mtn	CL-100				■				
	Calimus Butte	Cathedral				■				
	Pelican Butte	L-5	■							Slated for decommissioning
Deschutes	Fox Butte	Aermotor	■							
	Fox Butte ground house	L-4 gable	■							
	Walker Mtn	Cabin	■							
	Walker Mtn Tower	L-4	■							
	East Butte	L-4 Replica				■				may to sept
	Spring Butte	Octagon				■				may to sept
	Round Mountain	L-4				■				may to sept
	Lava Butte	L-4 gable replica				■		■		fire detection/ museum/ and interpretive center may to sept
	Black Butte	R-6				■				may to sept
	Trout Creek	Aermotor	■							

	Black Butte	D-6	■						
	Alder Springs	Crow Nest	■						
	Green Ridge	R-6		■		■			winter rental, summer fire
	Odell Butte	R-6			■	■			comm and fire detection may to sept
Crook'd River	Stevenson Butte	L-4			■	■			
		Totals	79	22	13	66	23	11	

APPENDIX D: USAGE MAPS

Lookouts Staffed for Fire Detection on National Forest Lands in Region 06
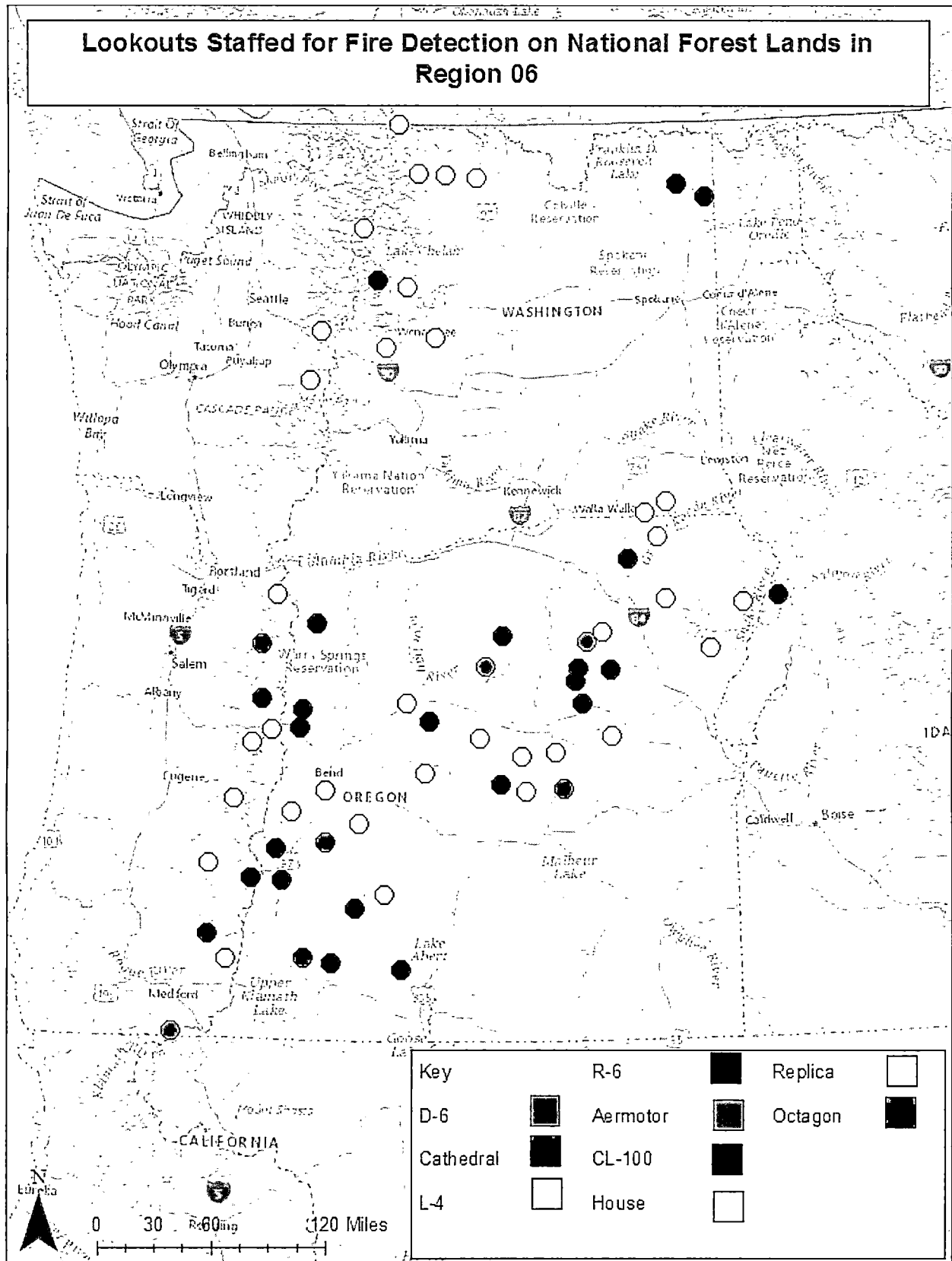
Lookouts Staffed in Emergencies on National Forest Lands in Region 06
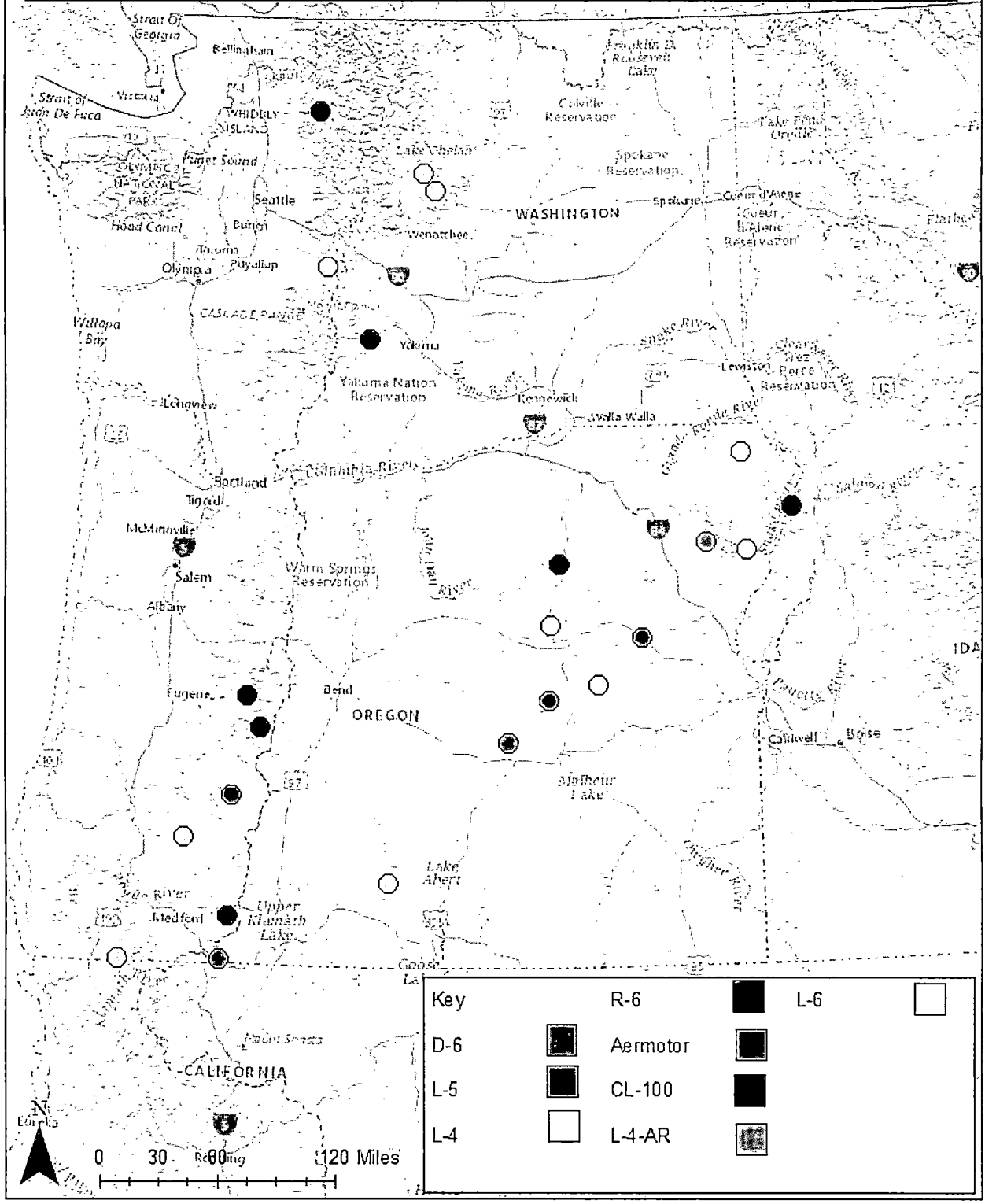
Inactive Lookouts on National Forest Lands in Region 06

WASHINGTON

OREGON

IDA

CALIFORNIA

N

0   30   60   120 Miles

Key	
Cabin	L-4
Tree Platform	Platform Tower
Crows Nest	R-6
D-6	L-6
Aermotor	CL-100/160
L-4-AR	Octogon
L-5	Replicas
Cathedral	House
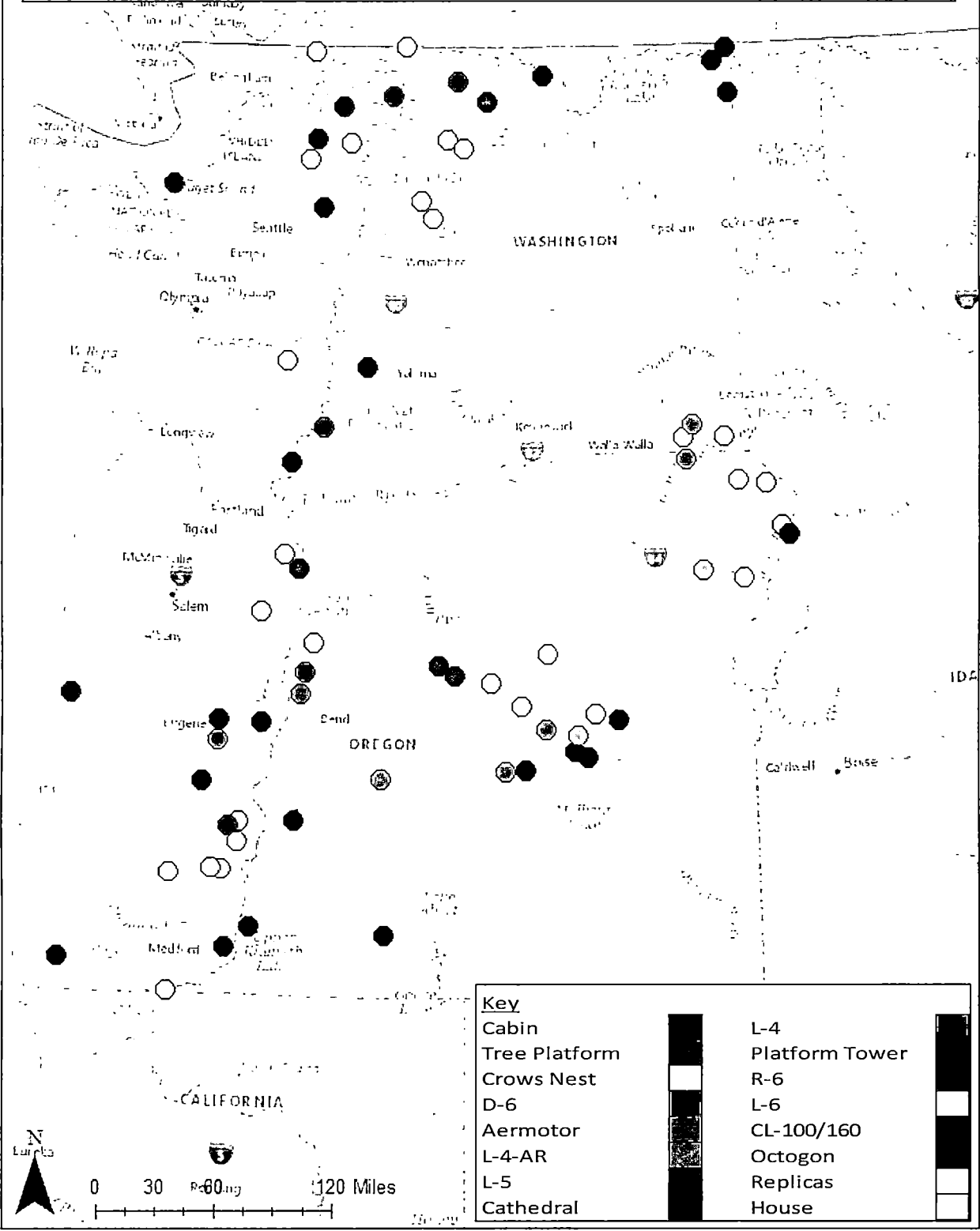
Lookouts in SUP Agreements on National Forest Lands in Region 06

Key

CL-100	■
D-6	■
L-4	□
R-6	■

N

0   30   60   120 Miles
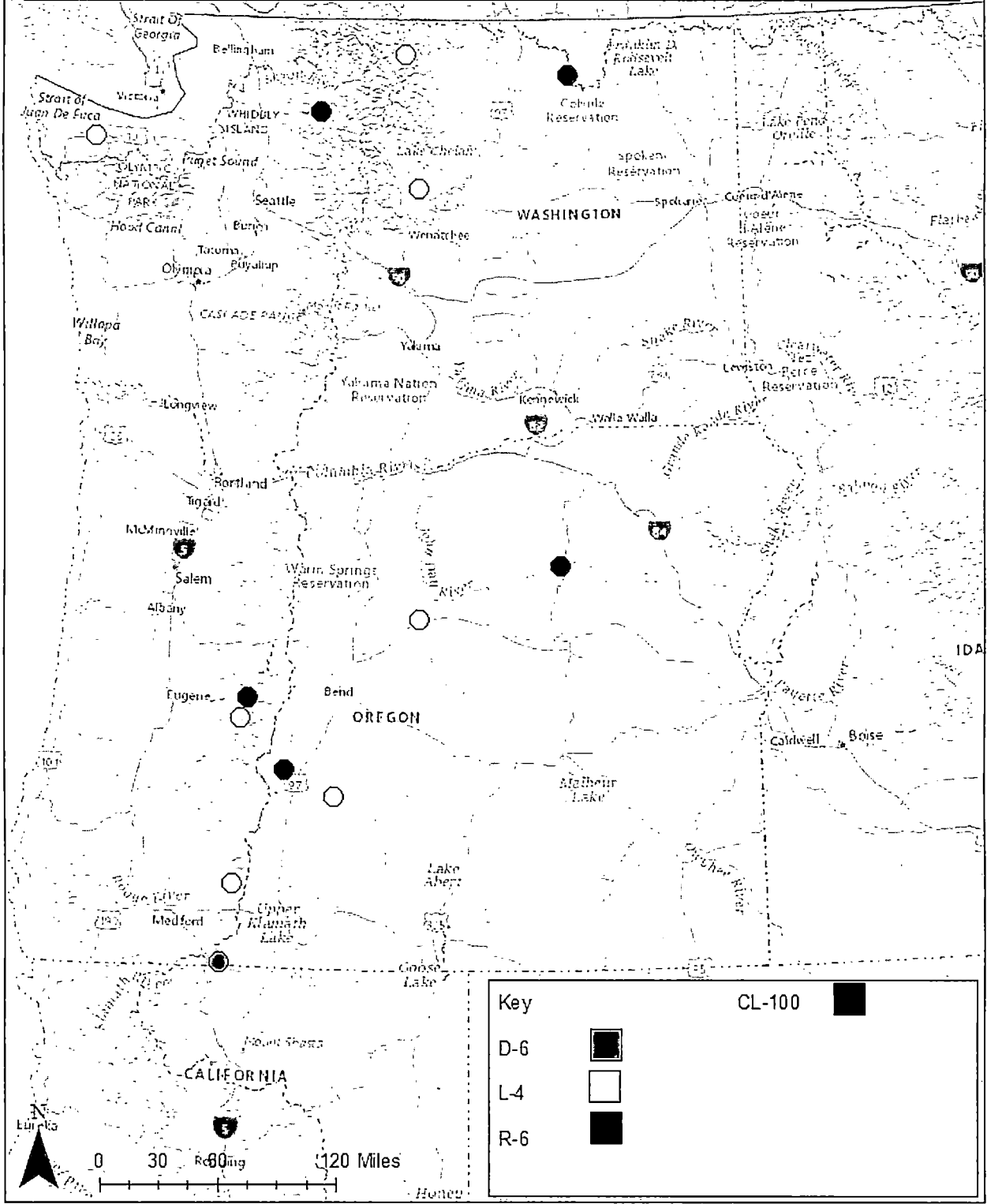
Lookouts on the Recreation Rental Program on National Forest Lands in Region 06

Key

L-4 ☐

R-6 ■

CL-100 ■

N

0   30   60   120 Miles

Other Uses for Lookouts on National Forest Lands in Region 06

Key

Aermotor

D-6

L-4

Cabin

0   30   60   120 Miles

APPENDIX E: LOOKOUT PLANS

D-6[41]

READY CUT
LOOKOUT HOUSE

INDEX

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Portland, Ore.

READY CUT
LOOKOUT HOUSE

Fig No.1   Sills   Scale ½"-1ft.
Operation No1
Material Mkd.   Fig.1   Pcs. 1 to 3 inc.

Floor Joists Fig No.2   Scale ½"-1ft.
2nd Operation
Material Mkd.   Fig.2   Pcs. 1&2

2 Ply roof paper between sub and finished floors.

Subfloor Fig.No.3   Scale ½"-1ft.
3rd operation
Material Mkd.   Fig 3 pcs 1and 2

All plates cut at center
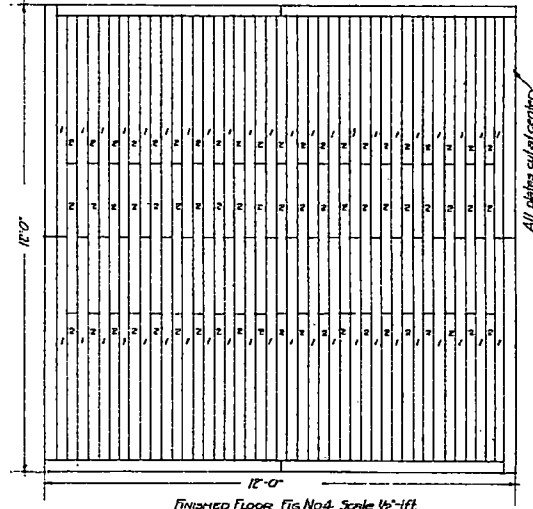
Finished Floor Fig No.4   Scale ½"-1ft.
4th. Operation.
Material Mkd.   Fig.4   Pcs. 1&2

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READY CUT
LOOKOUT HOUSE
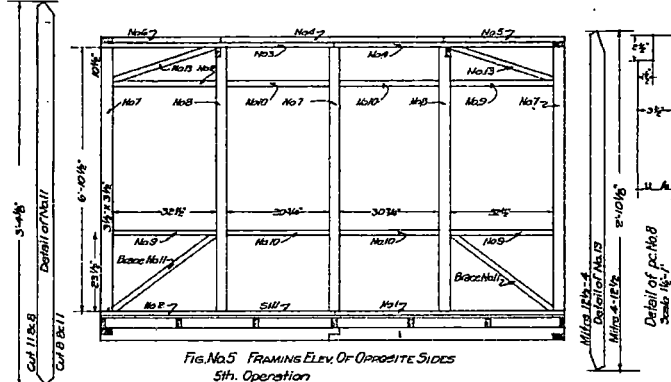
Fig.No.5 Framing Elev. Of Opposite Sides
5th. Operation
Material Marked Fig 5 Pcs. 1 to 13

Fig. No.6 Framing Elev.
5th Operation Scale ½"-1ft.
Material Marked Fig 6 Pcs. 1 to 14.
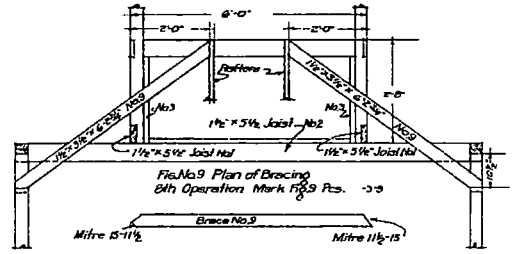
Fig. No.7 Sheathing Elevations
6th. Operation Scale ½"-1ft.
Material Marked Fig 7 Pcs 1 & 2

Fig.No.8 Tower Joists
7th. Operation Mark Fig8 Pcs 1to4

Fig.No.9 Plan of Bracing
8th Operation Mark Fig 9 Pcs.
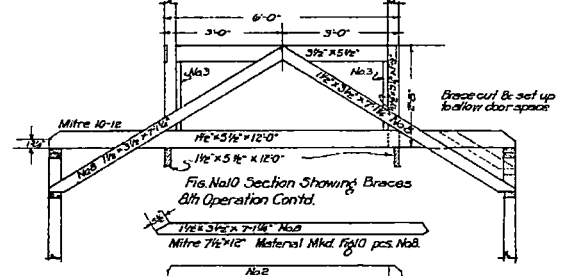
Fig.No.10 Section Showing Braces
8th Operation Contd.
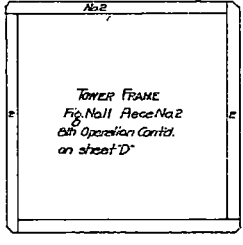
Tower Frame
Fig.No.11 Piece No.2
8th Operation Contd.
on sheet "D"

READY CUT
LOOKOUT HOUSE

Leave approx. 6" of wire project above post and spread apart. All four conductors should be carried up in this manner.

Fasten Conductors to center post and to each other by wire wrapped around and stapled to post.

On all four corners of building where wires pass over the roofs they are fastened by attaching to hip shingles with wire loop which is riveted to shingle before being sent to the field - Leave ends of loop sticking up after twisting See detail Fig. 30-B

4 wires on each side of tower fastened under eaves.

2 wires on each side of tower and fastened under sill.-

4 wires fastened to hip shingles

Connect conductors and building guys at all 4 corners with Crosby Clips.

4 wires on each side of building fastened under eaves.

Building Guys

Building Guys

2 wires on each side of building close to ground.

Building Guys

Maximum length should not be over 300 ft. from house to grounding place.

FIG. 30-B

Method of attaching Lighting Conductor to hip shingles. Tie-wire to be riveted and soldered to every other shingle by Contractor. Position of rivet hole abt. 2" from lower end of shingle.

14 Galv. Wire
4 Strand Cond.
Hip Shingle
Rivet

PERSPECTIVE VIEW
OF LIGHTNING CONDUCTORS
FIG. 30

DETAIL AT POINTS "B"

9 or 10 wraps

DETAIL AT POINTS "A"

9 or 10 wraps

4 strands

Notes:-

Twist all strands with nail after conductors are in place so that all wires are in close contact with each other. This should be thoroughly done on all sides.

Ground is made by coiling approx. 30 or 40 ft. of end of 4 strand conductor and covering with charcoal or coke in case of rock ground. For ground in soil bury coil and cover with charcoal or coke.

A wood stove is not recommended. If such is used in house a galvanized roof jack should be used and should be bonded securely to conductor with not less than four strands of #9 iron wire, twisted.

BILL OF MATERIAL

Main down conductors
16 pieces #9 iron wire 370 ft. long   5920 ft.

Horizontal conductor around tower under tower window
16 pieces #9 iron wire 9 ft. long   144 ft.

Horizontal Conductor around
8 pieces #9 iron wire 9 ft. long   72 ft.

Horizontal conductor around Main floor roof under eaves
16 pieces #9 iron wire 16 ft. long   256 ft.

Horizontal Conductor around bottom of Main Floor.
8 pieces #9 iron wire 16 ft. long   128 ft.

Total wire   6520 ft.

100 - Cleats for fastening conductors
4 - 3/4" Galv. Crosby Clips
8 - Sacks Charcoal or Coke.

DETAIL OF BLOCK
FOR FASTENING CONDUCTOR
FIG. 30-A

Holes for 6 - 8d Nails
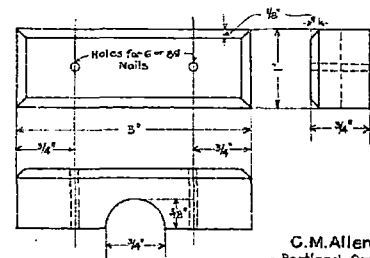
C.M.Allen
~Portland, Ore.
Jan. 6 - 1922 - C.V.N.

READY CUT
LOOKOUT HOUSE

Full Size Detail of Shutter fastenings
For Use of Above See Sheet No."G" for lower floor, and Sheet No."H" for Tower.
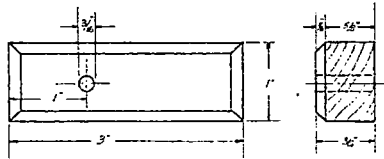
Fig.31 *Full Size Detail of Button*
Make 90 for Each house which allows 6 Extras.
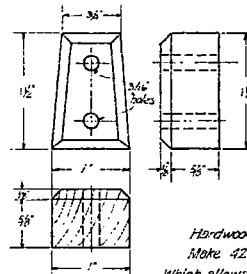
Hardwood Block to be used with Buttons
Make 42 blocks for each house
Which allows 4 Extras.
This type of block used on lower floors only.
Fig 31a

¾"x3½" T&G Flooring
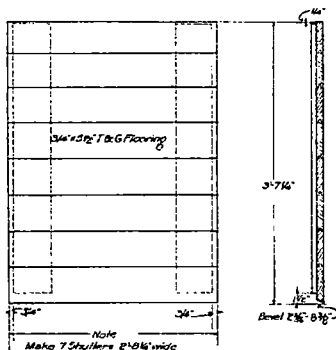
Make 7 Shutters 2⅞ 8½" wide
" 8 " 2'-6½" "
Fig 32 *Lower Floor Shutters*

½" Hole
(Ream with ⅝" bit
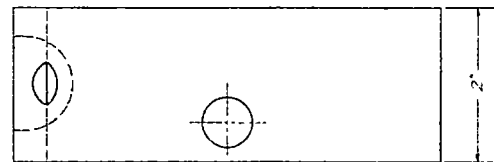
Corner Iron Bracket-Guy
to pass through center hole
Detail "A"- 4 required - See Sheet No.
Fig 34

Bore holes for 6d Com.Nail
2 holes per block.
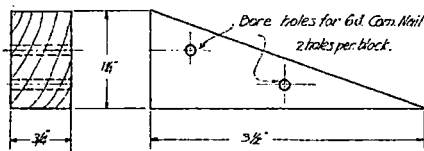
Fig 33
Hardwood block fits under window sill and on top of headers.
This block supports sill and determines its pitch and requires
the top of all headers to be the same elevation.
Nail block on each side of posts except at doorway.
Make 35 blocks which allows 5 Extras.
For position of this block See Sheet No. block under sill, lower floor.

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Portland, Ore.
Dec.-1921- C.V.H.

READY CUT
LOOKOUT HOUSE

6'-0"

3'-4"

BED
Material marked Fig.35

½" Rope

¾" x 3" lag
1 in each leg

⅜" x 3" machine bolt
1 in each leg

20"

¾ x 6" lag

4"

FIG. 35

4'

TABLE
Material marked Fig.36

3'-3"

8-⅜ x 4½" Bolts

6"

8"

10"

3'-9"

30"

FIG. 36

Sheet 1

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READY CUT
LOOKOUT HOUSE

Note. Detail of tower rafters at bottom of this sheet

Fig 13 Rafter Section Scale ½"=1ft
Operation No9 Material Mkd. Fig 13 Pcs.1-6

Detail of hip rafter No1 Mk:10-11-4

Jack Rafter.

I ply roofing

Mark Fig 14 Pc.7

Detail of Roof Pole

I ply roofing

Fig No.14 Sheating & Shingles
10th. Operation Scale ½"=1ft.
Material Mkd. Fig 14 Pcs.1-54

Hip Rafter No.4 Mitre.11-11   Fig 13 Pc. 4

Comon Rafter No5   Mitre.11-11   Fig 13 Pc. 5

Jack Rafter 11   Fig 13-Pc.6
No6

Fig.12 Tower Frame.
Material Marked Fig.12 Pcs.1-7
8th Operation Scale ½"=1ft

Fig 12a Detail of Flashing at Corners
of Towers Make 4 Rights & 4 Lefts.
To be made up ready to place   Scale 1½"=1ft.

Fig 12b detail of flashing bet.
tower corners to be fastened on
block under window sills See
Fig 19d sheet "E"

Filet

Frieze

Cover with corner board

Cover with corner board

Fig 15 Siding Elevation
11th Operation
Mark Fig 15 Pcs.1-4

Filet

Frieze

Cover with corner board

Trim on job

Cover with corner board

Fig.No.16 Siding Elev.
11th Operation Contd. Scale ½"=1ft.

Note:-
Use extra piece of ship lap under rustic
and at side of door as filler
Marked Fig 16 Pc. No.4

READY CUT
LOOKOUT HOUSE

Fig.17 Detail Of Main Cornice
12th. Operation Scale 1½=1ft.
Material Marked Fig.17 Pcs 1-7
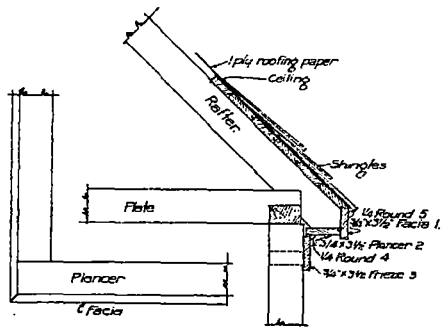
Fig.18 Detail Of Tower Cornice
13th Operation
Material Marked Fig.18 Pcs.1-5
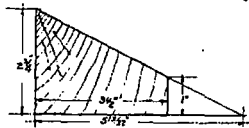
Fig.19d Crossection of Block
Under Tower Sill
Scale ½=1"
Make 4 pcs. 5'-5" long
Mark Fig.19 Pcs.1
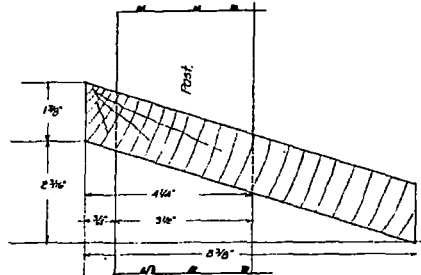
Fig.19a Detail Crossection of Lower
Floor Window Sill
Scale ½=1"

Fig.19b Tower window Sills
14th Operation. Scale ½=1 ft.
Mat. Mkd. 19b Pc.1
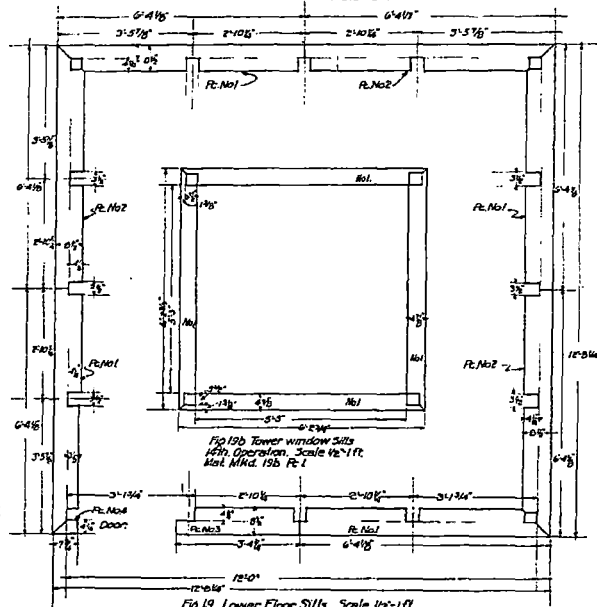
Fig.19 Lower Floor Sills Scale ½=1ft.
14th. Operation
Material Marked Fig.19 Pcs.1-4
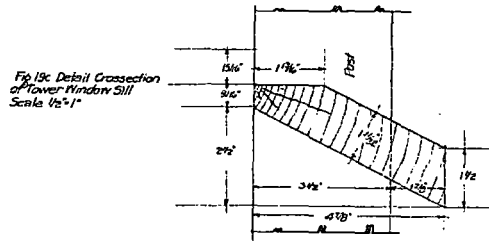
Fig.19c Detail Crossection
of Tower Window Sill
Scale ½=1"

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READY CUT
LOOKOUT HOUSE

Fig.22 Elevation Of Door.
Scale 1"=1ft.
Note: Door is shown approx. 1" long and is to be cut to fit opening on job.

Fig.22a.

Fig.21 Tower Plan
See Fig.21a for large detail
16th operation.

Fig.20. Plan Of Lower Floor And Tower
Scale 3/4"=1ft.
15th operation.

See Sheet No.6 For Large Detail Of Window And Roof.

Fig.23 Elevation Of Tower Shutter
Scale 1"=1ft.
Shutter of 1"x4" double V ceiling cleats of 1"x6" S4S lumber
17th operation.

Note
Buttons are on inside of Shutter and button into notch cut in stop.
See sheet No.6 for large detail

Shutters Open showing braces in place

Detail Of Brace For Holding Tower Shutters Open
8 Required
Make of 1/2" Stock
Scale 1 1/2"=1ft.
Fig.23a.

Fig.24 Detail Of Ladder
Scale 3/4"=1ft.

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Dec.-1921 - C.V.H.

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U.S.DEPT. OF AGRICULTURE
FOREST SERVICE
District 6

Double Strength Glass

Double Strength Glass.

Shutter

Casing Board

Hardwood Buttons

Cleat on inside of Shutter

Hardwood Buttons

Window Frame

Outside Stop pcs 1&2

Front Edge of Sill.

Vertical Sec. of Window & Shutter taken on line "A" "A"

Horizontal Crossection of Windows Post & Shutter on "B"-"B" 15th operation

DETAIL OF FRAMING WINDOWS ON LOWER FLOOR FIG.20a

Note - Windows on lower floor are built in stationary.
Scale 4"=1ft.

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READY CUT
LOOKOUT HOUSE

1½"x 3½" Rafter

½"x3½"Ceiling
Roof

Shingles 4" to weather
Building paper bet.
shingles & ceiling boards.

3½"x 3½" Tower frame

¼ round

¾"x3½" Facia

3½"x3½" post

¾"x3" Plancer

¾"x4" Frieze

1½"x 3½" header

¾"x1½" Stop, pc.II

Hinge
Window frame

Opening cut in stop, button
hinges into this notch

Hardwood button fastened
to cleat on shutter

Shutter

¾"x4½" Cleat

¹⁵⁄₁₆"x3½" double V ceiling

Shutter swings open thus being hinged to sill

Window swings in.

Notch cut in stop to recieve button.

End view of button

Hinge bolted to shutter &
fastened to sill with screws

Stop ¾"x2" bevel edges   pc.No.I
¼" over to 3/8" hor.

Window sill see detail
sheet No."E" Fig.19c.

3/8"x1" Drip strip

Hinge

Flashing bent up ½"
and tacked to sill

Block under sill

Flashing

3½"x 5½" Tower frame

1¹⁄₁₆"x 3½" Ceiling
Roof

1½"x3½" Rafter

Shingles 4" to weather

3½"x3½" post

Building paper bet.
shingles and ceiling
boards

Heavy dashed line
indicates building paper

Crossection of tower window
taken on "A"A" Verticle.
Scale 4"=1ft   All dimensions net

"A"

Tower frame

Frieze

Window frame

Stop pc.No2

Notch in stop to
recieve button
Position of button with
shutter closed

Casing
board

Double strength
glass.

"B" ————————————— **"B"**

Stop

Notch in stop

Position of button
with shutter closed

Stop. pc.No.I

"A" Elev.of tower window
with shutter removed.

Glass

Hinges

Stop

Sill

Slope of roof

Window swings

Window frames

Back edge of sill

Drip Strip

Hardwood button
V"Cleat

Stop

Shutter

Front edge of sill

Notch in stop to
recieve button

Casing board

Casing board

Horizontal Crossection tower
window at corner taken on "BB"
Scale 4"=1ft.

FIG. 21a. DETAIL OF TOWER WINDOWS
16th operation contd.

READY CUT
LOOKOUT HOUSE

Upper Window Header

¾ x 11½ x 5-7¾

¾ x 11½ x 5-7¾

¾ x 5½ - 15

DETAIL OF SHELVING
Material Marked Shelving

Brackets nailed to studding above window

¾ x 11½ x 5-7¾

DOOR

¾ x 11½ x 5-7¾

Shelf fastened to brackets with screws

Fig. 25

Anchor Bolts attached to outside of Building
8 Required
To be made locally

6½ x 5⅝ Machine Bolt

1" Round Iron

Solid Rock

Loose Rock

Hot Cement

Fig. 27

⅜" Galv. Strand Cable

1" round iron

Fig. 29

STAND FOR FIRE FINDER
Material Marked Fire Finder

To be in center of Tower Floor

Fig. 26.

¾ x ½

¾ x 5½

1 x 11 - 2'- 11"

1½ x 3½

1½ x 3½

1'- 10"

3'- 0

⅜" Galvanized Strand Cable

To Anchor

Fig. 28

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Dec.-1921- C.V.H.

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Anchor Post

2'

4"X4"X¼ angle

4"X4"X¼ angle

5'6"

Footing Type B

2'

30"square

5'0"

Piers should be masonry, concrete or brick and should rest on rock or solid ground.

Cement

18" " at top

PLATE A.

R.S.Shaw
Jan. 7, 1923

7'

Approx. 20'

Approx. 35'

9'8"

Approx. 50'

Approx. 60'

Approx. 75'

12'

14'

16'

18'

PLATE C. TO ACCOMPANY
SPECIFICATIONS TO MANUFACTURES
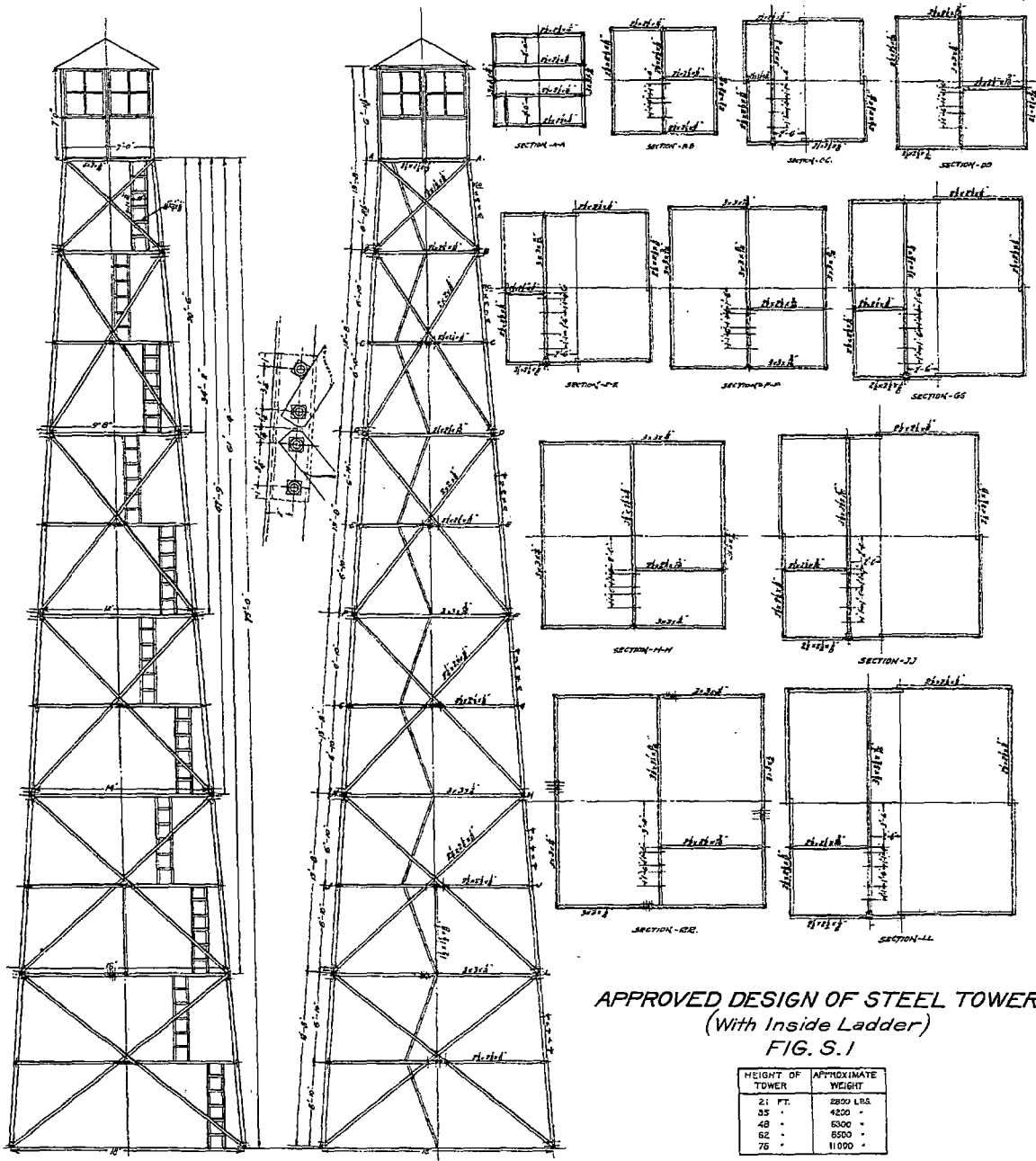
APPROVED DESIGN OF STEEL TOWER
(With Inside Ladder)
FIG. S.1

HEIGHT OF TOWER	APPROXIMATE WEIGHT
21 FT.	2800 LBS.
35 "	4200 "
48 "	5300 "
62 "	8500 "
75 "	11000 "

315
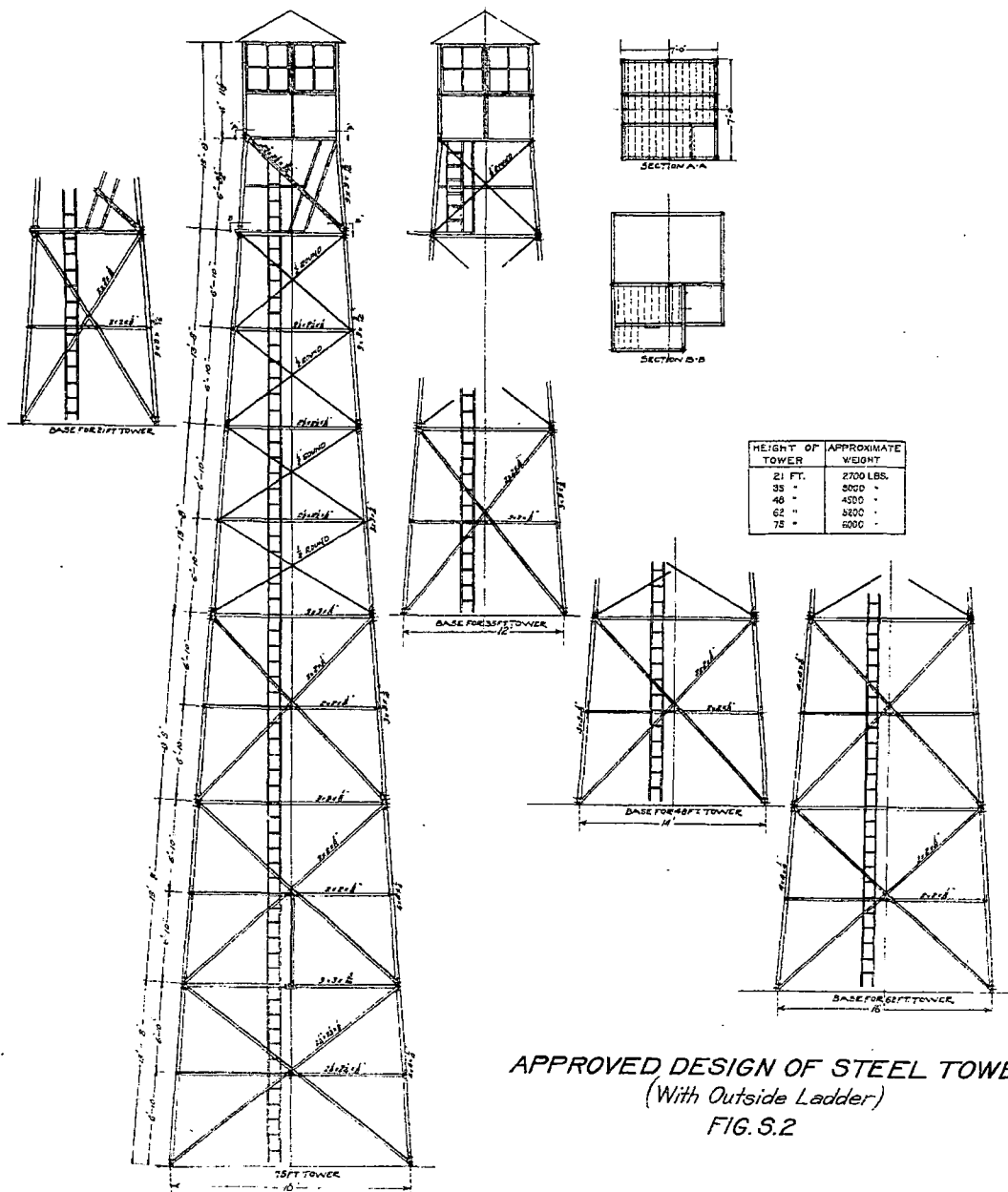
APPROVED DESIGN OF STEEL TOWER
(With Outside Ladder)
FIG. S.2

HEIGHT OF TOWER	APPROXIMATE WEIGHT
21 FT.	2700 LBS.
35 "	3000 "
48 "	4500 "
62 "	5200 "
75 "	6000 "

General Arrangement of Look Out Tower
Scale: ¼"=1'-0"

Hew 2-Sides to 3"thick. 16'-0" lg Braces.

N (2-pieces 5'-0" lg fastened to light-wires)
Wire Rope Clips 3-Bolts in each. ©

Hew 2-Sides to 3"thick. 16'-0" lg Braces.

Railings 3"dia.

Apron 60'-0" for each Guy. (L)
" 72'-0" " " , if dead Man is used.

Hew 2-Sides to 4"thick. 17'-0" lg Braces

Hew 2-Sides to 4"thick

Main Members 55'-0" lg 14"Butt-8"Top.

Hew 2-Sides to 4"thick 24'-0" lg Braces.

Stairway Stringers 3"-8"

To Ground

2"-8'-0" Split Anchor Bolts (K)

M Fasten these #4 Galv.Lightning Wires to Guy Ropes with Clips-3-Bolts in each, and run 1-Wire along each main member as shown, and ground

C I Washers
(E)

Wire Rope Clips
Solid Eye
Turnbuckle
Anchor
Clevis End

Bill of Material		
Name	No Req'd	Mark
Four-Light Sash 13/16"Glass	12	A
3/4"x10" Drift Pin	4	B
3/4"x 13" Bolts - 3"lg thd	4	C
3/4"x 18" Bolts - 3"lg thd	28	D
Std C.I. Washers for 3/4"Bolts	200	E
3/4"x 13" Bolts - 6"lg thd	8	F
3/4"x 14" Bolts - 6"lg thd	8	G
Std Turnbuckle: 3/4"dia screw	4	H
3/4"x 2'-0" Split Anchor Bolts for Guy Rope	4	J
3/4"x 8'-0" Split Anchor Bolts for Tower	4	K
Aprox 60 ft each of 7/6"Galv. Guy Ropes	4	L
#4 Galv Lightning Wires 60'-0" each	4	M
#4 " 10'-0" "	5	N
Wire Rope Clips for 7/6"Rope	12	O
3/4"dia-7'-6"lg. twisted reinf bars for decks	12	P
3/4"x 2'-8" Bolts - 6"lg thd	12	Q
3/4"x 12" Bolts - 4"lg thd	8	R
3/4"x 2'-4" Bolts - 4"lg thd	48	S
3/4"x 10" Bolts - 3"lg thd	8	T
3/4"x 2'-1" Bolts - 3"lg thd	24	U

General Arrangement of Look Out Tower

Scale: 1/4"=1'-0"

SETTING OF ANCHOR RODS
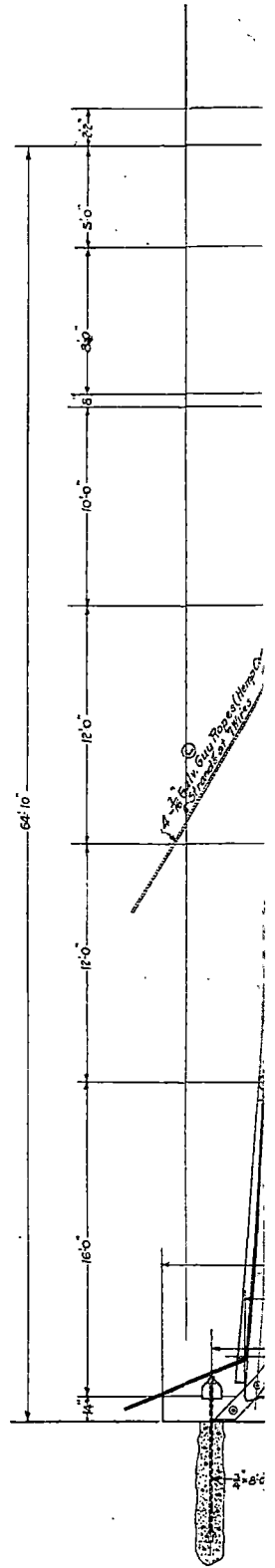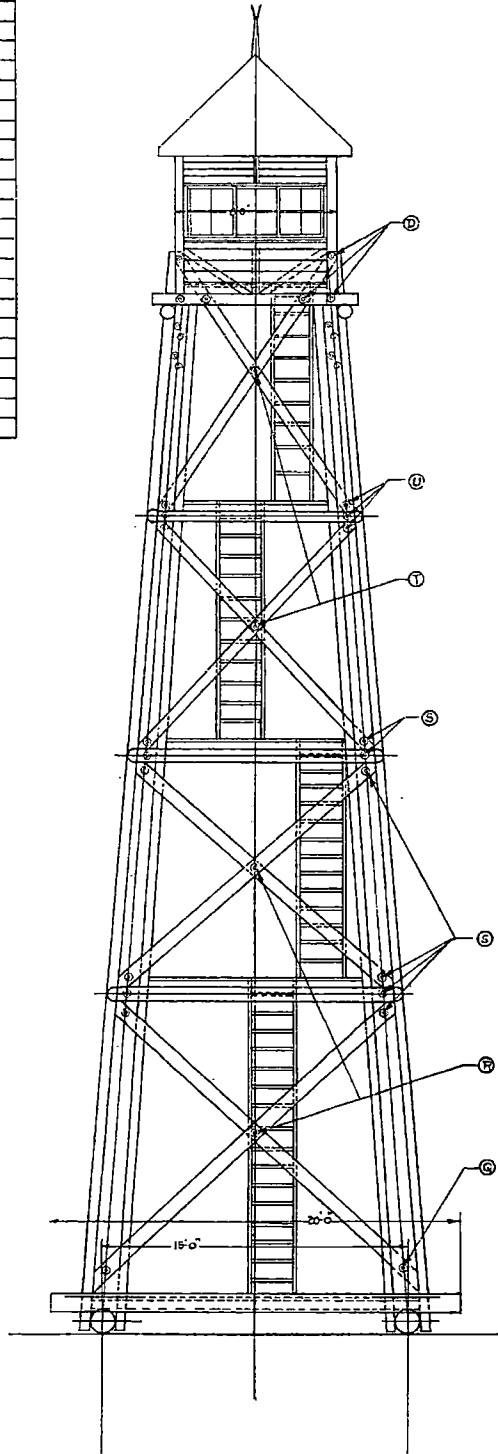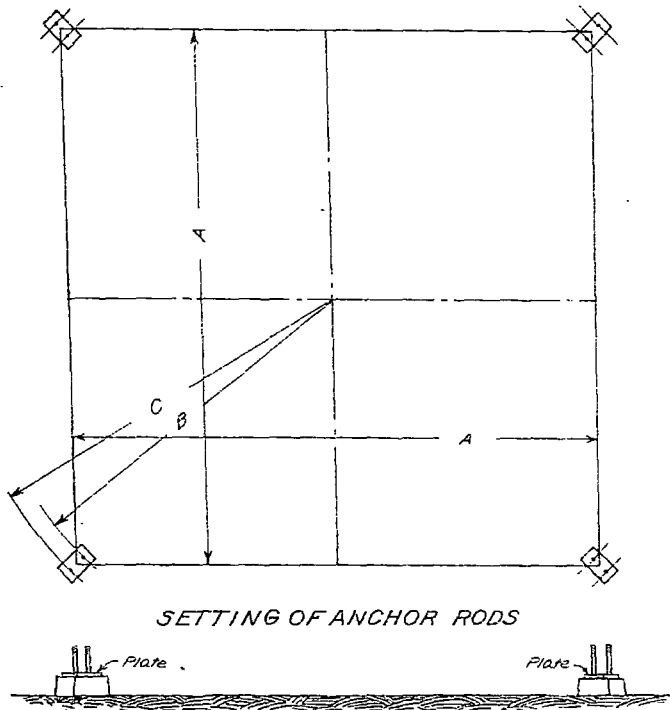
Fig. 1.
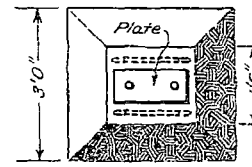
Fig. 2.
DETAIL OF PIER

TABLE OF DIMENSIONS

HEIGHT TOWER	A	B	C	D	E	F
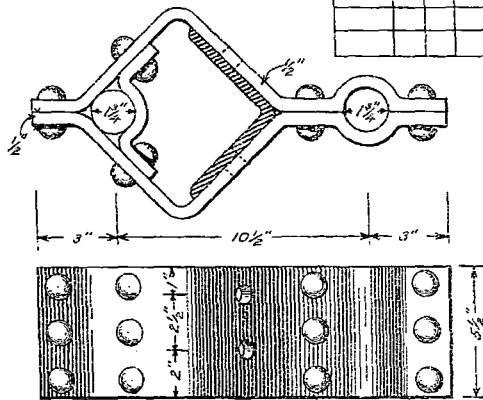
Fig. 4.
DETAIL OF FOOT CLAMP
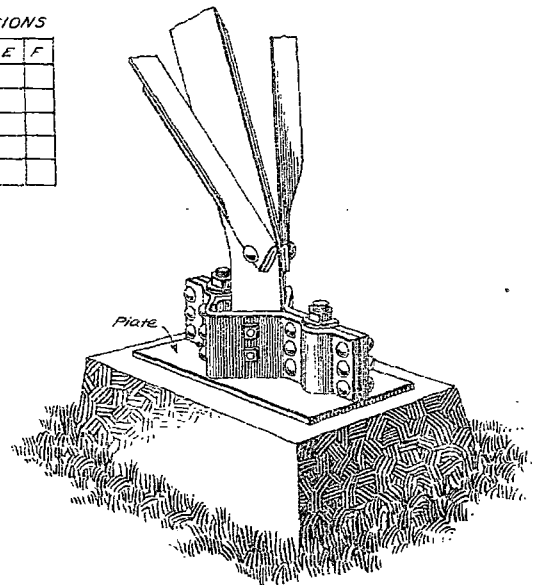
PERSPECTIVE VIEW OF FOOT OF TOWER, SHOWING METHOD OF FASTENING TOWER TO FOUNDATION
Fig. 3.

PLATE B.

Sectional Plan.

Section A-A

Section B-B.
Scale: 1"-1'0"

Detail of Window Stop
Scale: 1"-1'0"

Dead Man for Ordinary Soil
Scale: 1"-1'0"
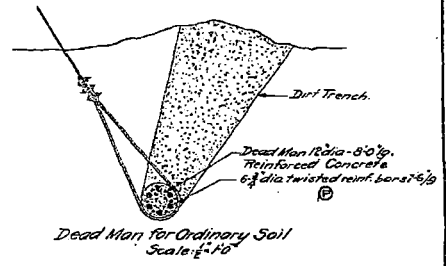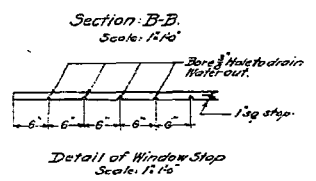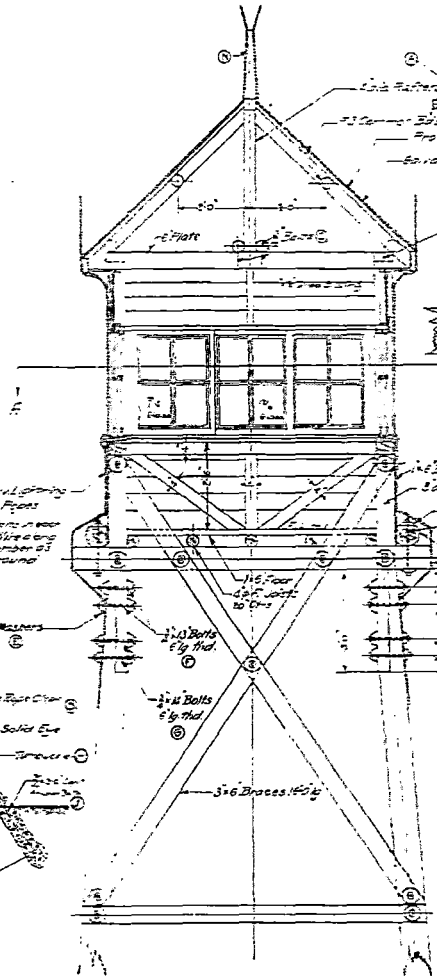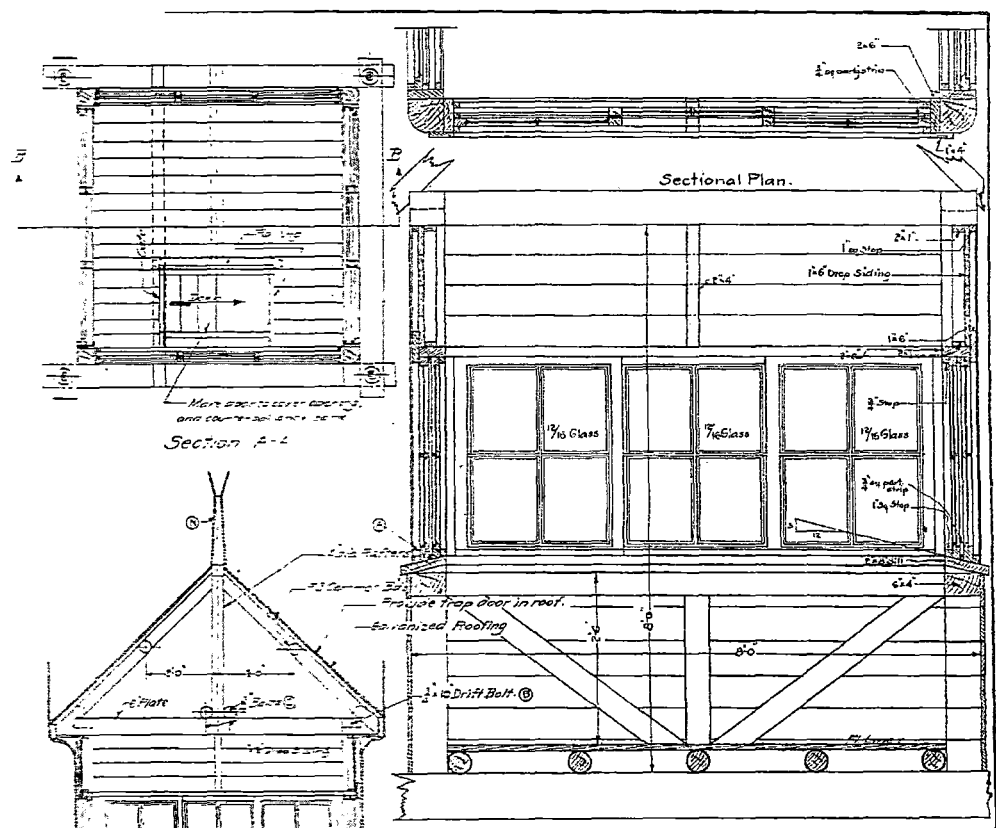
LOOK OUT TOWER
Design T-1
District 1
Scale: As shown   May 15th 1922

Section thru ℄ of Tower
Scale: 1"-1'0"

320

GENERAL VIEW & ELEVATION

Guy-wire to be ⅜" wire-strand with turn-buckle, set at an angle of 45° to structure.

Length of splice to be not less than twice the diameter.
Scale ~ ½" 1 foot.
③

Not less than 5'

Not less than 6'

Split-log landing

Showing method anchoring cable in earth by using good size dead-man buried deep.

For resistant wood; reinforced concrete or bar of iron or steel.

When surrounding material is solid rock this method is advised.

Method of constructing footings for structure.

Nail wire or strap over rungs for safety.

Posts of most durable timber set in the ground either with or without a concrete slab.

Enlarged detail of construction.

Corner ①
Scale ~ 1½" 1 foot.

Enlarged ~ Corner ②
detail of construction.
③
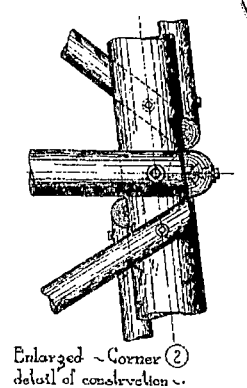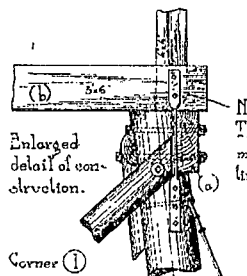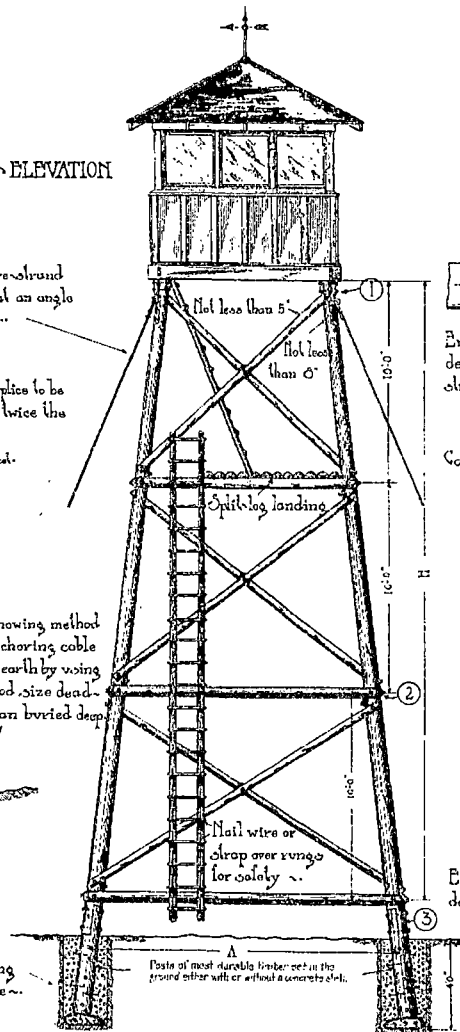
End posts, collar and sway braces must be of sound, straight native timber cut and fitted on the job.

Roof ⅓ pitch pyramid construction.

For housing use rough lumber wherever possible.

Two opposite windows to swing

Strap

Rough siding with battens

Note strap iron ties. They are important members. Old wagon tires could be used.

SECTION & HOUSING

Guy-wires

A PLAN VIEW & ROOF & FLOOR
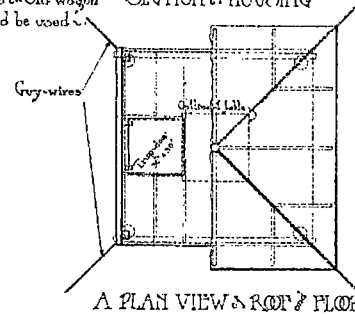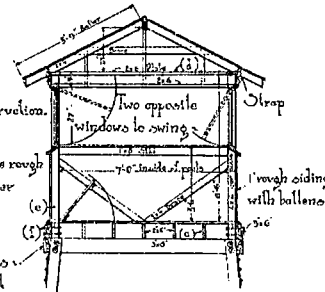
Adjustable oak or juniper straight edges.
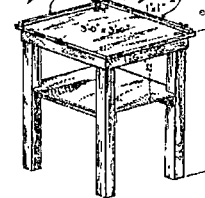
PROTRACTOR TABLE
Scale ~ ½" 1 foot.
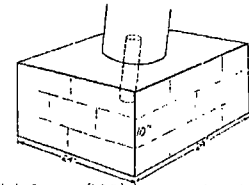
Block of concrete (1:2:3) or masonry set up with concrete mortar.
If durable timber is not available set post on footing block of concrete, masonry, or large hard stones. Stones should be perfectly solid and not less than 16"x6"x8".
If tower is located on solid rock situation place the legs of tower directly on the natural foundation after preparing for the logs to rest in.

TOWER DIMENSIONS					
H	30'	40'	50'	60'	
A	14'-6"	16'-6"	18'-6"	21'-0"	

BILL OF MATERIAL

a	2 pcs	3x6x9' rough
b	2 pcs	3x6x9'
c	6 pcs	2x6x8'
d	4 pcs	2x6x6'
e	4 pcs	4x4x7'
	160'L	2x4
	64' b.m.	1" flooring
	500 b.m.	1" rough boards (siding~roofing~battens)
	6 pcs	1x6x6' sill
	1½ rolls	Prepared roofing (4 ply)
	12 pcs	One glass window sash (20x26 outside)
	100'L	Weather strip
	55'L	Quarter-round
	10 pcs	¾x6" bolts nuts. Also ¾" bolts, nuts, washers wherever called for in plans and of lengths to fit timber used.
	4 pcs	¾" eye-bolts for guy-wires
	2 pcs	Turn buckles
		⅜" wire strand (breaking strength 5000 lbs)
		Cement and nails.
		¼"x2½" strap iron for either new or old wagon tire of equal cross section area and strength.
		Hardware
		Preservative paint

LOG LOOKOUT TOWER
~ PLOT. 3 ~
Scale ⅛"~¼"~1½"~1 foot.   Date ~ June 15, 1921.
Drawn by J.J.M.   Approved by C.A. Long.
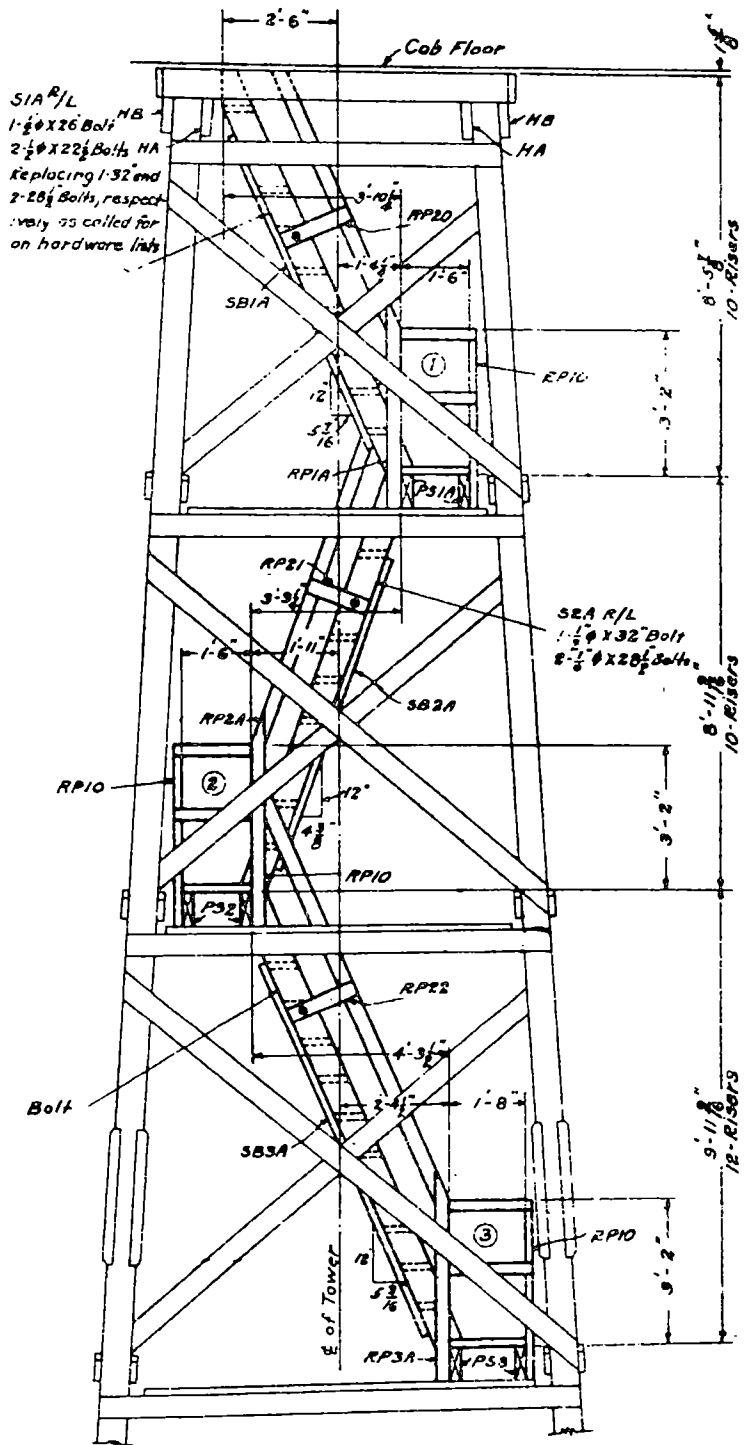
ALTERNATE STAIR LAYOUT
CT-1 Tower

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[43] The following tower plans are from "Lookouts in the Southwestern Region", Cultural Resources Management Report No. 8, USDA Forest Service Southwestern Region, September, 1989.

Chain link fencing

Back of L

3'-6"
5"

L=1L 3 x 3 x 1/4
D=2B 2 1/2 x 2 x 3/16
d=1L 2 1/2 x 2 1/2 x 3/16
s=1L 2 1/2 x 2 x 3/16

At rear face of tower

5 Risers at 9"
8 Risers at 9 1/16"=9'-9 1/2"

L=1L 3 x 3 x 1/4
Under stair landing:
S² =2B 3 1/2 x 3 x 1/4
For 3 other sides:
S²=2B 3 x 2 1/2 x 1/4
D=2B 2 1/2 x 2 x 3/16
d=1L 2 1/2 x 2 1/2 x 3/16
s=1L 2 1/2 x 2 x 3/16
at this landing only

4 1/2

13 Risers at 9"=9'-9"

4 1/2

L=1L 3 1/2 x 3 1/2 x 1/4
S³=2B 3 1/2 x 3 x 1/4
D=2B 2 1/2 x 2 x 3/16
d=1L 2 1/2 x 2 1/2 x 3/16
s=1L 2 1/2 x 2 x 3/16

14 Risers at 9"=10'-6"

4 1/2

L=1L 4 x 4 x 1/4
S⁴=2B 3 1/2 x 3 x 1/4
D=2B 3 x 2 1/2 x 1/4
d=1L 2 1/2 x 2 1/2 x 3/16
s=1L 2 1/2 x 2 x 3/16

15 Risers at 9"=11'-3"

4 1/2

L=1L 4 x 4 x 5/16
S⁵=2B 4 x 3 x 1/4
D=2B 3 1/2 x 3 x 1/4
d=2B 2 1/2 x 2 1/2 x 3/16
s=2B 2 1/2 x 2 x 3/16

17 Risers at 9"=12'-9"

4 1/2

L=1L 4 x 4 x 7/16
S⁶=2B 4 x 3 x 1/4
D=2B 3 1/2 x 3 x 1/4
d=2B 2 1/2 x 2 1/2 x 3/16
s=2B 2 1/2 x 2 x 3/16

18 Risers at 9"=13'-6"

4 1/2

L=1L 5 x 5 x 3/8
S⁷=2B 5 x 3 1/2 x 5/16
D=2B 4 x 3 x 5/16
d=2B 2 1/2 x 2 1/2 x 3/16
s=2B 2 1/2 x 2 x 3/16

NOTE
Sᵥ=1L 2 1/2 x 2 1/2 x 3/16

Sym. abt. except for stairs

21 Risers at 9"=15'-9"

4 1/2

FRONT OF TOWER
Showing Sections for tower and
Arrangement of stairway

SECTION A-A

$\frac{3}{4}$" plow steel, hemp center, galv., wire rope

$\frac{3}{4}$" cable bridge bowls to be furnished with cable contract.

Ground Surface

Anchor Rods

Anchor Plate

GUY ANCHOR DETAIL

4 Required

Face 'A'

Face 'B'

Face 'B'

Face 'A'

Variable

Tower Footing

Cable Support

Guy Anchor

FOOTING & ANCHOR PLAN

This layout is square.
Cable shall slope at 45°.
Variable dimensions shall
be determined in the field to
suit local conditions.

SIDE ELEVATION

TREE PLATFORM

90°-Side Outlet
Galv. Elbow. 1½"

1½" Galv. Pipe Railing.

Side Outlet
Galv. Tee 1½"

1½" Square Galv.
Floor Flange

2"-6" Planking

2"-6"-4'-10" Header

2"-6"-4'-10" Header

FRONT

L-4 GABLE

8' shiplap for Sheathing

Shingles 4½" to weather
Tarpaper under Shingles

Note: Put siding on from
the top down over Tarpaper.

L-4 HIP

Hip roof cap.

5-2" cedar shingles, 5" to weather.

Hips to be a double row of cedar shingles. Double course at bottom.

Safety Flue

Fixed Sash

4 Lt. Fixed Sash

4 Lt. Hinged Sash

Fixed Sash

1½ x 3⅜ net.

1x6 single V rustic siding 5 and 2 lengths.

1"x 4"

1"x 6"

1"x 6"

③ ④ ⑤ ⑥ ⑦ ① ②

L-6

FLOOR PLAN
SCALE

SIDE ELEVATION
SCALE

FRONT ELEVATION
SCALE

See detail

1"ø Pipe 12 ft. long

Place flag-pole so as to hoist flag from first landing

Ventilator optional, furnished with tower
See R-7 Dwg. No.   L-1407-A

¼ Pitch

Roof 16 oz. Copper

Visor hinge

Visor

Sash pivot

Bolts and nuts to clear visor bars

Steel Sash

Cap, 2" nipple & coupling

Csk. rivet in leg L

Sash clips

7'-0" b.b. of ls

Bend line

1"ø R.H. Bolts 6"± c.c.

Bracket pls. ¼ thk.

6" Galv. cleat

Sheet metal siding optional, either
20 ga. galv. copper bearing sheet steel, F.S. QQ-I-696
or 16 oz. copper same as roof

CAB ELEVATION

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BALL ORNAMENT FINIAL
SEE DETAIL

1"ø PIPE
9'-0" LONG

¼" x 1½" STRAP
IRON BRACE
SEE DETAIL

12"

5'-8"

16" NIPPLE

ELBOW

OVAL
FLANGE

SIDE ELEV.   FRONT ELEV.

LIGHTENING PROTECTION SYSTEMS[45]

PROTECTION AGAINST LIGHTNING
HIPROOF TYPE LOOKOUT HOUSE

All conductors to be
No. 2 B&S ga. S.D.copper
wire attached to bldg.
(with cond. straps) not
over 3 ft. apart.

Type T7 Air Terminal

Down Conductors attached to
galv. iron hip shingles.
See Working Detail
Sheet.

4 down cond.
2 hor. "
Each to be in one
continuous length.

This conductor to be
buried in trench (or laid on
top of rock) close to ground
line of structure, as specified
under "Ground Connections",
page 4.

Ground conductors
to extend from building as
specified under "Ground
Connections", page 4.

See Working Detail Sheets for description of connections at R and Q and Air Terminal,T-7.
C.M.A.   K.E.B. 1932

PROTECTION AGAINST LIGHTNING
BUILDINGS WITH GABLE ROOFS

Each down cond. to
be in one continu-
ous length.

Type T5 Air Terminal

Type T5 Air Terminal
(See Working Detail Sheet)

All conductors to be
No. 2 B&S gauge soft
drawn copper wire,
attached to bldg.
with (conductor straps)
not over 3 ft.
apart.

Ground conductors to
extend from bldg. as
specified under "Ground
Connections" on page 4.

This Horizontal Cond.
to be buried in a trench (or
laid on top of rock) close to
bldg. line, as specified under
"Ground Connections", page 4.

4 - Down Cond.
2 - Hor. "
1 - Ridge "
Each to be in
one continuous
length.

See Working Detail Sheets for description of Air Terminal and R connections.
See Material List "A" for building with guys and List "B" for building without guys.
When guys are used, connect guys to down conductors with "Q" connections.

C.M.A.   K.E.B. 1932

All conductors to be
No. 2 B & S ga. copper wire.
4 down conductors,
3 horizontal conductors each
to be in one continuous length
attached to building with(conductor
straps)not over 3 ft. apart.
(If impracticable see Par 17 of
General Instructions)

Type T-7 Air Terminal

T-7
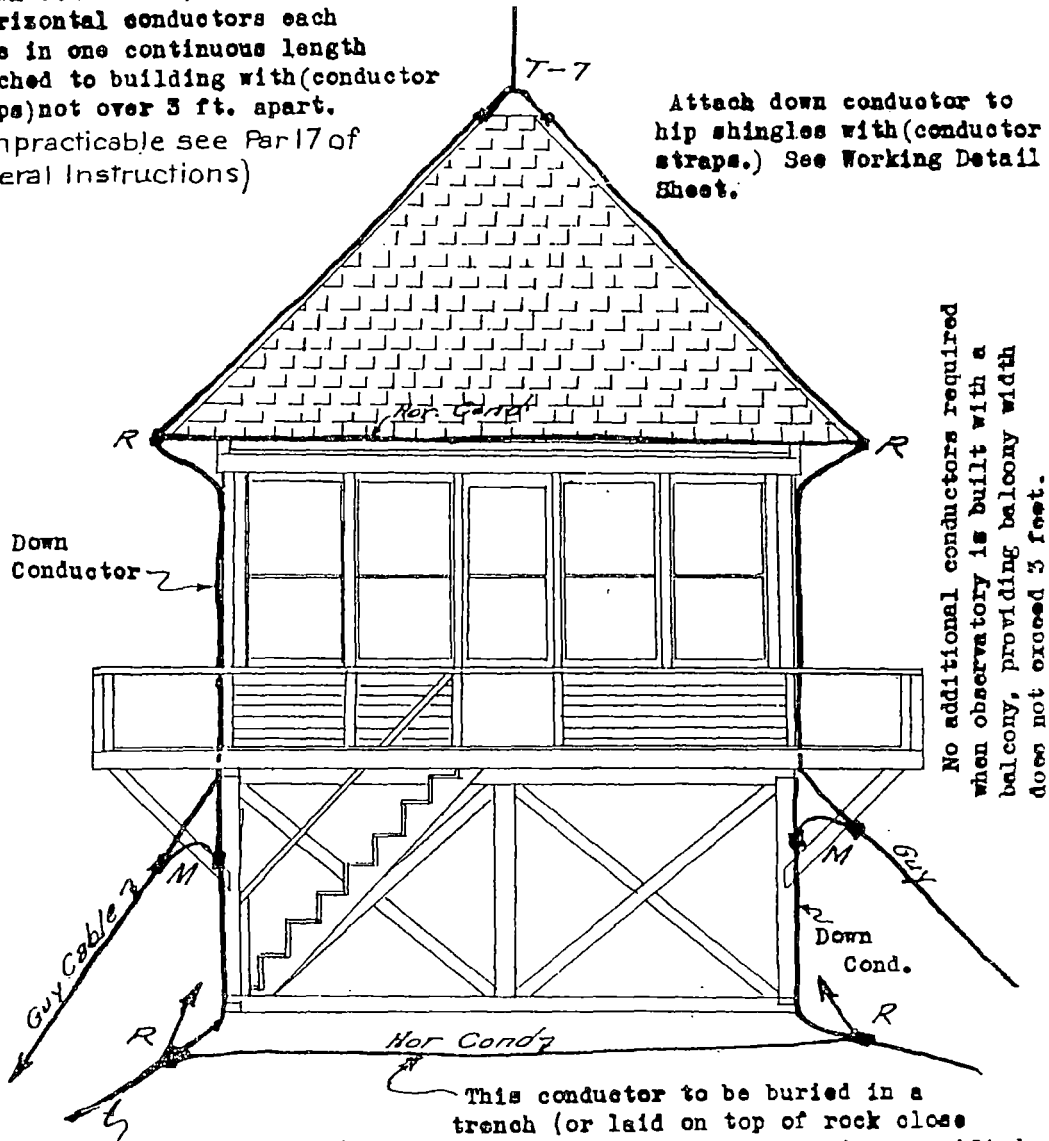
Attach down conductor to
hip shingles with(conductor
straps.) See Working Detail
Sheet.

R   R

Down
Conductor

No additional conductors required
when observatory is built with a
balcony, providing balcony width
does not exceed 3 feet.

Hor Cond'

Guy Cable

M

M

Guy

Down
Cond.

R   Hor Cond'   R

This conductor to be buried in a
trench (or laid on top of rock close
to ground line of structure)as specified
under "Ground Connections", page 4.

Ground conductors to extend
from building as specified
under "Ground Connections",
page 4.

See Working Detail Sheets for description of connections at M and
R and at Air Terminal T⁷.
C.M.A⸱   March 1932   K.E.B._____

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PROTECTION AGAINST LIGHTNING

R-6 LOOKOUT HOUSE

Type T7 Air Terminal

All conductors to be
No. 2 ga. S. D. copper
wire attached to
bldg. with (cond.
straps) not over
3 ft. apart.

Down Cond. to be attached to
galv. iron hip shingles with
(cond. straps.) See Working
Detail Sheet.

4 Down Cond.
4 Hor.   "
Each to be in one
continuous length.

Horizontal Conductors

Down Conductors

Ground Conductors
to extend from building as
specified under "Ground
Connections", page 4.

This conductor to be
buried in a trench (or
laid on top of rock)
close to ground line
of structure, as
specified under "Ground
Connections", page 4.

See Working Detail Sheets for description of connections at R,
Q, and at Air Terminal T7.

C. M. A.   25   K.E.B. 1932

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PROTECTION AGAINST LIGHTNING

STEEL TOWERS WITH WOODEN INCLOSED OBSERVATORIES

Type T7 Air Terminal

Attach down cond. to hip shingles with (cond. straps) as shown on Working Detail Sheet.

Hor. Cond.

All conductors to be No. 2 B&S ga. soft drawn copper wire, attached to bldg., with (conductor strap) not over 3 ft. apart.

No additional conductors required when observatory is built with a balcony, providing balcony width does not exceed 3 ft.

Guy S

Guy S

Guy

4 down cond. from Air Terminal to tower frame.
2 Hor. cond.
4 ground cond.
Each cond. to be of one continuous piece.
(If impracticable see Par. 17 of General Instructions)

Hor Cond

Ground conductors to extend from building as specified under "Ground Connections", page 4.

This conductor to be buried in trench (or laid on top of rock) close to ground line of structure, as specified under "Ground Connections", page 4.

See Working Detail Sheets for description of S, R, P, and Air Terminal connections, T7.

C.M.A.

26

K.E.B. 1932

335

PROTECTION AGAINST LIGHTNING

STEEL TOWERS WITH STEEL INCLOSED OBSERVATORIES

No Air Terminal required

No Horizontal Conductors

No additional conductors
required when observatory
is built with a balcony
provided balcony width
does not exceed 3 ft.

No down conductor

Ground conductors to
extend from building, as
specified under "Ground
Connections", page 4.

[Hor Cond]

This conductor to be buried in a
trench (or laid on top of rock)
close to ground line of structure,
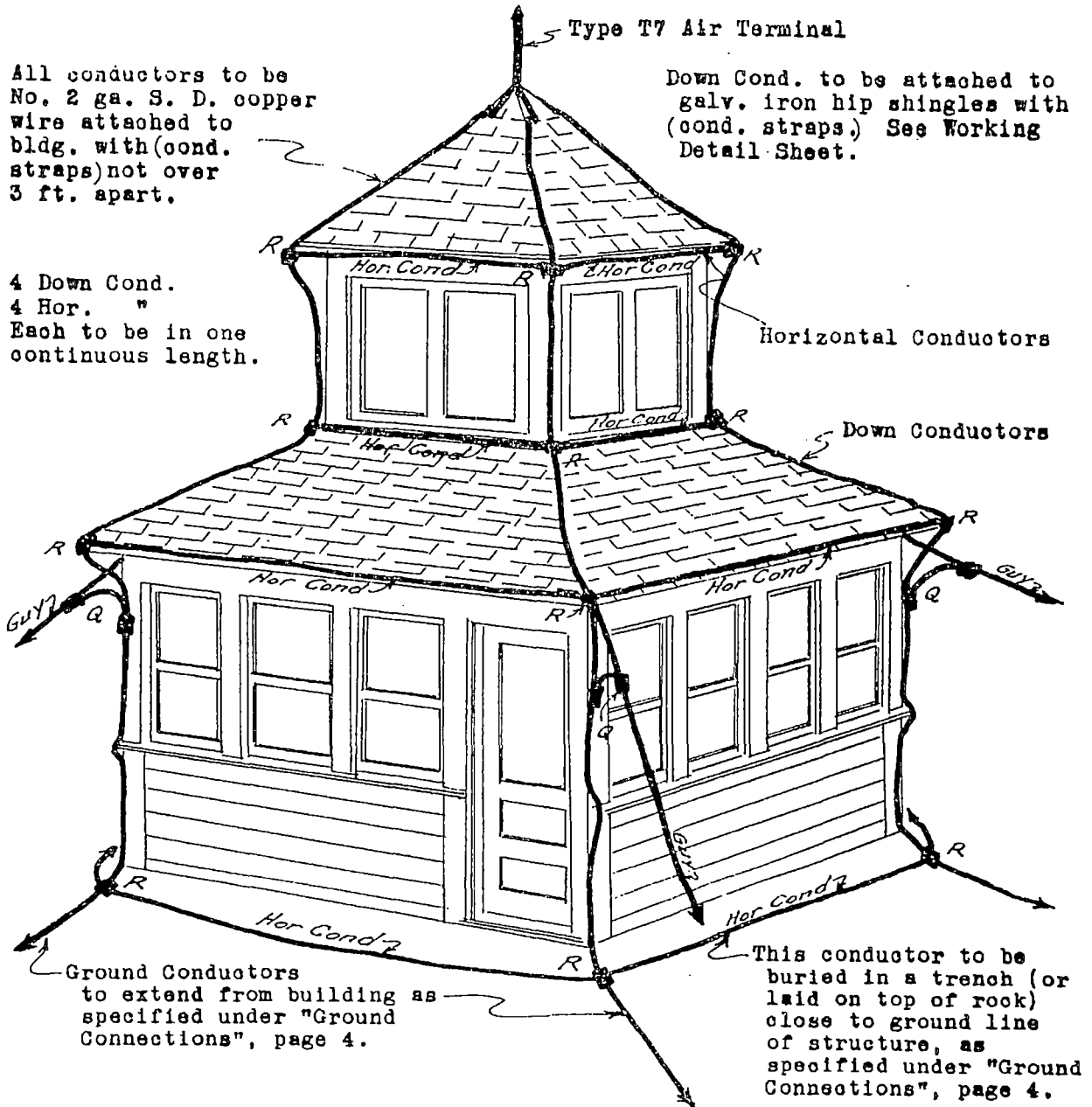as specified under "Ground Con-
nections", page 4.
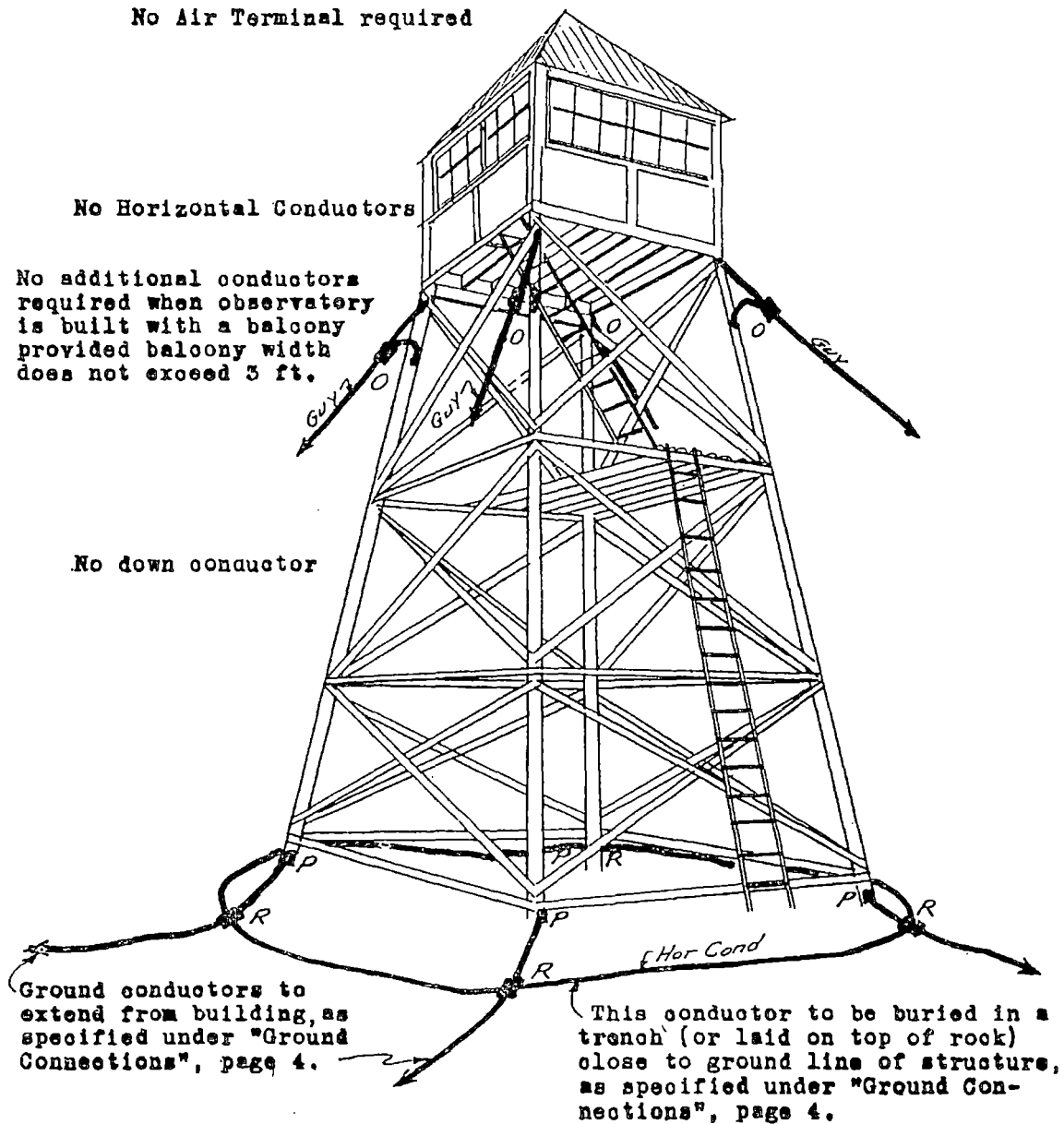
See Working Detail Sheets for description of connections R, O, P.

PROTECTION AGAINST LIGHTNING

WOOD TOWER WITH WOODEN INCLOSED OBSERVATORIES

Type T7 Air Terminal

All conductors to be
No. 2 B&S ga. S.D.copper
wire attached to bldg.
with(cond. straps) not
over 3 ft. apart.

Down cond.to be attached
to galv. iron hip
shingles with(cond.
straps.) See Working
Detail Sheet.

4 down cond.
3 hor. "
Each to be in one con-
tinuous length.(If im-
practicable See Par 17 of
General Instructions.) No
additional conductors
required when observa-
tory is built with a balcony

No additional con-
ductors required when
observatory is built
with a balcony, pro-
viding balcony width
does not exceed
3 ft.

Down conductor

Ground conductors
to extend from tower legs,
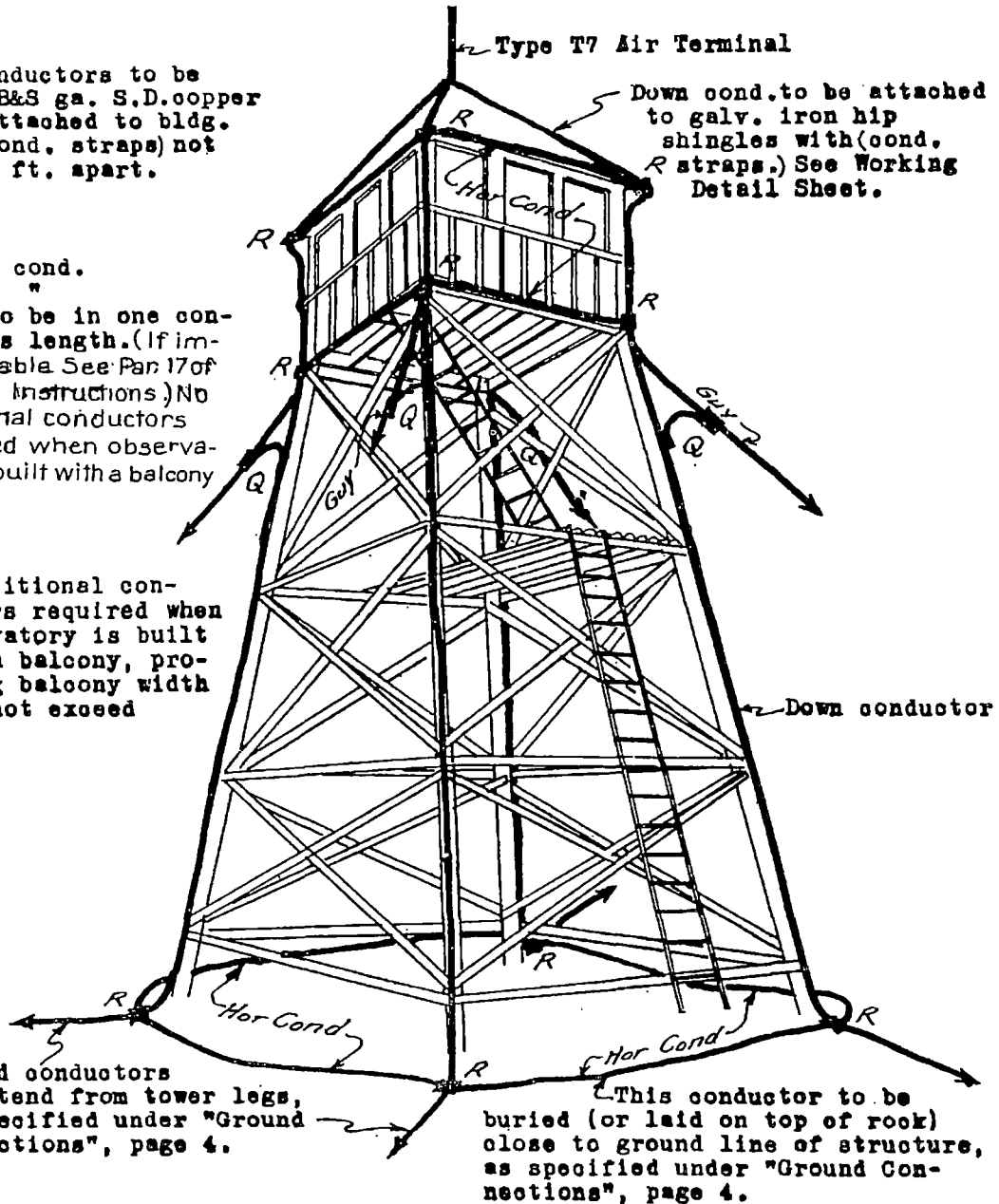as specified under "Ground
Connections", page 4.

This conductor to be
buried (or laid on top of rock)
close to ground line of structure,
as specified under "Ground Con-
nections", page 4.

See Working Detail Sheets for description of connections
at R-Q, and Air Terminal T7.

C. M. &.   28   K.E.B. 1932

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Type T6 Air Terminal

R— Hor Cond

Hor. top cond.

4 down cond.
2 hor. "
Each to be in one
continuous length
(If impracticable see
Par. 17 of General
Instructions)

Q Q Q Q

Guy Guy Guy Guy

All cond. to be No.2 B&S
ga. S.D. copper wire
attached to tower member
with (conductor straps)
not over 3 ft. apart.

Down con-
ductors

R R R

R Hor Cond

Ground conductors
to extend from tower
legs, as specified
under "Ground Con-
nections", page 4.

This conductor to be buried
in a trench (or laid on top of
rock) close to ground line of
structure, as specified under
"Ground Connections", page 4.

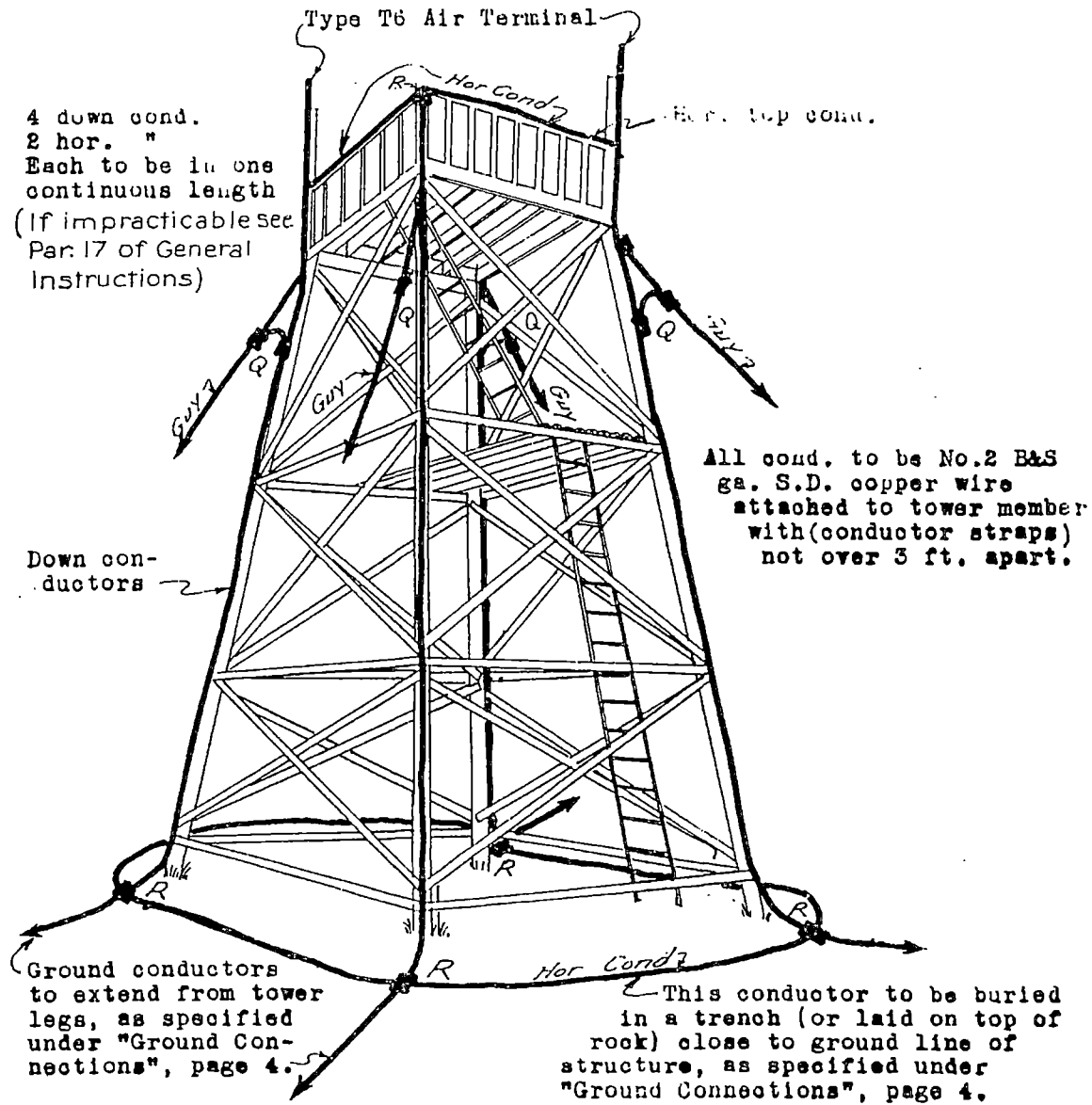See Working Detail Sheets for description of connections
at R, Q, and Air Terminals, T6.
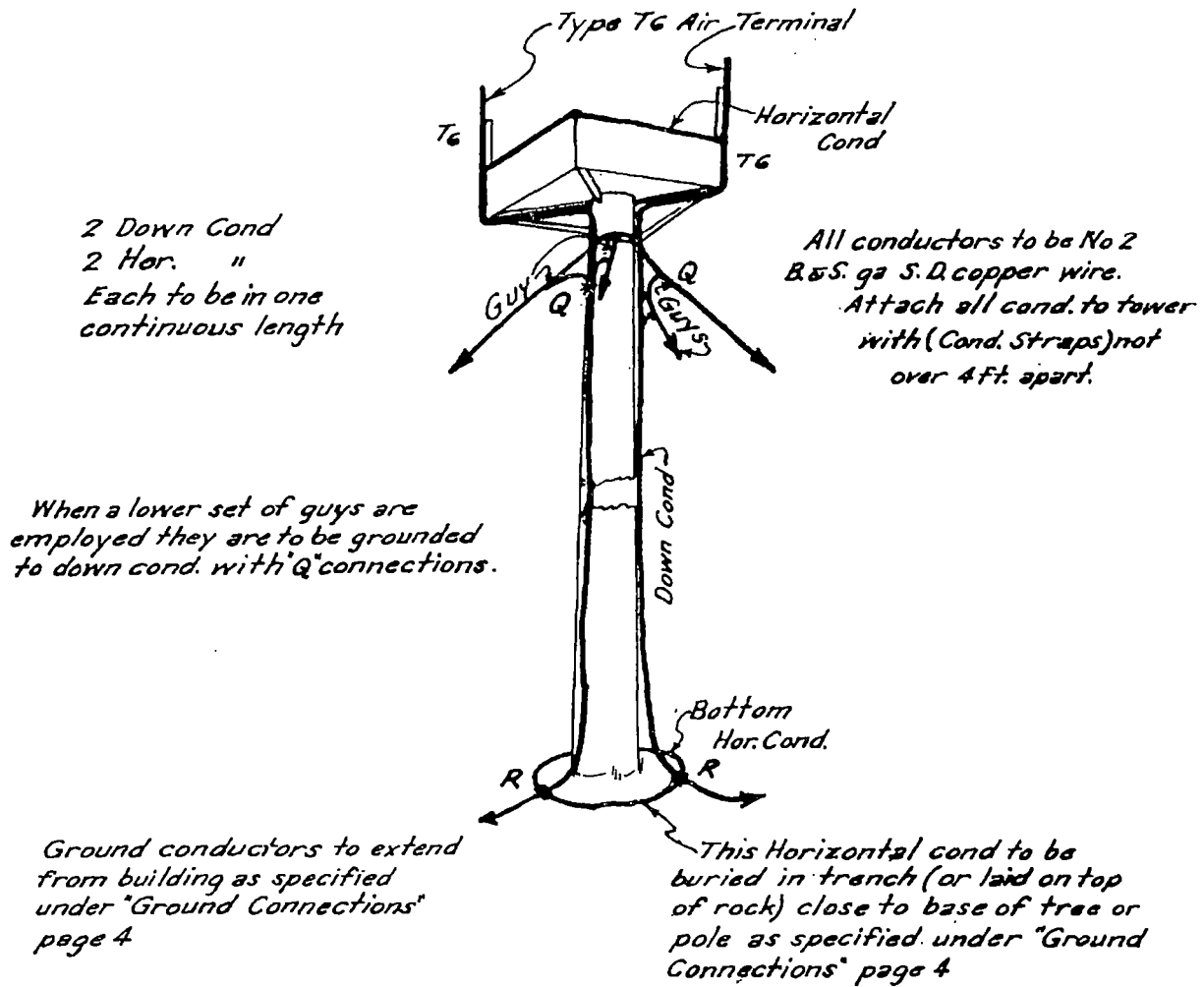
C. M. A.   29   K.E.B. 1932

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PROTECTION AGAINST LIGHTNING
Pole or Tree Towers Without Inclosed Observatories

Type T6 Air Terminal

T6

Horizontal Cond

T6

2 Down Cond
2 Hor.   "
Each to be in one
continuous length

GUY

Q

Q

GUYS

All conductors to be No 2
B.&S. ga S.D. copper wire.
Attach all cond. to tower
with (Cond. Straps) not
over 4 Ft. apart.

Down Cond

When a lower set of guys are
employed they are to be grounded
to down cond. with "Q"connections.

Bottom
Hor. Cond.

R

R

Ground conductors to extend
from building as specified
under "Ground Connections"
page 4

This Horizontal cond to be
buried in trench (or laid on top
of rock) close to base of tree or
pole as specified. under "Ground
Connections" page 4

See Working Detail Sheets for description of connection at Q- R, and at
Air Terminals. T- 6

C.M.A.

Page 33

APPEDIX F: RENTAL CONVERSION PROFITABILITY CHEATSHEET

Profitability of a Rental for One Season			
	Collected Fees		
Rate per Night	After 1 month	3 months (1 Season)	5 months (1 Season)
$35	$1,050	$3,150	$5,250
$40	$1,200	$3,600	$6,000
$45	$1,350	$4,050	$6,750
$50	$1,500	$4,500	$7,500
$55	$1,650	$4,950	$8,250
$60	$1,800	$5,400	$9,000
$65	$1,950	$5,850	$9,750
$70	$2,100	$6,300	$10,500
$75	$2,250	$6,750	$11,250
$80	$2,400	$7,200	$12,000
$85	$2,550	$7,650	$12,750
$90	$2,700	$8,100	$13,500

*1 month is 30 days
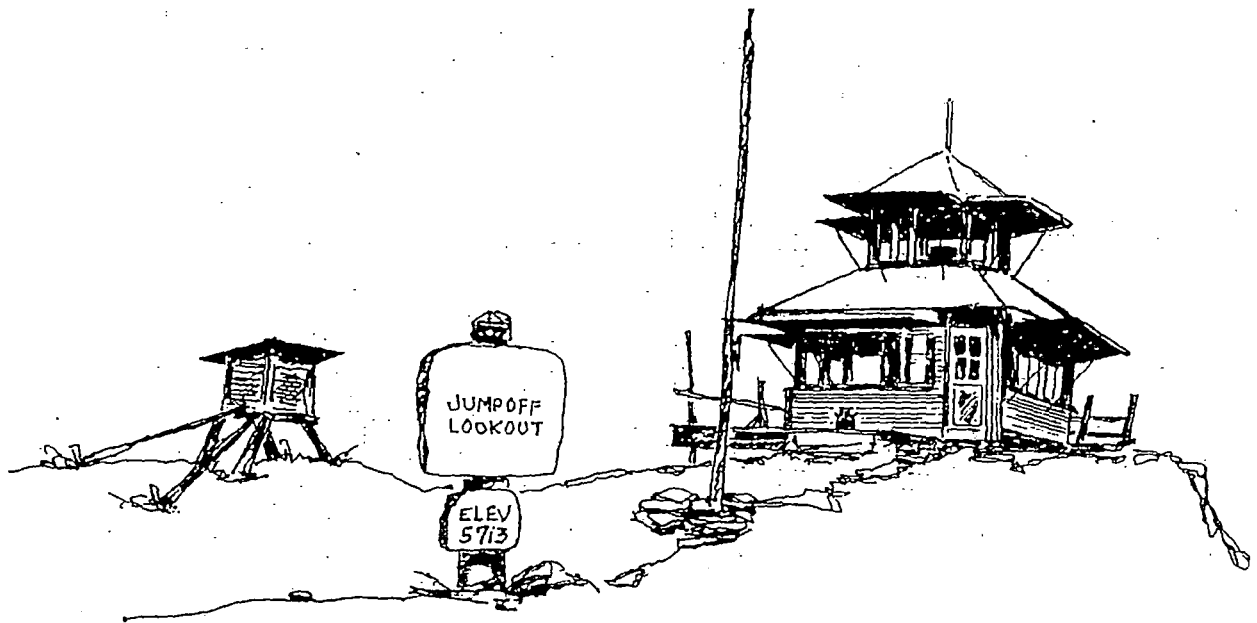
**Based on the assumption that it is being rented everyday of 30 month period

Yearly Profit Potential for Recreation Rentals								
Season	Rates (high and low)	After 1 Season	2 Seasons	3 Seasons	4 Seasons	5 Seasons	10 Seasons	15 Seasons
3 months	$35	$3,150	$6,300	$9,450	$12,600	$15,750	$31,500	$47,250
	$90	$8,100	$16,200	$24,300	$32,400	$40,500	$81,000	$121,500
5 months	$35	$5,250	$10,500	$15,750	$21,000	$26,250	$52,500	$78,750
	$90	$13,500	$27,000	$40,500	$54,000	$67,500	$135,000	$202,500

Potential Profit for Year-Round Recreation Rental								
Season	Rates (high and low)	After 1 Year	2 Years	3 Years	4 Years	5 Years	10 Years	15 Years
1 Year Maximum Capacity*	$35	$12,775	$25,550	$38,325	$51,100	$63,875	$127,750	$191,625
	$90	$32,850	$65,700	$98,550	$131,400	$164,250	$328,500	$492,750
1 Year Half Capacity**	$35	$6,405	$12,810	$19,215	$25,620	$32,025	$64,050	$96,075
	$90	$16,470	$32,940	$49,410	$65,880	$82,350	$164,700	$247,050

*Maximum capacity is based on the assumption of the lookout being rented every day for 365 days

**Half capacity is based on the assumption of the lookout only being rented half of the year (183 days)

JUMPOFF
LOOKOUT

ELEV
5713

Drawing by Earl Brown c.1952

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