## National Register of Historic Places Multiple Property Documentation Form

This form is used for documenting property groups relating to one or several historic contexts. See instructions in National Register Bulletin *How to Complete the Multiple Property Documentation Form* (formerly 16B). Complete each item by entering the requested information.

X\_\_\_\_ New Submission \_\_\_\_\_ Amended Submission

#### A. Name of Multiple Property Listing

L-4 Fire Lookouts in the USFS Northern Region (Region 1), 1932-1967

#### **B.** Associated Historic Contexts

(Name each associated historic context, identifying theme, geographical area, and chronological period for each.)

The Role of the L-4 Lookout House in the Development of the US Forest Service Region 1's Fire Detection System

Fire Lookout Development on the Lolo National Forest

Fire Lookout Development on the Bitterroot National Forest

#### C. Form Prepared by:

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#### **D.** Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this documentation form meets the National Register documentation standards and sets forth requirements for the listing of related properties consistent with the National Register criteria. This submission meets the procedural and professional requirements set forth in 36 CFR 60 and the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation.

Signature of certifying official

**Regional Archaeologist** 

Date

<u>USDA Forest Service</u>, Northern Region (Region 1) State or Federal Agency or Tribal government

(please see Continuation Sheet at end of MPD for Commenting Office signatures for the Idaho and Montana SHPOs)

Title

I hereby certify that this multiple property documentation form has been approved by the National Register as a basis for evaluating related properties for listing in the National Register.

Signature of the Keeper

Date of Action

United States Department of the Interior National Park Service	
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(List major written works and primary location of additional documentation: State Historic Preservation Office, other State agency, Federal agency, local government, university, or other, specifying repository.)

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C.460 et seq.).

**Estimated Burden Statement**: Public reporting burden for this form is estimated to average 250 hours per response including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Chief, Administrative Services Division, National Park Service, PO Box 37127, Washington, DC 20013-7127; and the Office of Management and Budget, Paperwork Reductions Project (1024-0018), Washington, DC 20503.

## **E. Statement of Historic Contexts**

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## The role of the L-4 Lookout House in the development of the US Forest Service Region 1's Fire Detection System

From the passage of the 1891 Forest Reserve Act to the present, resource protection has been one of the primary goals of the US Forest Service.<sup>1</sup> As stated in the first, 1905 edition of the Forest Service Use Book: "Officers of the Forest Service, especially forest rangers, have no duty more important than protecting the reserves from forest fires."<sup>2</sup> Initial efforts to control wild fire concentrated on making forested areas more accessible through trail building and improved telephone communication systems. Forest Rangers conducted patrols of the backcountry mostly on horseback, identifying high elevation lookout points that provided panoramic views of the surrounding country.

As with most Forest Service programs, the early and chronic shortage of funding impacted the fire protection system. After the great fire of 1910 destroyed vast swaths of forest lands in Montana and Idaho, the service began a concerted effort to improve its protection program. Henry S. Graves, dean of the Yale Forestry School, headed the US Forest Service for the decade immediately succeeding the 1910 fire. During his tenure, Graves' greatest challenge was to wring adequate annual appropriations from Congress to keep his agency viable. Five years of experimentation in fire control and preliminary administrative site surveys by the Forest Service had prepared the ground for a concerted program of management planning under the direction of Chief Forester Graves. Working with stringent budgets imposed by a skeptical Congress, Graves devised a system for management planning that was oriented around each national forest.

Graves required forest supervisors to prepare three types of plans. The preliminary forest plan provided an overview of long range objectives. The working forest plan was a more finished rendition of the preliminary plan, and would be the main management planning tool. The annual forest plan provided budget estimates for improvement projects in the forthcoming fiscal year. Each plan had to cover 1) general administration, 2) silviculture management, 3) grazing management, 4) permanent improvements, 5) forest protection, and 6) uses of the forest, such as settlements, special uses, water power, and administrative sites. Under permanent improvements, the plan had to address all classes of improvements relating to protection, administration, and development of the forest. These included trails, roads, bridges, telephone lines, signal systems, permanent and temporary quarters, pasture fences, lookouts, fire lines, fire tool caches, stock driveways, and anything else that was necessary for the use of the range or to improve timber access. The chief forester wanted cost estimates and maps. In addition, he requested a map of the whole forest showing all administrative sites either "selected"

<sup>&</sup>lt;sup>1</sup> The Forest Reserve Act of 1891 authorized the president of the United States to set apart and reserve forested lands for the public interest. These "forest reserves," were to be managed by the General Land Office under the Department of the Interior. In 1897, Congress passed the Organic Administrative Act, which stipulated that the purpose of forest reserves was to protect watersheds and lands that were chiefly valuable for sustained timber production. The 1905 Transfer Act moved management of the forest reserves to the Bureau of Forestry within the Department of Agriculture. Five months after passage of the Transfer Act, the Bureau of Forestry was formally renamed the U.S. Forest Service.

<sup>&</sup>lt;sup>2</sup> United States Department of Agriculture, Forest Service, The Use of the National Forest Reserves: Regulations and Instructions (Washington: Government Printing Office, 1905). The Use Book was a pocket-sized guide containing a summary of Forest Service regulations designed to be used by agency employees and by the public.

or "proposed," together with patrol and lookout stations, tree nurseries, and sites needed for logging operations.<sup>3</sup>

Graves allotted funds to each forest for permanent improvements based upon the forest supervisors' plans and cost estimates. He authorized forest supervisors to transfer funds from one approved project to another, as long as it did not entail the abandonment of a project. Finally, the chief forester apportioned five percent of the total improvement allotment to the regional offices, as a contingent fund for completing projects that were experiencing cost overruns.<sup>4</sup>

The Chief Forester explained the necessity of permanent improvements on the national forests in his annual report for 1911. All construction projects were aimed at facilitating 1) forest protection from fire, 2) administration of the business of the forest, and 3) development of the forest's resources. These three broad categories — protection, administration, and development — served for years as a shorthand method for describing the agency's progress to Congress.<sup>5</sup> It was no coincidence that these categories echoed certain language in the Transfer Act, which charged the secretary of agriculture with the "protection, administration, improvement, and extension" of the national forests. Improvements relating to forest protection received first priority. However, at the end of 1911, Graves reported that the effort to build lookout towers and establish communication systems had hardly begun. The following year, Graves reported that the main emphasis in improvements continued to be the construction of "trails, telephone lines, and lookout stations."<sup>6</sup>

Following guidance from the Washington Office, each district or regional office established procedures for the identification and development of lookout points. A 1915 report for Region 1 notes progress in developing its "fire protective" measures:

Considering the development of the fire protective organization at its present stage with the organization as it was in 1910, we can unqualifiedly say that great progress has been made. Our methods of fire fighting have improved; our lookouts have been developed, improvements have been installed, the men have been trained, and in a great many ways the protective organization now can hardly be compared to the organization of a few years ago.

A great many more improvements are needed, opening up the country with trails and telephone lines, more lookout improvements must be built; more accurate data must be obtained with regard to liability and hazard, and the men must be trained. The men on whom we depend for fire protection largely are the District Rangers.<sup>7</sup>

The scale of the need expressed in the 1915 report is indicated by the relatively small number of lookouts developed region-wide: only 127 lookout points had been established and improved on the forests in Region 1.

<sup>&</sup>lt;sup>3</sup> United States Department of Agriculture, *Forest Service National Forest Manual 1911-1913* (Washington: Government Printing Office).

<sup>&</sup>lt;sup>4</sup> Ibid.

<sup>&</sup>lt;sup>5</sup> USDA Forest Service, *Report of the Forester for 1911* by Henry S. Graves (Washington: Government Printing Office, 1911).

<sup>&</sup>lt;sup>6</sup> USDA Forest Service, *Report of the Forester for 1912* by Henry S. Graves (Washington: Government Printing Office, 1912).

 <sup>&</sup>lt;sup>7</sup> "General Report of the Fire Situation of 1915 District One," pp 1-2. Folder 5100 "Fire Historical 1915-1918 Fire Seasons," Box 51, RG
 95 Records of the Forest Service Region 1, Missoula, Montana Historical Collection 1903-1990 (hereinafter RG 95 Historical Collection) National Archives and Records Administration, Seattle, Washington (hereinafter NARA Seattle).

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These included 85 primary lookouts, five secondary lookouts, 12 lookout cabins, and three towers. Of these, only 62 were equipped with standard map equipment.<sup>8</sup> The fact that only 12 lookout points had cabins indicates that the majority of the lookout men lived in tent camps located adjacent to their observation point.

In May of 1916, Region 1's Acting Regional Forester Rutledge sent a detailed letter to all forest officers, outlining the region's policy with regard to establishing, developing, and maintaining lookout points. It began by stating the general goal of detecting and suppressing wild fires:

The primary object in placing the patrol forces of a Forest is to situate them so that the aggregate loss for normal years will be a minimum during the interval of time between the beginning of fires and the beginning of suppression measures. Where the number of lookout men available is not sufficient to adequately protect all resources, those should be covered most intensively which are most liable to danger and those left with a lesser degree of artificial protection which through the nature of the stand and fire history seem to offer the greatest resistance to fire spread. The type of Forest in District 1 (that) is most nearly self-protective, is the high Alpine Forests where the stands are open and the chances of crown fire are at a minimum.<sup>9</sup>

Rutledge provided definitions for the two types of lookout points: "Primary points" were those to which guards were assigned as an "essential part of the fire plan," i.e., manned during the regular fire season, while secondary lookouts were only manned during emergency fire conditions.<sup>10</sup> He also classified lookout points as either "extensive," or "intensive":

Extensive lookouts are those which are selected to cover in a general way large areas of moderate risk; these are generally located near or on main divides. Intensive lookouts are those which are selected to cover intensively areas of particularly high liability; these are usually low points in valleys, on flats or on plateaus.

Conditions are often such in large valleys having extensive bodies of merchantable timber that a low point situated in the main valley affords more satisfactory protection than a higher point farther away from the valley. If a large number of settlers are scattered through the valley, or from some other source, a large number of fires are known to occur annually, intensive patrol from a point in or very near the timber is to be preferred to the extensive patrol secured from a higher point at a considerable distance from the principal point of origin of fires.<sup>11</sup>

Rutledge's letter outlined the process by which forests could apply for 1918 fiscal year funding to improve lookout points and what to build if funding became available. Applications for appropriations had to be accompanied by a report and a variety of maps--all of which required field work. The first of these, a 'seen area' map, quantified the area that could be viewed from each lookout point. Detailed methodologies to prepare these maps had been developed two years earlier. The method used for areas with existing topographic maps was as follows:

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<sup>&</sup>lt;sup>8</sup> "Lookouts in District 1" 1915. Folder 5100 Fire Historical 1915-1918 Fire Seasons, Box 51, RG 95 Historical Collection, NARA Seattle.

<sup>&</sup>lt;sup>9</sup> Acting District Forester Rutledge to Forest Officers, O –Fire Memo, May 9, 1916. Folder: Lookouts Historical 1 of 2, Box 45, RG 95 Historical Collection, NARA Seattle.

<sup>&</sup>lt;sup>10</sup> Ibid.

<sup>&</sup>lt;sup>11</sup> Ibid.

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Make profiles on 7 ½ degree sectors entirely around the lookout point by platting the elevations shown on the contours on profile paper. Through the series of points thus established a profile line can be drawn, representing the earth's surface along that line. By projecting lines from the lookout point over the features, the amount of surface visible from the lookout can be determined. The visible parts of each line can be platted on the map and the seen areas between each set of lines colored in.<sup>12</sup>

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Seen area mapping for areas without topographic map coverage was much more complicated. Rutledge referred to the results of the mapping as "Koch profiles," indicating that Elers Koch may have been responsible for developing the methodology.

Besides the seen area mapping, field personnel also were required to prepare a map showing the "type, area and condition of timber in the neighborhood of the lookout point," as well as one that illustrated the history of fires in the area, showing the location, number and cause of fires by year since 1914. All three maps were to accompany a report that included the exact location and type of proposed improvements, their cost of construction and annual cost of maintenance, the cost of provisioning the lookouts, and the distance of the lookout point from supervision.

If a forest was lucky enough to secure funding for lookout improvements, the next step was to plan the most efficient way to improve them. The first essential improvement was the construction of a "passable trail" between the ranger district headquarters and the lookout point.<sup>13</sup> For lookout points with a "sharp top" that facilitated direct vision of a large area, the lookout man's living quarters and the observatory were to be combined in one building. Rutledge identified the standard "lookout house" in Region 1 as a 12' by 12' frame building with a "band of glass entirely around the building at a convenient height for observation."<sup>14</sup> He warned the forests to adhere to the new regional standard rather than the types of lookout cabins that had been built previously. At lookouts where no sharp peak was available, it would be necessary to construct higher buildings or build towers to serve as the observatory. The procedure to determine the optimal height of the observation tower was as follows:

Survey lines across the highest part of the peak and over the two parts of the mountain which it is necessary to clear to the approximate point to which vision is necessary. Then construct a profile and by intersection lines determine the height to which it will be necessary to build to provide satisfactory vision.<sup>15</sup>

If the optimal height of the tower was 25 feet or less, the regional office recommended using the standard lookout house on either a pole or dimensional lumber tower. If the required height was between 25 and 60 feet, they recommended the use of a tower without a lookout house. And, in instances where the required height exceeded 60 feet, the regional office proposed the following:

... unless the liability is very great two points a short tistance (sic) apart should be selected and a lower tower erected on each. For the distance apart which the towers may be without dangerously decreasing the efficiency of the lookout, haze figures for the peak in question should be studied also. The extra

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<sup>&</sup>lt;sup>12</sup> Ibid. pp. 3-4.

<sup>&</sup>lt;sup>13</sup> Ibid, p. 9.

<sup>&</sup>lt;sup>14</sup> Ibid, p. 15.

<sup>&</sup>lt;sup>15</sup> Ibid. pp. 6-7.

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expense involved in stationing a man at each tower during extreme emergency fire conditions will be more than offset by the more intensive protection secured as the time when it is most needed.<sup>16</sup>

At lookout points where the quarters and the observatory could not be combined, the quarters were to be located within 100 yards of the observation tower. The previous practice of building cabins at the nearest water was discouraged as it decreased the "efficiency of the lookout man."<sup>17</sup>

Using the directives handed down by the regional office, each forest supervisor provided guidance in proper fire detection procedure to district rangers and the lookout men that they supervised. A 1919 memo for the Kootenai National Forest described the lookout men as the "eye of the protective organization." Topics covered in the memo included: how to set a base board on which to place and orient forest maps, a list of equipment to be provided to the lookout men, how to determine the direction and distance of a fire using fixed landmarks, and rules for camp sanitation. Under the heading "Lookout Headquarters Routine", the memo stated "The lookout point will be occupied as nearly continuously as the location of the lookout camp and living conditions will permit and constant vigilance must be maintained. … Trips off the lookout point for water or to visit secondary lookout points will be made during such periods of the day as the District Ranger may direct." The lookout men were instructed to keep their lookout buildings and campsites neat and sanitary, and to avoid "needless destruction or injury of living trees," as "future lookout men will also appreciate shade and pleasant surroundings."<sup>18</sup>

In spite of the completion of a regional plan for lookout point development, construction of lookout improvements occurred relatively slowly. Prior to 1920 only nine lookout observatories had been built in the region, with five more added that year. The next decade saw a rapid uptick in lookout construction with 61 structures added in the five-year period between 1921 and 1925, and another 130 added between 1926 and 1930. Still the number of improved lookout points represents only a quarter of the roughly 800 occupied lookout points integrated into the region's fire detection system by 1930.<sup>19</sup>

#### Clyde P. Fickes and the development of the L-4 Lookout

The influence of Clyde Fickes on lookout point development began near the end of the 1930s, when he worked on the Pend Oreille National Forest in Northern Idaho. In 1927, the Port Hill District had been allotted money to build a lookout house on Smith Peak. According to Fickes, the forest did not have construction plans for the lookout. Fickes, who grew up in his father's carpentry shop, drew up plans for a 12' by 12' frame building with a 6' by 6' "cupalo." He ordered lumber and hardware, and planned to cut it into dimensions suitable packing on mules to Smith Peak during the following field season. In early 1929, Fickes attended an annual meeting of the "Allotment Conference for the Idaho forests in Spokane."

<sup>&</sup>lt;sup>16</sup> Ibid, pp. 7.

<sup>&</sup>lt;sup>17</sup> Ibid, p. 15.

<sup>&</sup>lt;sup>18</sup> Acting Forest Supervisor "Instructions to District Rangers and Lookout Men," June 1, 1919. Folder: F Statistics Bitterroot General Permanent Folder, Box 21, Series BIT05 Forest Supervisor's Alpha Files, circa 1900-1960 (hereinafter BIT05); RG 95 Records of the Forest Service: Bitterroot National Forest (Hereinafter RG 95 BNF), NARA Seattle.

<sup>&</sup>lt;sup>19</sup> Ralph L. Hand, Assistant Chief Division of Fire Control "History of Region 1 Lookout System," August 23, 1954. Folder: Historical: Lookouts, Box 46, RG 95 Historical Collection, NARA Seattle. Note that Hand's report was compiled from the records of Engineering and Fire Control.

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Fire control was the principal topic of discussion, and the great need for more and better fire discovery facilities. At that time there were only half a dozen or so satisfactory, improved fire lookouts on the Idaho Forests of Region 1. At that time the Region did not have any kind of structural plans and specifications for a lookout structure. ... The few lookout structures that had been put up were built by someone handy with tools and knowing something about carpentry work and where the building material could be hauled within a short distance of the building site. Our problem was to move materials on pack mules. Region 6, at Portland, Oregon had a plan for a 12' by 12' building with an observation cupalo (sic) on top which was developed for that Region by some architectural engineer. However, the specifications were such that the cost of the material for the building was so high that Region 1 did not feel we could afford a building that cost from \$1,200 to \$2,000 to construct. It was relayed to the Allotment Conference group that Fickes had prepared plans for a ready-cut lookout to be built on Smith Peak on the Pend Oreille the next year. Cost of material was less than \$100. During the discussion I made some remarks about the simplicity of the problem and its solution, and that anyone with a little know-how and savvy should be able to solve it.<sup>20</sup>

In February or March of 1928, Fickes proceeded with cutting and packaging the materials for the Smith Peak Lookout. Meanwhile, as a result of his comments at the Allotment Conference, the regional office requested that he take a temporary detail to Missoula for the purpose of designing a standard lookout house for Region 1. The first plan that Fickes developed must have been similar to the Region 6 lookout, as he described it as a 12' by 12' plan topped with a 6' by 6 'cupalo.' Joe Halm, a draftsman in the regional office prepared the tracings and each 'readicut' piece was numbered and shown on the construction plans, the latter accompanied by detailed instructions for erecting the building. Perhaps in contrast to the Region 6 plan, Fickes' design used standard millwork (window sash and doors) and hardware that could be purchased at any lumberyard. After the plans were complete, the regional office decided to build a sample:

At a lumberyard in Missoula I made arrangements to purchase the materials, and for a place to cut the material. I hired two carpenters to do the cutting, and I did some of the work myself. The bundled material was hauled down to the Lolo Forest and packed up to the top of Mt. Baldy, a lookout point on the Superior Ranger District. Then Joe Halm and I went up to the Lookout and put the building together, using only a hammer, screwdriver, and carpenter's level. The total cost was less than \$400.

Joe was an excellent photographer and took many pictures of all stages of the construction for the official record and to convince skeptical Supervisors and Rangers that it could be done. Orders aplenty for this new type of lookout structure came in, and the next winter the Spokane Warehouse set up a plan to readicut and assemble all the material for a number of the new lookouts. A crew of District Rangers who were experienced packers (mules that is) was assembled, and the complete material for each lookout house was assembled into mule pack loads to be shipped as a unit. Upon arrival at the Forest shipping point or Ranger Station, all that was necessary was to load the bundles on the mules, pack it up to the peak, and send up a couple of handymen who could read, equip them with a hammer, screwdriver, and level. We had some complaints, of course, about shortage of pieces or incorrect lengths, but in every case, it was found that the erectors had not followed the numbered instructions for assembly.

<sup>&</sup>lt;sup>20</sup> Clyde P. Fickes, Forest Ranger Emeritus, "Recollections," 1972. Folder: 1680 Historical Lewis & Clark NF Moose Creek Campground, etc., Box 76, RG 95 Historical Collection, NARA Seattle.

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Eventually, we had crews around the Region bragging about how fast they could assemble a 12' by 12' lookout with cupalo (sic) ready for occupancy.<sup>21</sup>

After the success of the first 'readicut' lookout, the regional office asked Fickes to move to Missoula, offering him a new position as an improvements inspector, under the Office of Operations in the Engineering Division. In his new job, he supervised the design and construction of all improvements in the region including: "... trails, telephone lines, buildings, campground layouts and later, radio communications."<sup>22</sup>

Fickes moved his family from Sand Point, Idaho to Missoula in May of 1929. The following August, a major wild fire burned a large swath of the Clearwater National Forest along the Lochsa River corridor in Idaho.<sup>23</sup> At the conclusion of the fire season the regional office considered ways to improve fire discovery while "keeping the lookouts comfortable." As part of the discussion, then-Regional Forester, Evan Kelley, expressed dissatisfaction with the cupola-style lookout building, because the lookout men "wasted too much time climbing up and down." He suggested building a 14 ft. by 14 ft. building "where the men would be seeing all the time." With Kelly's suggestions, Fickes developed the first L-4 prototype which consisted of a 14 ft. by 14 ft. wood frame "cab," with a gable roof.<sup>24</sup> This lookout house was large enough to accommodate fire-finding equipment as well as quarters for the lookout man. Not long after developing the first version of the L-4, Fickes modified the plans, replacing the gable roof with a pyramidal hip roof.<sup>25</sup> All four walls had banks of nine-light, sliding wood window sash, which allowed the full range of view. Drop siding covered the exterior walls below the windows and the roofs were covered with sawn cedar shingles. Top-hinged exterior shutters could be raised and lowered when the lookout was manned.

Regional Forester, Evan Kelley, approved the drawings for the pyramidal roof L-4 lookout house in 1931.<sup>26</sup> It was one of three lookout shelters included in the *Region One Handbook Construction and Maintenance of Forest Improvements*, compiled by Clyde Fickes. The date of the handbook's first edition is unknown; however, the volume was revised and reissued in December of 1935. Although the L-4 house could be built directly on the ground it was more typically built on a tower. The handbook included separate plans for lookout towers of different heights in increments of 10 feet. The plan for a 10-foot-high tower was labeled "T-10," that for a 20-foot-high tower T-20, and so on through T-50. Each tower plan was labeled "Lookout Tower with Living Quarters for use with Plan L-4." All of these early towers (some built with locally available logs, some with milled lumber) had slanted or battered tower legs and were almost always made with untreated materials. Specifications for the catwalk that surrounded the lookout house were included with the tower plans.

The 1935 handbook also included plans for two other types of observation shelters. The L-6 shelter was an 8<sup>3</sup>/<sub>4</sub> ft.-square, wood-frame cab identified as a "Patrol Shelter or Tower Cupalo (sic)." This smaller building, also

<sup>&</sup>lt;sup>21</sup> Ibid, 83-84.

<sup>&</sup>lt;sup>22</sup> Ibid, 106. Note that Forest Service employees commonly refer to the L-4 lookout houses as a "cab."

<sup>&</sup>lt;sup>23</sup> Elers Koch, who worked for the US Forest Service from 1903 through 1940, described the 1929 Lochsa Fire as the most memorable and hard-fought fire of his career. The fire started on August 1, and was finally brought under control on September 8. Elers Koch *Forty Years a Forester 1903 - 1943* (Missoula: Mountain Press Publishing Company, 1998) 108-120.

<sup>&</sup>lt;sup>24</sup> The "L" in the L-4 plan probably refers to the building's function, i.e., L for lookout.

<sup>&</sup>lt;sup>25</sup> Although the reasons for this modification have not been identified, it may have to do with the fact that rafters for pyramidal roofs require shorter rafters, thus less material and of sizes that were easily 'cargoed' on mules.

<sup>&</sup>lt;sup>26</sup> Lookout House Plan L-4. Clyde Fickes *Region One Handbook Construction and Maintenance of Forest Improvement* (USDA Forest Service, Region One, Missoula, Montana 1935 revised edition).

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designed by Fickes, was approved by the regional forester in 1932.<sup>27</sup> The third shelter was a 7 ft.-square metal cab for use with metal towers; also approved in 1932, this does not appear to have been designed by Fickes. Finally, the handbook included plans for a simple patrol tower topped by a platform. Designed by Fickes, this structure is identified in the 1935 handbook as "Patrol Tower T-3." It could be built in various heights, with the observation platform reached by a ladder. Howard Flint, in charge of the fire program in the region, approved the drawing in 1933.<sup>28</sup>

Besides plans and elevations, Fickes' handbook provided guidance on virtually every aspect of lookout construction, including: how to mix, form, and pour concrete for tower footings; how to install a lookout telephone; and a list of tools required for erecting both wood and steel towers. Regarding towers Fickes wrote: "It is a pretty well settled fact that the simplest and cheapest way to build towers 30 ft. or over in height is to assemble them on the ground and then raise the whole tower as a completed structure, putting in the stairways afterward and building the houses after the stairs are in."<sup>29</sup> Furthermore, towers from 10 ft. to 30 ft. high would be wood braced, while those between 40 ft. and 50 ft. high would be cable braced. The handbook directed that any tower over 50 ft. high must be made of steel. Figures 1 through 5 show some of the lookout structures included in Fickes' 1935 manual.

The timing of publication of the Region 1 handbook may have been a direct result of the establishment of the Civilian Conservation Corps (CCC). Created in 1933 as one of President Franklin D. Roosevelt's New Deal programs, the CCC provided manpower to national forests throughout the system. The US Forest Service handled the lion's share of CCC projects, employing more than 50 percent of all enrollees. CCC enrollment peaked in September 1935 at 500,000. In that summer, there were 82 camps in Idaho and 32 in Montana.<sup>30</sup> The Region 1 office undertook a myriad of projects with the CCC. Road and trail construction received first priority. The primary objective was to open more country to truck transport and thereby improve the agency's ability to fight forest fires. Within two years the CCC constructed 1,850 miles of forest roads, 320 miles of trails, and 350 bridges on the national forests.<sup>31</sup>

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<sup>&</sup>lt;sup>27</sup> Patrol Shelter or Tower Cupalo Plan L-6. Fickes *Region One Handbook* 1935.

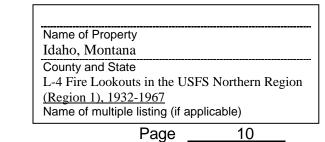
<sup>&</sup>lt;sup>28</sup> Patrol Tower T-3. Fickes *Region One Handbook* 1935.

<sup>&</sup>lt;sup>29</sup> Fickes *Region One Handbook* 1935: L-1.

<sup>&</sup>lt;sup>30</sup> John A. Salmond, *The Civilian Conservation Corps, 1933-1942: A New Deal Case Study* (Durham: Duke University Press, 1967).

<sup>&</sup>lt;sup>31</sup> USDA Forest Service, *Report of the Forester for 1936* by F. A. Silcox (Washington: Government Printing Office, 1936).

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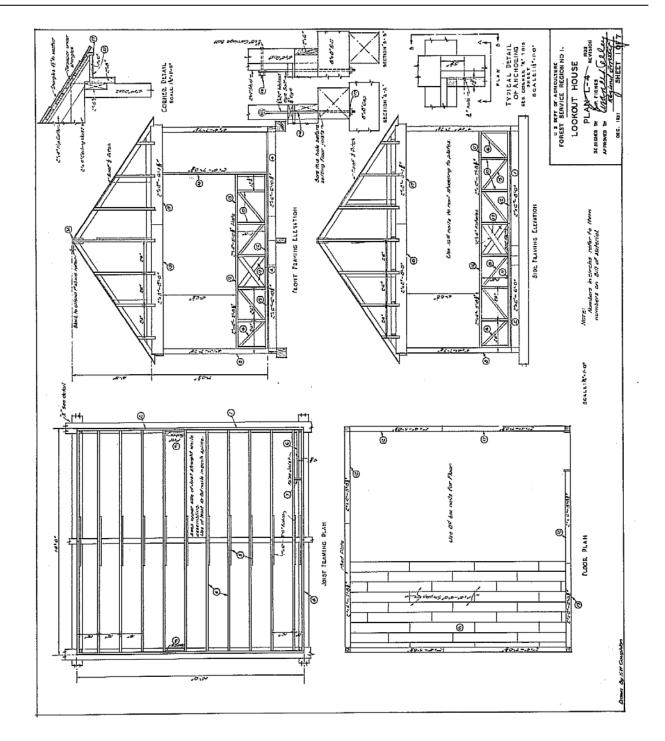
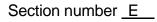
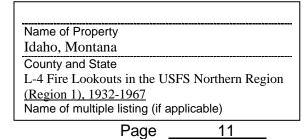


Figure 1. Plan L-4 Lookout House (Fickes Region One Handbook 1935).

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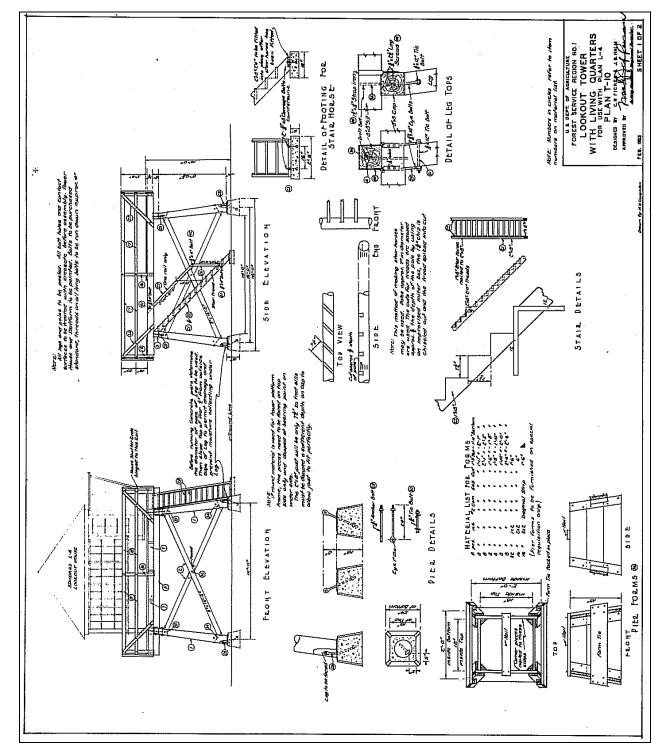
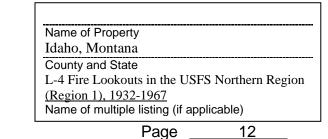


Figure 2. Plan T-10: Lookout Tower with Quarters (Fickes Region One Handbook 1935).

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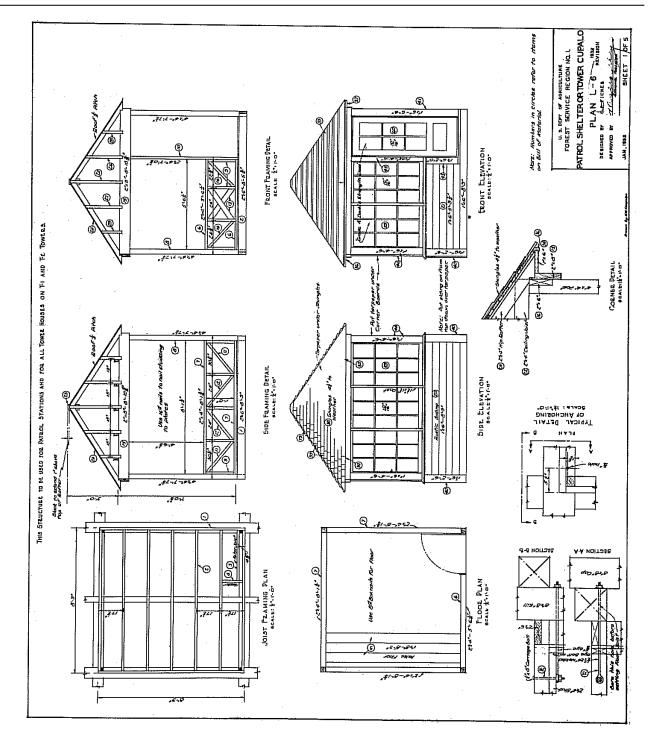
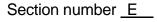


Figure 3. Plan L-6 Patrol Shelter or Tower Cupalo (sic) (Fickes Region One Handbook 1935).

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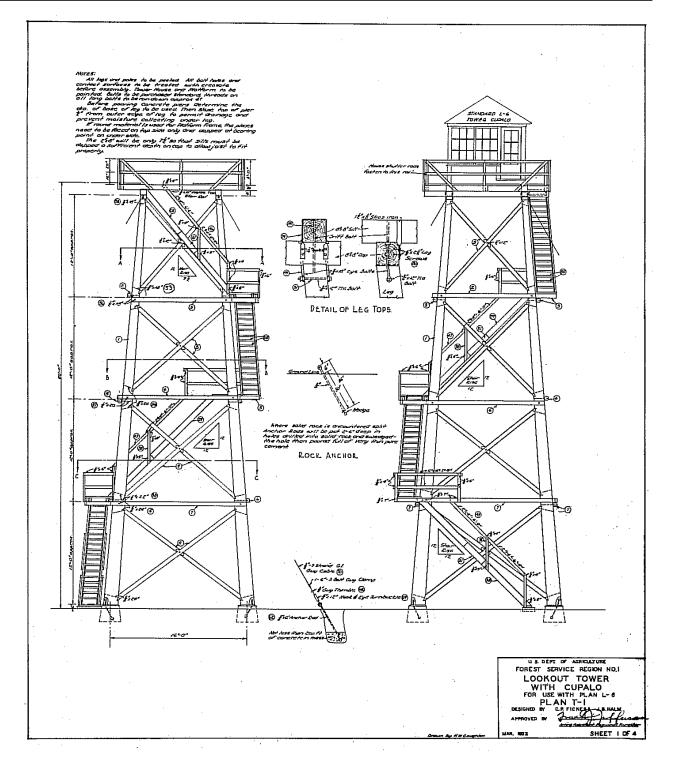


Figure 4. Plan T-1: Lookout Tower with Cupalo (sic) for use with Plan L-6 (Fickes *Region One Handbook* 1935).

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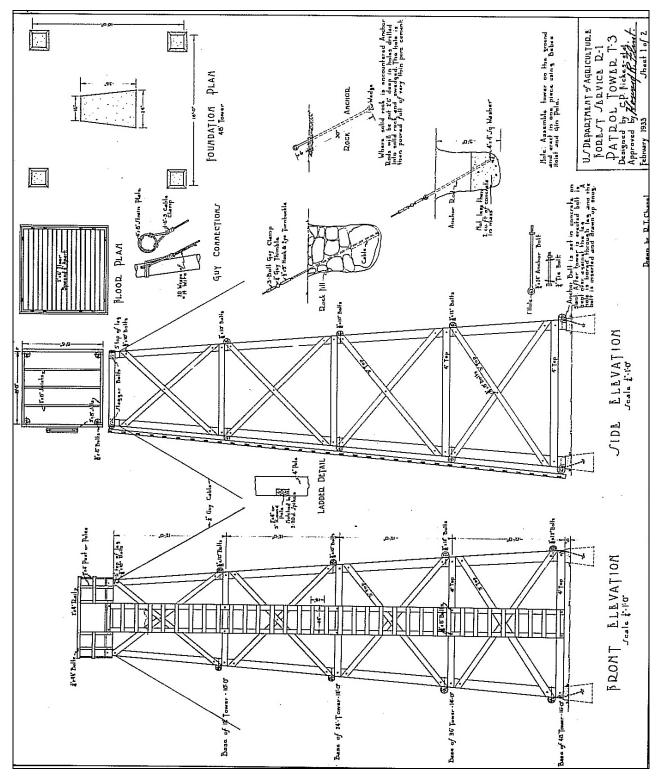


Figure 5. Patrol Tower T-3 (Fickes Region One Handbook 1935).

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Such a large reserve of unskilled labor created a need for hundreds more supervisory personnel than the Forest Service could put into the field. As a result, the agency received authorization under the Emergency Relief Act to recruit unemployed or underemployed men whose salaries could not exceed 10 percent of the existing payroll. The regional office allotted a share of these 10 percent funds to the division of engineering, and Clyde Fickes was placed in charge of recruiting a staff of architects, landscape architects, and mechanical draftsmen to supervise the Forest Service's improvement program. The abundance of new projects and supervisory personnel, in turn, created the need for a guide that could be used by field personnel. As stated by Fickes in the introduction to the handbook:

This handbook is intended primarily for the use of the men in the field who actually do or superintend the doing of the construction and maintenance work on improvements. ... This handbook is intended to be a working manual describing the better mechanical ways of doing things and including information of value in determining the kind of material most satisfactory for any particular job.<sup>32</sup>

The degree to which CCC crews were enlisted to erect lookout structures is unclear. A 1940 press release for the *Daily Missoulian* stated that CCC enrollees had built 250 lookouts in the years since the establishment of the corps.<sup>33</sup> What is clear is that the increase in manpower and construction dollars made available through the CCC and other New Deal-era programs resulted in a huge jump in lookout improvements. Writing in 1954, Ralph Hand, Assistant Chief Division of Fire Control noted that between 1930 and 1935, 531 new lookout structures were added to Region 1 forests, more than twice the number built in all previous years. This included 191 towers and observatories in 1934 alone, the year following the creation of the CCC.<sup>34</sup>

Hand also described the influence of Lloyd Hornby, who directed "presuppression planning" during the period of rapid lookout point development. He described Hornby's work as a "complete overhaul of the lookout system, resulting in the abandonment of many points ...." In some instances, construction got ahead of planning, resulting in some new structures never being occupied. In other cases, inferior lookout points were retained to avoid abandoning a new structure. "Eventually these problems were all ironed out, but not without a considerable loss in efficiency."<sup>35</sup>

The reorganization of the presuppression program was mostly complete by about 1938 when the availability of construction funding slowed. Using an inventory produced by Clyde Fickes in 1938, supplemented with records from fire control files, Hand produced a list of lookouts in the region that had been built by the time that construction funding was curtailed (Table 1). Region wide, 838 lookout points had been improved with various types of structures. Slightly more than half (433) were L-4 lookout houses with pyramidal hip roofs.<sup>36</sup>

NPS Form 10-900-a

<sup>&</sup>lt;sup>32</sup> Fickes *Region One Handbook* 1935: Introduction.

<sup>&</sup>lt;sup>33</sup> "A Backward Glance and a Forward Look." Press release prepared for the *Daily Missoulian* 1940. Folder: 1680 History Miscellaneous Items W. Montana, 1918. 1937, 1949, 1944, Box 13, RG 95 Historical Collection, NARA Seattle.

<sup>&</sup>lt;sup>34</sup> Ralph L. Hand, Assistant Chief, Division of Fire Control "History of Region 1 Lookout System," August 23, 1954. Folder: Historical: Lookouts, Box 46, RG 95 Historical Collection, NARA Seattle.

<sup>&</sup>lt;sup>35</sup> Ibid.

<sup>&</sup>lt;sup>36</sup> Ibid.

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#### Table 1. Region 1 Lookout Improvements in 1938

Туре	Description	Number
Miscellaneous	(no standard plan)	26
Old R-6	12 x 12 frame w/ cupola	51
Old L-1	14 x 14 log designed by D. L. Beatty	5
Old L-2	12 x 14 frame w. cupola (1928 model)	10
L-3	12 x 14 log with cupola (1928)	39
First L-4	14 x 14 frame with gable roof (1930)	35
Second L-4	14 x 14 with larger windows than first L-4	56
L-5	14 x 14 log with gable roof (1930)	16
L-4	14 x 14 frame with hip roof (1932)	433
Columbia Falls redi-cut L-4	14 x 14 frame with hip roof	6
L-6	8 x 8 frame with hip roof (1932)	89
Steel towers	7 x 7 Steel cabs	21
Towers without cabs		51

#### Innovations in Fire Detection and Suppression 1939-1954

In 1939, the Forest Service conducted the first serious experiments in parachuting men into dense forests to fight fire. Based on this initial success, in 1940 Seeley Lake District on the Lolo National forest hosted one of two smokejumper training camps in the national forest system. Seven new "smokejumpers" were hired and trained at Seeley Lake before being moved to Moose Creek Ranger Station, deep in the Idaho backcountry.<sup>37</sup> The following year the forest service decided to base the smokejumper program in Region 1, specifically in Missoula, the home of the Johnson Flying Service, which was contracted to deliver both supplies and men to remote backcountry areas. Three, eight-man squads were employed during the 1941 fire season, one at Nine Mile Ranger Station on the Lolo National Forest, one at Moose Creek Ranger Station on the Nez Perce National Forest, and one at Big Prairie Ranger Station on the Flathead National Forest.

<sup>&</sup>lt;sup>37</sup> At the end of the 1940 season, the smokejumper Project Leader, Merle Lundrigan, wrote a report outlining the results of the season, in which he emphasized the importance of having the lookout names painted on the roofs or shutters, so that they could be viewed from the air. Lundrigan, "Report on Aerial Fire Control Activities," December 10, 1940. Folder: Report on Aerial Fire Control Activities, December 10, 1940, Box 45, RG 95 Historical Collection, NARA Seattle.

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Just as the smokejumper program was getting started, the United States entered World War II. Most of the men with previous parachute and firefighting experience enlisted in the military and for the next four years, the aerial suppression program was sustained by members of the Civilian Public Service (CPS) Program, many of whom were conscientious objectors.

During the final year of World War II the US Forest Service established the first experimental "aerial forest fire control area" including parts of the Flathead, Lewis & Clark, Lolo, and Helena National Forests. Referred to as the "Continental Unit," it was the first time that fire detection from airplanes and fire suppression by smokejumpers replaced fixed detection points (lookouts) and ground-based fire crews. This experimental program, apparently managed by the regional office, marked a major change in fire control procedures. The experiment lasted three years, after which the responsibility for fire control was returned to the various forests.<sup>38</sup> All four forests continued using air detection, integrating it into their fire management plants.

In 1947, the Coeur d'Alene National Forest initiated its own air-ground fire detection program. In contrast to the four forests included in the experimental Continental Unit, which contained vast swaths of road-less areas, the Coeur d'Alene had good road access to virtually all its lands. By moving to an air-ground detection system, the forest was able to reduce the number of fixed detection points (lookouts) from 33 to 11.<sup>39</sup> The proven success of the new aerial detection and suppression system in both road-less and road-accessible forests convinced more Region 1 forests to adopt the new system. Between 1945 and 1950 the number of fixed lookout positions region wide dropped from a high of 844 to 501 as additional forests adopted aerial detection. By 1954, 12 of the 16 forests then included in Region 1 had adopted an air-ground fire control system in whole or in part. Only the Beaverhead, Custer, Deerlodge, and Gallatin forests continued to rely entirely on fixed detection points. Consequently, the number of lookout points declined again from 501 to 272.<sup>40</sup>

#### Lookout Reconstruction and Replacement, 1953 through the 1960s

NPS Form 10-900-a

In the spring of 1953, the regional office began collecting data to develop a five-year plan for replacing deteriorating lookout structures. The region purchased 49 lookout kits during the 1953 and 1954 fiscal years and by August of 1954, construction funding had been secured for all but four or five. For the forests that had completed the transition to an air-ground detection system, the task of prioritizing lookout replacement was made easier by the fact that they had already identified the lookout points that were critical to their fire detection plan. Those forests that had not converted to the air detection system had a more challenging task. As stated by Hand:

The most difficult part of our future planning is in making the proper decisions in regard to those units (forests) not yet on air-detection basis. About the best that we can do is stick with the high-priority points and turn thumbs down on any of those that are questionable.<sup>41</sup>

 <sup>&</sup>lt;sup>38</sup> Letter to Pete Hanson, October 3, 1956. Folder: 1380 Reports Historical Reports to the Chief, FY 72, 73, 74, 75, Box 9, RG95
 Historical Collection, NARA Seattle. This letter was singed by the directors of Region 1 and by the heads of state and private forestry.
 <sup>39</sup> Ibid.

<sup>&</sup>lt;sup>40</sup> Hand "History of Region 1 Lookout System," August 23, 1954. Folder: Historical: Lookouts, Box 46, RG 95 Historical Collection, NARA Seattle.

<sup>&</sup>lt;sup>41</sup> Ibid. Note that the number of developed lookout points varies depending on the source of the information. All documents agree however, that the number of developed lookouts region-wide was in the range of 830 to 840.

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The results of the initial analysis found that 35 lookouts required immediate replacement, while 100 needed to be replaced within the next five years. By 1955 some of the new lookouts structures were under construction. A few forests were "… planning to use their own savings to purchase and erect new structures." Given the backlog of work, the region outlined rules for the forests to follow when replacing lookout structures:

1. No lookout will be given a priority in the replacement program until after a complete inspection has been made by a qualified engineer or other person familiar with construction principles.

2. No lookout will be included in the replacement program on western forests until after at least a preliminary air-ground detection plan has been developed for the unit concerned or the present detection plan reviewed by this office. This is needed to help set priorities and avoid making mistakes.

3. Safety will be given primary consideration in setting up priorities on the replacement list.

4. Replacement will be deferred if it is determined feasible to make major repairs and if such repairs will lengthen the safe life of the structure to an appreciable degree.

5. Last minute shift to another lookout, after a structure has been delivered, will be allowed only in exceptional cases.<sup>42</sup>

The majority of the replacement units provided by the regional office appear to have been modified versions of the 1931 pyramidal roof L-4. In general dimensions, this later version was similar to the 1931 plan, with a 14' by 14' footprint and a pyramidal hip roof. A major change was an "improved" system of fixing the shutters in the open position. In Fickes' original design the top-hinged shutters were simply propped open with 2" x 2" struts secured to the catwalk railing or the base of the lookout house if the house was built on the ground (Figure 6).

<sup>&</sup>lt;sup>42</sup> P. D. Hanson, Regional Forester "Memorandum for Forest Supervisors E (F) Improvements Lookout Replacement Program," November 18, 1954. Folder: E Improvements Bitterroot Lookout Replacement; Box 6; BIT05; RG 95 BNF, NARA Seattle.

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Figure 6. Double Arrow Lookout on the Lolo National Forest, an original 1931-plan with struts holding the shutters open (Sydney Bacon, 2016).

In the modified plan, raised shutters were bolted to an "outrigger." The outrigger was formed by extending the interior ceiling rafters beyond the four exterior walls of the building. Two 2" x 4" plates were attached perpendicularly to the extended rafters. Threaded bolts evenly spaced along each plate extended down from the plates (Figure 7). When the shutters were raised, the bolts fit through holes in the shutter and were held in place with wing nuts. The revised plan also included four-light window sash, with one in the center of each wall opening casement fashion, and fir floors rather than maple floors specified in the 1931 version. The plans for this revised version of the L-4 originated from Region 6 (Washington and Oregon), and approved by the regional forester in 1936 and amended in 1944 and 1948.<sup>43</sup> By the early 1950s, changes had also been made to tower design. New specifications called for straight tower legs and the use of treated timber.

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<sup>&</sup>lt;sup>43</sup> A. Richard Guth and Stan B. Cohen, *A Pictorial History of the U.S. Forest Service 1891-1945 Northern Region*, p. 108-109 (Missoula: Pictorial Histories Publishing Company, Inc. 1991). It is interesting that the Washington Office of the US Forest Service published a set of standard lookout plans in 1938, which included the 1936 iteration of the L-4 lookout. Neither Region 6 nor the Washington Office credited Clyde Fickes for his efforts in producing the first L-4 prototype. USDA Forest Service *"Standard Lookout Structure Plans* (Washington D.C.: USDA Forest Service Division of Engineering).

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Figure 7. Mineral Peak Lookout on the Lolo National Forest: a modified L-4 plan with outriggers to hold shutters open (CRCS 2016).

The effort to replace deteriorating lookouts continued throughout the 1960s. A general report published by the regional office in 1964 reiterated some of the problems, noting that many of the cabins and towers were over 30 years old and deterioration was "progressing more rapidly than replacement." The same report also noted that the overall number of manned lookout points had declined slightly to 246, noting that the integration of air patrols with fixed point detection had facilitated this reduction.

Lookouts providing a view of high-value lands, lands of high fire hazard and areas of frequent fire occurrence are manned during fire season. Air patrol is used to supplement detection provided by these fixed lookouts. The frequency of air patrols is determined by the local fire danger. This combined air-ground detection program is more flexible and less expensive than the old ground detection approach.<sup>44</sup>

Although lack of funding continued to affect the lookout replacement program, new structures were added, usually at previously existing lookout points. After about 1960, most of the new lookout houses were the R-6 Flattop. By this time, improvements in transportation systems facilitated the use of heavier construction materials, and the R-6 Flattop lookout was typically constructed on base or tower made of concrete blocks.

<sup>&</sup>lt;sup>44</sup> USDA Forest Service Northern Region "National Forests and the Community 1964 in Review," p. 6. Folder: 1380 Reports Historical Northern Region in Review 1957-1966, Box 10, RG 95 Records of the Forest Service Region 1, Missoula, Montana Historical Collection 1903-1990, NARA Seattle.

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According to Kresek, this plan was designed in 1953, and models were still being built as late as 1984, for a cost of about \$28,000 each.<sup>45</sup>

## Further innovations in fire-detection technology

In 1982, the region integrated another new technological innovation into its fire detection system with the adoption of the Automatic Lightning Detection System (ALDS). A result of collaboration between the Bureau of Land Management, the US Forest Service's Northern Forest Fire Laboratory (in Missoula), and the University of Arizona, Joe Wagenfehr, head of the Division of Aviation and Fire Management in the region, described the ALDS as an "electronic lookout system." ALDS "permits the fire manager to assign fire detection aircraft to those lightning path areas, without the surveillance aircraft having to fly over much larger areas, outside the path of the lightning storms." After the adoption of ALDS, fixed lookouts used for fire detection were limited to areas that could not be effectively covered by ALDS and fire patrol aircraft and areas with high fire ratings because of human-caused fires.<sup>46</sup>

By 1992, all of the forests in Region 1 had integrated ALDS into their fire coordination systems, with the result that only 72 lookouts were manned region-wide.<sup>47</sup> This large-scale reduction in the use of fixed point lookouts was due primarily to the combination of aerial fire detection, coupled with ALDS. Since 1992, the number of fixed-point lookouts in Region 1 has decreased further. Many of the lookouts made redundant by new detection methods have been destroyed deliberately, while some were simply abandoned or maintained as "scenic vista points" for forest visitors. Since then a few abandoned lookouts have been restored and adapted for a new use as recreational rental units in the region's cabin rental program.

## Fire Lookout Development on the Lolo National Forest

The establishment and improvement of fire lookout points on the Lolo National Forest tracked with regional guidance. Besides tent camps, its earliest lookout improvements that predated the 1916 guidance from the regional office included: a 1913 log cabin on Illinois Peak; a 1914 pole tower on Gold Peak; and a 1914 log cabin and alidade at Ward Peak. By the end of the nineteen-teens, at least 12 additional lookout points had been improved with either timber or pole platform towers (some with associated log cabins). One, St. Patrick Lookout, had a D-6 Cupola- style lookout built in 1919.<sup>48</sup>

In May of 1921, Forest Inspector Howard Flint conducted a seven-day field review of the Lolo National Forest's fire organization, inspecting all aspects of its fire program including trips to at least four lookout points. In at least two cases, the lookout men were living at the district headquarters and walked to their lookout towers each morning. Plans were underway, however, to establish tent camps near their towers. Flint noted that seen area maps needed to be completed at one lookout to evaluate its relative usefulness, and that the quality of the maps and alidades at several points, and the telephone connections at most points needed to be brought up to

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<sup>&</sup>lt;sup>45</sup> Ray Kresek, *Fire Lookouts of the Northwest,* 12 (Fairfield WA: Ye Galleon Press 1984).

<sup>&</sup>lt;sup>46</sup> Press release dated February 1992 "Seventy-Two Lookouts to be Operated This Summer Down from 800 Used in 1938" Folder: Historical: Lookouts, Box 46, RG95 Historical Collection, NARA Seattle.

<sup>47</sup> Ibid.

<sup>&</sup>lt;sup>48</sup>Ray Kresek, *Fire Lookouts of the Northwest*, 380-381.

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standard. He also felt that the forest's guidance on observation hours for lookout men needed to be modified. As it stood, the men were told to make one observation at 6:30 am, after which they would devote their time to "camp work" until noon. From noon to 8:00 pm, the lookouts were expected to be on constant observation duty. His recommendations included the following:

Consider very carefully the question of requiring more hours of observation from lookout men. Probably in no case should more than two hours elapse between 7:00 am and 7:00 p.m. without a careful observation; the present instructions appear to contemplate a lapse of 5½ hours in the forenoon. A good observation every hour would be greatly preferable, and seems very reasonable.<sup>49</sup>

By 1922, a variety of additional lookout improvements were either planned or under construction in Lolo ranger districts stretching from Powell, Idaho to St. Regis, Montana. On the Powell district, employees were building a D-1 log lookout house at Indian Post Office.<sup>50</sup> In the Quartz district in Montana, the material for a new frame lookout house for St. Patrick's Peak was ready to transport to the building site, while a new log lookout 'cabin' was under construction on Stark Mountain. Howard Flint noted that the district ranger on the Quartz Ranger District had "... the unusual opportunity to compare costs between log and frame lookout buildings because he is building one of each under conditions that are nearly identical in each case. When the jobs are completed a write-up comparing the two buildings should make a very interesting bulletin article."<sup>51</sup>

Clearly, by the early to middle 1920s each forest was investing substantial effort to refine its protection plan.<sup>52</sup> Inspections of surrounding forests, including the Missoula National Forest (much of which was eventually transferred to the Lolo), contained recommendations similar to those made by Flint in 1921. For example, an inspection conducted in January of 1923 by D. L. Beatty, identified the need to establish a new lookout point to cover the Montour and Lodgepole drainages, neither of which was covered on "seen area" maps on file in the forest supervisor's office. "This is a large area and it should be seen from some point."<sup>53</sup>

A few more lookout points were improved during the 1920s (mostly observation platforms, some with associated cabins), but the Lolo program began to accelerate in the 1930s. During this period, virtually all new construction used Fickes' pyramidal roof L-4 design. Construction began slowly—one in 1931 and two each in

<sup>&</sup>lt;sup>49</sup> Howard Flint, Forest Examiner, "Memorandum" dated 6/4/1921. Folder: Lolo 1904-1923 1 of 4, Box 11, RG 95 USDA Forest Service Region 1 Division of Operations Inspection Reports 1906-1944 (hereinafter Inspection Reports), NARA Seattle. Lolo Forest Supervisor, Wilfred White responded to Flint's recommendations, mostly in the affirmative. He did not however agree with Flint on observation hours stating that if the lookout men were not required to make their first observation at 6:30 a.m. they began their day in a "tardy, slip-shod way" and furthermore that early observations were valuable. He explained that the instruction to the Lookouts represented the "minimum requirement during a favorable season, and there is no question but that Rangers will require their lookouts to make more frequent observations as necessity arises." Forest Supervisor, Wilfred W. White to District Forester, June 6, 1921. Folder: Lolo 1904-1923 1 of 4, Box 11, RG 95 USDA Inspection Reports, NARA Seattle.

<sup>&</sup>lt;sup>50</sup> The Powell District was later transferred to the Clearwater National Forest.

<sup>&</sup>lt;sup>51</sup> Howard R. Flint, District Forest Inspector, "Memorandum" September 29, 1922," Folder: Lolo 1904-1923 1 of 4, Box 11, RG 95 USDA Inspection Reports, NARA Seattle.

<sup>&</sup>lt;sup>52</sup> D. L. Beatty, Nat'l Forest Examiner "Inspection Report Submitted January 4, 1923," Folder: Lolo 1904-1923 1 of 4, Box 11, RG 95 USDA Inspection Reports, NARA Seattle. This report covered portions of the old Missoula National Forest that eventually transferred to the Flathead and the Lolo forests. Beatty designed an early standard plan 14 ft. x 14 ft. log lookout building.

<sup>&</sup>lt;sup>53</sup> D. L. Beatty, National Forest Examiner "Inspection Report Submitted January 4, 1923, Folder: Lolo 1904-1923, Box 11, RG 95 USDA Inspection Reports 1906-1944, NARA Seattle.

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1932 and 1933. In 1934 (the year following the establishment of the CCC), 17 new lookouts were added to established lookout points on the portion of the forest located in Mineral and Missoula counties, Montana. After this peak construction year, the number of units added included: two in 1935, three in 1936, four in 1937, three in 1938, and one each in 1939 and 1941.<sup>54</sup>

As late as 1936, however, decisions were still being made regarding the most suitable places to establish primary lookout points. In August of that year, R. E. Fields from the regional office conducted an inspection of the Lolo Ranger District's fire control program.<sup>55</sup> He noted that the district had seven regular or primary lookout points and three 'overload' or secondary lookouts points. Of these, six had been improved while the remaining four were tent camps. In discussing the Mormon Peak lookout point, he indicated that a 'main point' and two 'patrol points' (A and B) had been mapped previously. Fields felt that patrol point B should be used as the main observation point because it had good visibility, while four acres of clearing was required at the main lookout point to make it fully functional. The lookout man at the main point had accomplished a considerable amount of clearing during the 1936 season. Still, only 20 percent of the country could be seen from the main point.<sup>56</sup>

The entry of the United States into World War II halted virtually all improvements on the Lolo National Forest. After the war, funding was slow to improve. However, like all other forests, the Lolo participated in the 1950s regional plan to update or replace deteriorated lookout buildings. Between 1952 and the middle 1960s, it added at least six new lookout structures, all on previously improved lookout points. The earliest additions, on Cougar Peak (1952) and Mineral Peak (1956), were both 1936-pattern L-4 lookouts, while those added during the 1960s mostly were built according to the R-6 flat top plan approved in 1953.<sup>57</sup>

While some new lookout structures were being built to replace deteriorated structures, the rate of construction was not nearly as rapid as the rate at which lookout points were abandoned. Between the late 1940s and the mid-1960s, the Lolo destroyed about 26 lookouts in Missoula and Mineral counties alone.<sup>58</sup>

By 1967, the Lolo planned to use only 26 lookouts during the summer fire season.<sup>59</sup> Locations included: Baldy Mt., Big Hole Peak, Blue Mt., Cougar Peak, Clarks Peak, Double Arrow Mt., Driveway Peak, East Spread, Eddy Peak, Edith Peak, Falls Point, Iris Point, Landowner Peak, Mineral Peak, Morrell Mt., Mormon Peak, Pats Knob, Plateau Mt., Point 118, Priscilla Peak, Richards Peak, Sliderock Mt., Stark Mt., Thompson Peak, White Mt., and Williams Peak. While the majority of these were either 1931 or 1936 L-4 cabs, the list also included an early frame cupola-style lookout (Priscilla Peak), and four flat top lookouts built between 1952 and 1960 (Morrell Peak, Richards Peak, Stark Mt., and White Mt.).<sup>60</sup>

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<sup>&</sup>lt;sup>54</sup> Kresek *Fire Lookouts of the Northwest*, pp 380-381.

<sup>&</sup>lt;sup>55</sup> The "Lolo Ranger District" referred to by Fields included most of today's Missoula Ranger District.

<sup>&</sup>lt;sup>56</sup> R. E. Fields, Forester "Fire Control" August 25, 1936. Folder: Lolo 1929-1937, Box 11, RG 95 USDA Inspection Reports, NARA Seattle. In 1938, a 1931-plan L-4 lookout house on a pole tower was erected on Mormon Peak. Kresek *Fire Lookouts of the Northwest*, 381.

<sup>&</sup>lt;sup>57</sup> Kresek Fire Lookouts of the Northwest, pp 380-381.

<sup>58</sup> Ibid.

<sup>&</sup>lt;sup>59</sup> "List of Lookouts in R 1 1967." Folder: 5100 Lookouts Historical 2 of 2, Box 45, RG95 Historical Collection, NARA Seattle. This list includes only manned units. Many lookout points had been abandoned with the improvements left in place.

<sup>&</sup>lt;sup>60</sup> Kresek Fire Lookouts of the Northwest, 380-381.

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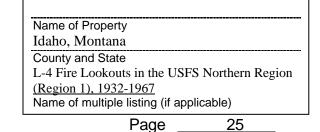
By 1992, the Lolo manned only 10 lookouts during the summer fire season. Nine of these (Blue Mt., Cougar Peak, Eddy Peak, Morrell Mt., Pats Knob, Richards Peak, Stark Mt., Thompson Peak, and Williams Peak), were included among the lookouts manned in 1967. However, only Cougar Peak retained its 1936 model L-4 lookout house. All of the others, including Camels Hump (newly added to the detection plan for the season) contained flat top cabs, most built according to the R-6 plan adopted in 1953.<sup>61</sup>

Although the majority of Lolo National Forest's fire lookouts have been destroyed (intentionally, through benign neglect, or through natural disaster), the forest retains four L-4 lookouts—two 1931-pattern lookouts (West Fork Butte and Double Arrow) and two 1936 pattern lookouts (Mineral Peak and Cougar Peak). Mineral Peak is abandoned in place, while the remaining three are integrated into the forest's cabin rental program. Figure 8 shows the locations of the four extant L-4 lookouts on the Lolo National Forest.

<sup>&</sup>lt;sup>61</sup> Press release dated Feb. 1992"Seventy-Two Lookouts to be Operated This Summer Down from 800 Used in 1938" Folder: Historical: Lookouts, Box 46, RG95 Historical Collection, NARA Seattle; Kresek *Lookouts of the Northwest* 1984:380-381.

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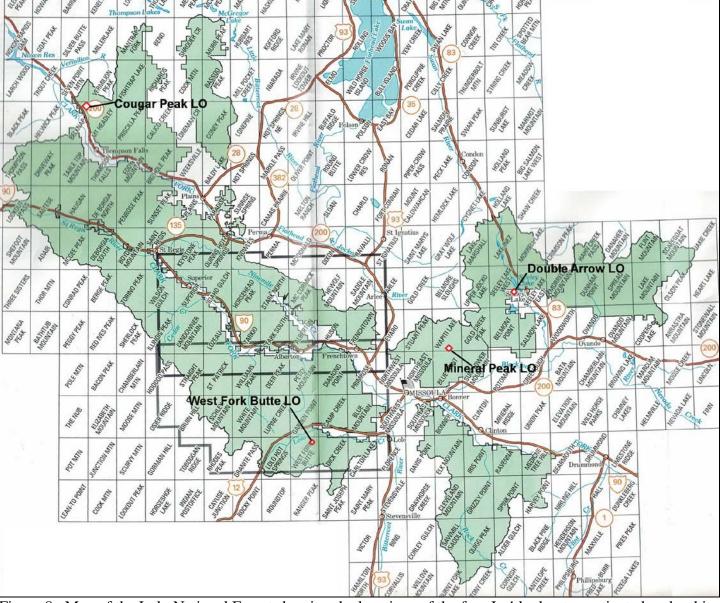


Figure 8. Map of the Lolo National Forest showing the locations of the four L-4 lookouts nominated under this MPD.

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#### Fire Lookout Development on the Bitterroot National Forest

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Originally established as the Bitter Root Reserve in 1897, the majority of the reserve at that time was located on the west slope of the Bitterroot Mountains in Idaho. In 1906, Elers Koch conducted an inspection of the Montana side of the reserve. He described the steep mountains on the west side of the Bitterroot Valley as "very bad fire country." The previous year, one fire on the West Fork of the Bitterroot River drainage had burned a considerable area, requiring the forest administrators to suspend all "free" public use of the area through the fire season. At the time of Koch's inspection, few trails accessed the Bitterroot Mountains, on either side of the divide. He concluded that a much larger ranger force would be the only protection against fires in the Bitterroot Mountains.<sup>62</sup>

After the issuance of the 1916 regional directive on developing fire detection and suppression systems, the Bitterroot National Forest began the process of identifying appropriate lookout points and equipping them with minimal improvements. Between 1922 and 1928 a handful of log and frame cupola-style lookout structures were built at lookout points in the Bitterroot Valley, from east of Stevensville to south of Darby.<sup>63</sup> However, the most remote and difficult to access terrain was in Idaho, in the Selway River country, on what was known historically as the Bear Creek (Moose Creek) and Salmon Mountain districts.<sup>64</sup> Both districts transferred to the Bitterroot National Forest's administration from adjacent forests in the late nineteen-teens. Forest examiners' reports from the early 1920s indicate the challenges in developing fire protection infrastructure in the remote Idaho backcountry. In a 1920 memo, Elers Koch described the area as follows:

The Bear Creek (Moose Creek) and Salmon Mountain Districts are probably the most remote and virgin wilderness country in the Northwest, possibly in the United States. A great deal has been done in the last five years to explore and open up this country.<sup>65</sup>

While trails, phone lines, and even detailed mapping of the country remained to be completed, Koch found that the Salmon Mountain District appeared to be fairly well covered by lookouts "... at least there are as many as the present protection allotment would justify." Koch had visited three, Spot Mountain, Burnt Knob, and Salmon Mountain, all of which he described as "well selected and first-class lookouts." However, none had any improvements other than a map board; lookout men resided in tent camps located at the closest water source.

Koch acknowledged that the Bear Creek District was more difficult to cover with lookout points, noting that "... the country is so cut up by deep canyons that it is very hard to see it without an excessive number of lookouts ....." In 1920, the district had only two lookouts in use (Moe Peak and Wylies Peak). While the district's organizational map showed two other lookout points, one at Gardner (a.k.a. Gardiner) Peak and one

<sup>&</sup>lt;sup>62</sup> Elers Koch, Forest Inspector, "Report on Bitter Root Reserve, Montana," December 1906. Folder: Bitterroot NF 1933-1938 2 of 3; Box 2 Bitterroot – Cabinet 1931-1938, Record Group 95 (hereinafter RG 95) USFS Regional Office Missoula, MT, Inspection Reports 1906-1944 (hereinafter Regional Office Inspection Reports 1906-1944), National Archives and Records Administration, Seattle (hereinafter RG 95, NARA Seattle).

<sup>&</sup>lt;sup>63</sup> Ray Kresek, 1984 Fire Lookouts of the Northwest. Fairfield Washington: Ye Galleon Press, 388-389.

<sup>&</sup>lt;sup>64</sup> 1936 Bitterroot National Forest Map. Folder: F – Plans Bitterroot Suppression, Box 21, Series: BIT05 Forest Supervisors Alpha Files ca 1900-1963 (hereinafter BIT05), RG 95 Records of the Forest Service Bitterroot National Forest NARA Seattle.

<sup>&</sup>lt;sup>65</sup> Elers Koch "O Supervision-Inspection East Selway." Report submitted September 8, 1920. Folder: Bitterroot NF 1933-1938 2 of 3; Box 2 Bitterroot – Cabinet 1931-1938, RG 95 Regional Office Inspection Reports 1906-1944, NARA Seattle.

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somewhere on Running Creek, Koch felt that the former was unsatisfactory, and that the latter point had not yet been identified.<sup>66</sup>

Two years after Koch's trip to the Idaho side of the Bitterroot National Forest, Howard Flint conducted another inspection of the Salmon Mountain District. He examined the site of the Spot Mountain Lookout, where he found a log cabin nearing completion. The building had been built with locally available materials with time contributed by the lookouts and firemen. While Flint acknowledged that the two men responsible for the majority of the construction did a creditable job, the building was not built from a standard plan: "It will be difficult to maintain in good shape and, because of faulty design, not fully satisfactory in use. The point is that one of the accepted standards of lookout buildings should have been built and at least the man in charge of the job should have been a skilled builder with instructions to put quality within reason, into the job."<sup>67</sup>

At the Swet Lake Lookout site, men were cutting logs for lookout house, but a specific site had not been selected for its construction. He noted that the Salmon Mountain Lookout site was one of the "most commanding" lookout points in the region, and that trees were being cut locally for the construction of a "standard log lookout building." At the site of the Nez Perce Peak Lookout, he found a standard cupola-style log lookout house under construction:

The plan was being adhered to and the workmanship on the house so far as it had progressed was good. The use of the scribing and fitting method for the logs would have been an improvement but the log work being done was good. Emphasis should be placed on the need for good weather proof work on window and door frames. Mr Goodhue who is in charge on the job is a mechanic of considerable skill and can turn off (sic) good work if he is impressed with the idea that that is what is wanted.<sup>68</sup>

Flint completed his critique of the lookouts on the Salmon Mountain District by stating that he thought they were only sixty to sixty-five percent effective in detecting fires. He noted that at least part of the problem was a lack of improvements—specifically lookout houses.<sup>69</sup>

The Bitterroot continued to develop its comprehensive fire protection plan throughout the remainder of the 1920s. Like every other forest in the region, the Bitterroot acknowledged that lookout men functioned as its principal agents of fire detection, yet most districts were slow to provide them with the improvements that would aid them in their work.<sup>70</sup> In the spring of 1930, five of the forest's districts updated their fire protection plans, apparently in preparation for finalizing the comprehensive forest-wide fire protection plan, which was completed in 1931.<sup>71</sup> On the Montana side of the forest, Darby Ranger District identified Deer Mountain Lookout as its main lookout point, supplemented by firemen stations at Trapper Creek Ranger Station, Rye

<sup>66</sup> Ibid.

 <sup>&</sup>lt;sup>67</sup> Howard Flint, Forest Inspector, Supervision Inspection Report 1922. Folder "Bitterroot National Forest Inspection Reports, 1933-1920 2 /3," Box 2 "Bitterroot – Cabinet," RG 95 Regional Office Inspection Reports 1906 -1938, NARA Seattle.
 <sup>68</sup> Ibid., p. 4

<sup>&</sup>lt;sup>69</sup> Ibid., p. 4.

<sup>&</sup>lt;sup>70</sup> "Bitterroot NF West Fork District Fire Plan, Revised 5/15/1930." Folder: F-Plans Bitterroot Prevention (1 of 2), Box 21, RG 95, Records of the Forest Service Bitterroot National Forest, Forest Supervisor's Files, Alpha Files F-Plans F – Statistic (Hereinafter Bitterroot Supervisor's Alpha Files), NARA Seattle.

<sup>&</sup>lt;sup>71</sup> T. E. Smith "Prevention Plan Supplement", June 15, 1951. Folder: F Plans – Bitterroot Prevention CY 1948 through 1955, Box 21, BIT 05, RG 95 Records of the Forest Service, Bitterroot National Forest, NARA Seattle.

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Creek, Bald Top, Sleeping Child Ranger Station, at the community of Grantsdale, and at Black Bear Ranger Station. Only Deer Mountain had permanent improvements—a 1926 log cupola cabin.<sup>72</sup>

The East Fork District identified two lookout points, one at Fish Lake Mountain (which served as the district's primary lookout), and another at Sula Peak.<sup>73</sup> In 1930, neither of these lookouts had permanent improvements.

The West Fork District identified three fire detection points including: Quartzite Mt., Piquette Mt., and Bare Cone. Both Piquette Mt. and Bare Cone contained lookout structures; a frame cupola at Piquette Mt. built in 1928, and a two-story log cabin at Bare Cone built in 1922. The district also proposed placing a combination lookout-fireman at Chicken Cr. Ridge.<sup>74</sup>

On the Idaho side of the Bitterroot Mountains, the Paradise District (managed jointly with the Nez Perce National Forest), had completed seen area maps for two primary and one secondary lookout points, Spot Mt., Nez Perce Peak, and Beaver Jack. All three of these lookout points contained lookout structures built in the early 1920s. The district also planned to create seen area maps for its secondary and emergency points, which included Mt. George, Burnt Strip Mt., Vance Mt., Back Luck, and Peach Creek. In keeping with the everchanging nature of protection plans, an undated hand-written revision on the Paradise District plan noted that the Burnt Strip Mt. and Vance Mt., and a previously unidentified point, Mt. Geb, were reclassified as primary lookout points.<sup>75</sup>

On the Salmon Mountain District, the Salmon Mt. Lookout remained its only primary lookout point, with the lookout man working from a log cupola lookout structure built in 1928:

There is at present only one primary lookout on the District, Salmon MT. This is the highest point on the District and best located with best facilities for detecting and reporting fires. Headquarters and every man in the Salmon District rely on the Salmon Mt. lookout as the principal source of information for detection and follow-up on fires. In addition to keeping close watch for smoke the lookout on Salmon keeps weather records and reports each day to Red River though Burnt Knob. Anometer, psychrometer and hydro-thermograph reading(s) are given in this report. The lookout on this point will not go to fires unless relieved or given special instruction by the ranger.<sup>76</sup>

The Salmon Mountain District also stationed men at Waugh (Lost Packer), Mount Harrington, Square Top, Hells Half Acre, and Elkhorn Mt. These men were instructed to act as lookouts when not actually engaged in

<sup>&</sup>lt;sup>72</sup> "Fire Plan for Darby District for 1930." Folder: F-Plans Bitterroot Prevention (2 of 2), Box 21, RG 95 Bitterroot Supervisor's Alpha Files, NARA Seattle; Kresek 1984, *Fire Lookouts of the Northwest*, 388.

 <sup>&</sup>lt;sup>73</sup> "Bitterroot National Forest, East Fork District, Fire Plan" 5/6/1930. Folder: F-Plans Bitterroot Prevention (2 of 2), Box 21, RG 95
 Bitterroot Supervisor's Alpha Files, NARA Seattle. Note that the East Fork District is roughly equivalent to the current Sula District.
 <sup>74</sup> "Bitterroot National Forest West Fork District, Fire Plan" revised 5/15/1930. Folder: F-Plans Bitterroot Prevention (2 of 2), Box 21, RG 95
 Bitterroot Supervisor's Alpha Files, NARA Seattle.

<sup>&</sup>lt;sup>75</sup> "Bitterroot – Nez Perce National Forest, Paradise District, Fire Plan" May 1, 1930. Folder: F-Plans Bitterroot Prevention (2 of 2), Box 21, RG 95 Bitterroot Supervisor's Alpha Files, NARA Seattle. The area referred to as Paradise District in 1930 corresponds in large part to the area described by Elers Koch as the Bear Creek (Moose Creek) District in 1920, incorporating the upper Selway River country.

<sup>&</sup>lt;sup>76</sup> "Bitterroot – Nez Perce National Forest, Salmon District, Fire Plan" Revised 2/26/30. Folder: F-Plans Bitterroot Prevention (2 of 2), Box 21, RG 95 Bitterroot Supervisor's Alpha Files, NARA Seattle.

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fighting fire. The lookout men stationed at Hell's Half Acre and Square Top were to be replaced while away from their stations because of the importance of those two points in detecting fires.<sup>77</sup>

In 1937, the regional office dispatched Elers Koch (then serving as the Assistant Regional Forester) to conduct a general inspection of the Bitterroot National Forest. Under the heading "Lookout Development," Koch wrote "The Bitterroot is probably further behind than any Forest in the Region on lookout improvements, except for the Moose Creek District. This seems to be due to the reluctance of the former Supervisor to push this class of work."<sup>78</sup> Koch included a table that listed the number of "regular" and "first call emergency" lookout points in each district and the number that had improvements. While none of the districts had invested in improvements at its emergency lookout points, there was considerable variation in the development at regular (primary) lookout points. On the Montana side of the forest, the "North End" district (corresponding in general to the current Stevensville District), only two of its six regular lookout points were improved. On the Darby District, three of its five regular lookout points had improvements. The East Fork and West Fork districts each had seven regular lookout points, only two of which contained lookout structures.<sup>79</sup>

On the Idaho side of the forest, the Salmon Mountain District had nineteen regular lookout points, six of which contained improvements. As indicated by Koch, the Moose Creek District had the best record of improvements, having completed lookout structures at sixteen of its seventeen regular lookout points.<sup>80</sup>

Koch pointed out that even the improved lookout points were all occupied as tent camps, a situation that did "not give full efficiency." Most of the then-extant lookout structures consisted of small log or frame buildings (some with cupolas) not large enough to contain living quarters and a space for observation. They certainly did not meet Regional Forester Evan Kelley's concept of a structure in which a lookout man could be constantly on duty. Koch concluded by noting that the West Fork District had started work on a tower—presumably to accommodate a new L-4 cab.<sup>81</sup> And, although two lookout house kits were stored at the Moose Creek Ranger Station, the district lacked the funds for erecting them.<sup>82</sup>

Koch filed his report with the region and with the forest in August. In September, Evan Kelly sent a letter to Bitterroot Forest Supervisor, G. M. Brandborg, offering suggestions on how to address the problem of bringing the forest up to speed on lookout improvements:

Since the development of improvements at lookout points is so far in arrears on the Bitterroot, it will no doubt prove difficult to accomplish. Careful planning will be necessary that advantage may be taken of any possible opportunity that presents itself. If careful planning reveals that there is a chance to erect some of these structures with ECW funds, it should be attempted. A man like Enders, with a small crew

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<sup>77</sup> Ibid.

<sup>&</sup>lt;sup>78</sup> Elers Koch, Assistant Regional Forester, "August 19, 1937 Memorandum for Supervisor and Regional Office D (s) Supervision – Bitterroot Inspection." Folder Bitterroot National Forest Inspection Reports, 1938-1935, 1 of 3, Box 2 Bitterroot – Cabinet, RG 95 Regional Office Inspection Reports 1906-1938, NARA, Seattle.

<sup>&</sup>lt;sup>79</sup> Ibid.

<sup>&</sup>lt;sup>80</sup> Ibid.

<sup>&</sup>lt;sup>81</sup> The tower noted in Koch's report may have been for the Boulder Point Lookout, built in 1937 on the West Fork District. <sup>82</sup> Ibid. According to information compiled by Ray Kresek in his *Fire Lookouts of the Northwest*, at least six L-4 lookouts had been built on the Bitterroot National Forest, three each in districts on the Montana and Idaho sides of the divide. This information appears to contradict Koch's statement that all improved lookout points on the Bitterroot National Forest were occupied as tent camps.

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of CCC's, could likely put up some of these structures, especially where they are placed on the ground or a short tower. In so doing there will, of course, be other planned jobs for CCC which will not be accomplished so soon. It involves to a large degree a matter of determining priorities based on the greatest need and in such determination Forest protection must be given its full weight as a high priority job.<sup>83</sup>

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Following Kelley's letter, the construction of lookouts did pick up on the Bitterroot. Between 1937 and 1941, the forest added thirteen new L-4 lookouts on previously established lookout points. At least one of these, Medicine Point Lookout, built in 1939, was definitely constructed with the use of CCC labor. As in other National Forests throughout the country, the entry of the US into World War II abruptly ended the construction of all types of improvements, including lookouts.

In 1944, the regional office appealed to all forests in Region 1 to update their fire plans. The reasons for the updates were many, but focused on developing a more complete understanding of how to incorporate advances in air detection and suppression (i.e. smoke-jumping) into forests fire plans—especially in areas that straddled forest boundaries. Apparently, the Bitterroot Forest Supervisor was non-cooperative to initial requests, citing additional work load resulting from the war effort. Evan Kelly replied with a lengthy letter to Forest Supervisor Brandborg, pointing out that the success of the smokejumper program required each forest to revamp its fire plan to integrate this new system of finding and fighting fire: "Failure to make use of new and more effective things is a more serious error in war time than such negligence would be in times of peace."<sup>84</sup> He pointed out that the Bitterroot had been one of the pioneers in using smoke jumpers noting that more than half of the eighty jumper fires in the past four seasons had been on the Bitterroot forest, mostly on the Moose Creek District. Further "in the interest of sound economy and common sense," the practice of simply superimposing smokejumper coverage over the previously existing system of fixed point detection" represented a duplication of expense and effort that could not be continued:

We can no longer regard smokejumping as experimental. With no attempt to deny their shortcomings, the fact remains that smokejumpers can and do get their fires and they are not tied down to a circumscribed area which may or may not have need for their services.<sup>85</sup>

Finally, Kelley pointed out that the use of airplanes and smokejumpers blurred artificial forest and district boundaries. Because of this, the Bitterroot's plan for its backcountry areas (basically all lands that it administered in Idaho) would have to integrate with the plans for the eastern portion of the Nez Perce National Forest (the upper Selway River country), and the Lochsa drainage of the Clearwater and Lolo forests. "The principle involved is one of extreme mobility and flexibility as well as speed of attack. Hence a plan for one forest must of necessity be incorporated into a plan for all. We just cannot do the job adequately without the

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<sup>&</sup>lt;sup>83</sup> Evan Kelley to Bitterroot Forest Supervisor, G. M. Brandborg, September 29, 1937. Folder Bitterroot National Forest Inspection Reports, 1938-1935, 1 of 3, Box 2 Bitterroot – Cabinet, RG 95 Regional Office Inspection Reports 1906-1938, NARA, Seattle. Brandborg's often rocky relationship with Evan Kelley is the stuff of legend, but in this instance, he appears to have taken Kelley's advice to heart. Medicine Point Lookout, constructed in 1939, was built with CCC labor.

<sup>&</sup>lt;sup>84</sup> Kelley to Brandborg, January 24, 1944. Folder F: Plans Presuppression 1930-1947. Box 20. BIT05, RG 95 Records of the Forest Service, NARA Seattle.

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help of you and those of your organization that are concerned in the administration of your back county areas."<sup>86</sup>

Based upon available documentation, integrative planning for fire detection and suppression was neither quick nor easy. By 1948, the Salmon and Payette national forests in Region 5, as well as the Beaverhead National Forest in Region 1, had been added to the Bitterroot's fire program planning efforts. Major issues included: upgrading telephone and radio communications systems to improve the speed of fire reporting, providing seen area maps to adjacent forests, arranging for adjacent forests to share in the cost of manning lookout points that covered portions of two or more forests, and determining the quickest route for returning jumpers to their base in Missoula. In some cases, a primary lookout point would be abandoned in favor of another that covered more areas on adjacent forests.<sup>87</sup>

While this level of planning required substantial effort during the mid-1950s push to prioritize lookout replacements, the Bitterroot National Forest found itself in the enviable position of having fully converted to an air-ground detection system. The forest had sixteen lookouts integrated into its detection program. After the completion of the requisite inspections, only two lookouts required immediate replacement, with one each in 1956 and 1958, four in 1960, and two scheduled to be replaced in 1965. Six lookouts were classified as "indefinite," meaning that they could last fifteen years or more.<sup>88</sup>

By 1956, the number of lookouts integrated into the Bitterroot's air-ground detection plan had been reduced to thirteen. The selection of the lookout points was made after careful consideration of six factors:

1) Whether the lookout point provided detection in early fire season areas (south slopes and low elevations);

2) Whether the lookout point covered areas of high occurrence or continuing dangerous fuels where consistent ground observation was required;

3) The ability of the lookout to provide radio communication with airplane and headquarters stations;

4) The ability to take fire weather measurements;

5) The ability to report the path of lightning storms and concentrations in order to inform the frequency, extent, and route of the air patrol, and;

6) The ability to assist in tracking the airplane during flight.<sup>89</sup>

While lookouts were selected to cover the most important areas of the forest, the flight paths for the regularly scheduled air patrols covered areas not observed from the lookout points. The forest budgeted for 312 hours of flying time for regular patrols and 60 hours for patrolling after lightning storms.<sup>90</sup>

<sup>&</sup>lt;sup>86</sup> Ibid.

<sup>&</sup>lt;sup>87</sup> G. M. Brandborg to Regional Forester, 1/26/1948. Folder F-Improvements General 1936-1951, Box 20, BIT05, RG 95 Records of the Bitterroot National Forest, NARA Seattle.

<sup>&</sup>lt;sup>88</sup> Ralph Hand "History of Region 1 Lookout System," August 23, 1954. Folder: Historical: Lookouts, Box 46, RG 95 Historical Collection, NARA Seattle. The indefinite class of lookouts likely included Salmon Mountain Lookout, built in 1949, and Gardiner Peak Lookout built in 1949. Both of these lookouts are 1936-pattern L-4 cabs on pole towers.

<sup>&</sup>lt;sup>89</sup> "Bitterroot Air-Ground Detection Plan," June 11, 1956. Folder F-Plans Bitterroot Presuppression 1956, Box 20, BIT05, RG 95 Records of the Bitterroot National Forest, NARA Seattle.

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Between 1956 and 1982 the Bitterroot's presuppression plan appears to have changed very little. However, the 1982 adoption of the Automatic Lightning Detection System (ALDS) by Region 1 fire managers further limited the number of fixed detection points required to cover critical areas of the forest. In 1992, the Bitterroot National Forest intended to man only ten lookouts. These included: Spot Mountain, Salmon Mountain and Hell's Half Acre, all originally located in Idaho within the old Salmon Mountain District. By 1992 this area had been added to a greatly expanded West Fork District. On Spot Mountain, the 1934 L-4 lookout structure had been replaced by a flat top cab in 1972. Salmon Mountain retained its 1936-pattern L-4 lookout, built in 1949, while Hell's Half Acre's 1940 L-4 had been replaced in 1960 with a flat topped cab on a ten-foot concrete base. Manned lookouts on the Montana side of the West Fork District included Bare Cone and Lookout Mountain (both flat top cabs atop concrete bases built in 1962 and 1974, respectively).

The remaining manned lookouts in 1992 included: Sula Peak and Teepee Point on the Sula District (the old East Fork District); Deer Mt. on the Darby District (another flat top cab on a concrete base built in 1960); and St. Maries Peak and Willow Mountain on the Stevensville District. Only St. Maries Peak retained its 1936-pattern L-4 cab, built in 1953. The Willow Mountain Lookout consisted of a flat top cab on a concrete base, built in 1966.<sup>91</sup>

While many of the Bitterroot National Forest's L-4 lookouts were deliberately destroyed, seven remain. Salmon Mountain Lookout and Gardiner Peak Lookout, both 1936-pattern L-4 lookouts, are located on the Idaho side of the West Fork District (Figure 9). Volunteers man Salmon Mountain Lookout during the summer fire season with logistical support from the district. Gardiner Peak, built in 1953, is a 1936-patten L-4 cab on a treated timber tower. It is manned sporadically, depending on the season. The other five are located on the Montana side of the forest and include: Boulder Point Lookout on the West Fork District; Medicine Point Lookout on the Sula District; Gird Point Lookout on the Darby District; and, St. Maries Lookout on the Stevensville District (see Figure 9). Boulder Point, built in 1937 is a 1931-pattern L-4 cab on a pole tower. Although vacant, it is sometimes used by members of the West Fork Ski Club. Medicine Point and Gird Point are both 1931-pattern L-4 cabs on pole towers built in 1939. Both are offered for rent under the region's cabin rental program. St. Mary's Peak Lookout is a 1936-pattern L-4 cab atop a stone tower, built in 1953. Like Salmon Mountain Lookout, St. Mary's is manned by volunteers during the summer fire season.

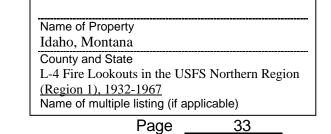
The seventh L-4 lookout is McCart Lookout, located on the Sula District. This 1931-pattern L-4 cab on a pole tower was built in 1939 (the same year as Medicine Point and Gird Point lookouts). Like those two facilities, McCart Lookout is used as a cabin rental. This property was listed in the National Register of Historic Places in 1996 (NR # 96000660).

<sup>90</sup> Ibid.

<sup>&</sup>lt;sup>91</sup> Press release dated Feb. 1992 "Seventy-Two Lookouts to be Operated This Summer Down from 800 Used in 1938" Folder: Historical: Lookouts, Box 46, RG95 Historical Collection, NARA Seattle. Note that Salmon Mountain was also counted among the Nez Perce National Forest's manned lookouts. Ray Kresek, 1984 Fire Lookouts of the Northwest, pp. 291-295 and 388-389.

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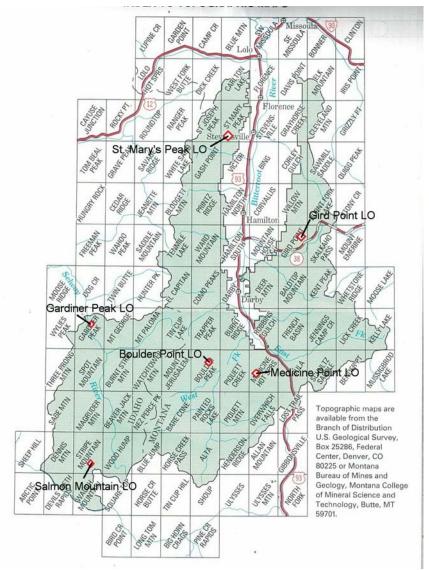


Figure 9. Map of the Bitterroot National Forest showing the locations of the six L-4 lookouts nominated under this MPD.

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## F. Associated Property Types

Name of Property Idaho, Montana County and State L-4 Fire Lookouts in the USFS Northern Region (Region 1), 1932-1967 Name of multiple listing (if applicable)

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The property type associated with this multiple property submission are L-4 lookout houses. Two different subgroups are associated with L-4 lookouts.

#### 1931 Pattern L-4 Lookout Houses

The 1931-pattern L-4 Lookout House measures 14' by 14' square, with a pyramidal hip roof. Most of these lookout 'cabs' are built on towers and surrounded by a 3' wide catwalk. Those built directly on the ground, sometimes lack the catwalk. Distinctive architectural features include: the use of nine-light sliding wood window sash, drop siding on the exterior walls below the windows and sawn cedar shingle roofs. Entries contain wood panel door with four or six lights. Top hinged shutters are propped open with struts affixed directly to the exterior walls (if the house is built on the ground) or to the catwalk railings (if the house is built on a tower).

#### 1936 Pattern L-4 Lookout Houses

The 1936 pattern L-4 Lookout House is similar to the earlier pattern in basic form and finishing materials. The major difference is in the system of holding the shutters open. Instead of struts, the shutters are held open by bolts affixed to "outriggers" located at the top of the cab's four walls. In addition, instead of the sliding, the middle sash in the 1936-pattern cabs opens outward casement style. Finally, the standard plan calls for four-light windows. While most of the 1936-pattern L-4 lookouts contain four-light window sash, a few have three-light sash.

#### Significance

# L-4 Fire Lookouts on the Lolo National Forest and the Bitterroot National Forest and National Register Criteria

<u>National Register Criterion A</u>: Under Criterion A, an L-4 Lookout may be eligible for listing in the National Register through its association with historic themes. Applicable areas of significance for lookouts include:

Conservation: All extant L-4 Lookouts eligible for listing in the National Register are associated with the broad patterns of conservation. The lookouts represent the Forest Service management policies and the aesthetics that guided the agency's permanent improvements program. Unlike the Forest Service's front-country facilities, these physically isolated resources reflect the principals of limited development. The importance of conserving forest resources was established in the 1905 edition of the Forest Service Use Book, which stated: "Officers of the Forest Service, especially forest rangers, have no duty more important than protecting the reserves from forest fires."<sup>92</sup>

Politics/Government: Several Acts of Congress led to the formation of the Forest Service, the first being the Forest Reserve Act of 1891, which authorized the federal government to set-aside forested lands for the public interest. Passage of the Organic Administrative Act in 1897 stipulated that the purpose of forest reserves was to

<sup>&</sup>lt;sup>92</sup> United States Department of Agriculture, Forest Service, *The Use of the National Forest Reserves: Regulations and Instructions* (Washington: Government Printing Office, 1905). The Use Book was a pocket-sized guide containing a summary of forest service regulations designed to be used by agency employees and by the public

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protect watersheds and lands that were chiefly valuable for sustained timber production. The 1905 Transfer Act moved management of the forest reserves from the General Land Office under the Department of the Interior to the Bureau of Forestry within the Department of Agriculture. Within five months, the Bureau of Forestry was formally renamed the U. S. Forest Service. Protection, along with administration, and development proved the mission of Forest Service through much of its history. Protection assumed a large piece of the agency's mission; however, it wasn't unit the 1930s that a standardized lookout plan was finally developed, resulting in large numbers of L-4 lookouts constructed on forests throughout the Northern Region.

<u>National Register Criterion B</u>: Under Criterion B, L-4 lookouts may be eligible for the National Register if a historically significant person directly relates to the building. Although extant L-4 lookouts represent the standardized designs of Clyde Fickes, properties significant as a result of an architect's design or engineer's skill are generally found eligible under Criterion C.

<u>National Register Criterion C</u>: Under Criterion C, L-4 lookouts may be eligible for the National Register if they embody the "distinctive characteristics of a type, period, or method of construction, or represent the work of a master, possess high artistic value or represents a significant and distinguishable entity whose components lack individual distinction." Applicable areas of significance for this criterion include architecture and engineering.

The development of the "readicut" L-4 lookout house was instrumental in Region 1's successful completion of its system of ground- or fixed-point fire detection. L-4 "kits" solved several problems one of which was logistics. Kits arrived in bundles ready to be loaded onto mules for transport to remote lookout sites. Once on site, the buildings could be erected quickly, by people with limited carpentry experience, using just a few simple tools. After adoption of this standardized plan, the forests in Region 1, including the Lolo National Forest, were able to complete their fire detection or "presuppression" systems fairly rapidly with limited funding.

*Registration Requirements*: Significant dates associated with L-4 Lookouts listed under this MPD must fall within the period of significance defined in this document, 1932-1967.

# National Register Criterion A: An L-4 Lookout may be eligible for listing in the National Register of Historic Places under Criterion A if it is:

<u>Associated with Forest Service management policies and its attempts to preserve and manage the forest</u> <u>resources of the Lolo or Bitterroot National Forests</u>. The L-4 lookouts in the USDA Forest Service Region 1 are a physical reminder of the agency's efforts to manage and protect the areas under its supervision from the devastating effects of wildfire. Forest protection measures played a huge role in the history of the Forest Service. After the devastating fire of 1910, the agency invested heavily in the development of fire suppression policy, a major component of which was detection from fixed lookout points. The standardized lookout designs of Clyde Fickes in 1928, followed by the updated and approved pyramidal roof L-4 in 1931, set the Northern Region on an accelerated course of fire protection through improved detection.

# National Register Criterion C: An L-4 Lookout may be eligible for listing in the National Register of Historic Places under Criterion C if it.

<u>Is an intact example of the original 1931 or modified 1936 standardized L-4 plan.</u> The standardization of lookouts in the early 1930s moved the forests in the Northern Region toward significantly improved fire detection and protection capabilities. Clyde Fickes' standardized plans facilitated the construction of

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durable and inexpensive lookouts that could be assembled in the field by forest service employees with limited construction skills.

#### Integrity

<u>Design</u>, <u>Materials</u>, <u>Workmanship</u>: Eligible L-4 lookouts must retain the majority of their characterdefining cab-related construction features and be identifiable as to its unique property type (i.e. as 1931 or 1936-edition lookout houses). Decades of use in an inhospitable environment necessitates maintenance of some of the wooden components. Changes made historically or appropriate preservation maintenance (including in-kind replacement of lookout cab materials) do not adversely affect a lookout's integrity of materials, workmanship and design. As the towers that support the cabs are fundamentally important to the use and safety of the lookouts, changes to these may occur without negatively affecting the overall integrity of the lookout. Ancillary structures such as outhouses may be replaced or removed without eliminating a property from eligibility.

Location, Setting, Feeling, and Association: Lookouts must remain in their original location. In addition, lookout cabs originally supported by towers must remain so; a cab removed from its tower and placed on the ground would be considered not eligible for listing in the National Register. As lookouts occur in remote areas, integrity of location strongly indicates that integrity of setting, feeling, and association would also remain strong,

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National Park Service	

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#### G. Geographical Data

The geographical area covered by this multiple property submission includes federal lands administered by the USDA Forest Service Northern Region (Region 1) in the states of Idaho and Montana.

With regard to the Lolo National Forest's four remaining L-4 lookouts, three are located in Missoula County and one is in Sanders County. The fact that the majority of the lookouts are located within Missoula County is coincidental. L-4 lookouts were once ubiquitous on Lolo National Forest lands in Missoula, Mineral, and Sanders County.

Of the Bitterroot National Forest's seven remaining L-4 lookouts, two are located in Idaho County, Idaho, and five are located in Ravalli County, Montana. Because the McCart Lookout was previously listed in the National Register in 1996, only six L-4 lookouts in the Bitterroot National Forest will be listed under this multiple property submission.

## H. Summary of Identification and Evaluation Methods

The fire lookouts included in this MDP represent the remaining L-4-style lookouts located within the forests of the USDA Forest Service's Northern Region (Region 1). A 1984 effort to obtain determinations of eligibility for all varieties of lookouts on the Lolo and Bitterroot national forests identified eight L-4 lookouts on the Lolo National Forest that were 50 years old or older. Since that time six of the Lolo's have been removed from the landscape. Causes include: demolition by neglect, destruction by wildfire, and replacement with new structures.<sup>93</sup> In contrast, all seven of the Bitterroot National Forest's L-4 lookouts included in the 1984 study are still standing.

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<sup>&</sup>lt;sup>93</sup> Note that the 1984 effort listed Mineral Mt. (a.k.a.) Mineral Peak Lookout as a post- 1942 flat roof cinderblock building. Although it does post-date 1942, it is simply the later, 1936 version of the L-4 Lookout House. With regard to the Bitterroot National Forest, 1984 study excluded Salmon Mountain Lookout, and listed both Gardiner Peak Lookout as removed.

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As commenting authority under the National Historic Preservation Act of 1966, as amended, I hereby agree that this documentation form meets the National Register documentation standards and sets forth requirements for the listing of related properties consistent with the National Register criteria. This submission meets the procedural and professional requirements set forth in 36 CFR 60 and the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation.

	_Montana State Historic Preservation O	fficer
Signature of commenting official	Title	Date
_Montana State Historic Preservation Of	fice _	
State or Federal Agency or Tribal government	nent	

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