

Engineering Department

This department is in charge of Engineer A. W. Surber, aided by assistant Engineer W. I. Davis.

Road Maintenance: The Park road system consists of 298 miles of road designated as follows: Grand Loop 137.4 miles, approach and connecting roads 73.1 miles, secondary and roads to points of interest, 81.5 miles. During the 1925 season 291.8 miles of roads were maintained in the Park, also 29 miles of road in the Shoshone Forest on the east side of the Park, and 70 miles in the Teton Forest on the south side. Twenty-four crews were engaged on this work, requiring 147 employees, 55 teams and 8 gravel trucks.

During the tourist season 107 miles of the Grand Loop Road was sprinkled twice daily. The equipment required was nine motor sprinklers, two 2-horse sprinklers and six 4-horse sprinklers. The motor sprinklers are not as efficient as expected because of mechanical failures, necessitating their laying off for repairs when most needed on the road.

A crew of four men using a Graham truck for transportation made repairs and maintained the sprinkler supply system. Twelve new 1600 gallon redwood tanks were installed, flumes rebuilt and supply pipe replaced.

Snow Removal: Unusually heavy snowfall in the south and east sections of the park, followed by a cold backward

spring, made the work of opening the Park roads to travel more difficult than usual. On June 1st a crew began blasting in Sylvan Pass and the 12th another crew began at Cub Creek, opening the East Entrance Road on June 19th. The Duraven Pass road was opened June 18th after a crew had worked 13 days blasting and shoveling. The Continental Divide Road was opened June 16th, the South Entrance Road June 22nd and the Mt. Washburn Road July 1st.

Road Improvement: The first three-year program of improvements to roads in Yellowstone Park consists of 13 projects of which the following named five will be completed, or partially completed this season:

Project #13 - Lake Shore Road. Reconstruction of the old road eleven miles in length along the shore of Lake Yellowstone between East Thumb and Bridge Bay, to replace the present steep, narrow and uninteresting section.

Project #6 - Firehole River Road. Widening for two-way travel a section one and one-half miles in length along the Firehole River, south from Firehole Cascades.

Project #7 - East Thumb-Tarnica Creek Road. Widening the present road for three-quarters of a mile over Bluff Point, a preliminary two miles from East Thumb on the Lake Road.

Project #9 - Mammoth-Tower Falls Road. Widening 1-1/8 miles and surfacing 3 miles between the two and five-mile posts from Mammoth.

Project #11 - Inspiration Point Road. Reconstruction of 2-1/2 miles of road along the north rim of the Grand Canyon.

Bridges: Twenty-three steel bridges, having a combined length of 2200 feet, were painted this year. Following is the specifications for the paint purchased for this job; 15% sblimex blue lead; 10% silico and 10% zinc; 20% pure chrome yellow, 35% white lead; 10% coloring (National Park Service green) ground in pure linseed oil.

Crawfish Creek bridge: a 54-foot steel bridge was constructed over Crawfish Creek on the South Entrance Road, replacing an old log bridge that had become dangerous. The new bridge is one that was removed from a location on the Gardiner River in 1919. It is a 15 degree skew bridge and crosses the creek at that angle, permitting the road to be straightened at the crossing. The bridge was placed on concrete abutments.

Buildings: A new ranger station was erected at Thumb of Lake near the site of the Old Thumb Station. It is a 3-room log structure. A 2-room log snowshoe cabin was also constructed at the mouth of Blacktail Deer Creek. Both were constructed by ranger labor under the supervision of the Chief Ranger.

A log bunkhouse 16 x 24 and a log stable 16 x 30 were built at Cub Creek for the use of the road crew at that place.

Cleaning of the Roadsides

The most important landscape work of the park was the cleaning up of the roadsides. This activity has been authorized by an eastern friend of the park system who visited the Yellowstone last year, and as a result of his personal observations developed a plan of action that he has authorized us to carry out at his expense. Already the roads have been cleaned from headquarters at Mammoth Hot Springs to beyond the Apollinaris Spring, and the interested friend has provided funds for continuing this work to Norris Geysir Basin. The need of roadside cleaning in Yellowstone Park interested me the first time I visited this park, early in the season of 1915. At that time I sought to have an estimate made of the probable cost of this work. It seemed, however, as if this was a project that would not be likely to be undertaken by the Government for many years to come, if ever. Hence, after two or three years of casual discussion of the need of this work, I dropped it. It was with great pleasure, therefore, that I received word of the interest of this man, who had so much public spirit and keen appreciation of the wilderness character of our mountain parks as to come forward with the news of doing this important work. I inspected the work done last autumn and found the roadsides as cleaned even more interesting and attractive than I had dreamed they would be.

General Landscape Improvement

In addition to the development of Apollinaris Spring considerable other landscape work of importance was undertaken during the year in Yellowstone Park. A new snowshed cabin, which may also be used as a summer ranger station, was designed by the landscape engineer and built by rangers at Lost Thumb. This pleasing structure brought forth much favorable comment from visitors to the park during the summer. Several vistas were cut under the supervision of the landscape engineer and he also laid out the course of the new telephone line that is being constructed between Norris Junction and the Lake Hotel, this being a continuation of the project begun last year. One must see the roads of Yellowstone with the unsightly telephone lines removed to appreciate fully what a tremendously fine piece of landscape work this new telephone construction is. By the end of this year the roads will be clear of telephone lines all the way from headquarters to the Lake Hotel and from Fountain Ranger Station to Old Faithful Inn. The connecting link between Norris Junction and the Fountain Station will be built next year.

Sanitation Department

This Department, in charge of Master Hunter William Higgins, cooperated closely with the engineering department in construction work, and was assisted constantly by the United States Public Health Service officers on duty here.

(1) Public Auto Camp Development.- Mammoth: Installed 8 showers, 4 for men and 4 for women, and put in hot and cold water and 2 wash basins. Built 90 tables.

Tray Falls: Installed 400 feet 6-inch sewer pipe. Dig cesspool and built 48 tables.

Lake: Enlarged water main - 2,000 feet 4-inch galvanized iron water pipe; 1,000 feet 3-inch pipe; 600 feet 2-1/2 inch pipe; 3,000 feet 1-1/2 inch pipe. Built one comfort station. Installed 8 flush toilets, 2 wash basins, 1 urinal and 13 drinking faucets. Built 57 tables.

Fishing Bridge: Enlarged water main - 4,000 feet 4-inch galvanized iron water pipe; 800 feet 3-inch water pipe; 1,000 feet 2-inch water pipe. Built two comfort stations. Installed 16 flush toilets, 2 urinals, 4 wash basins and built 100 tables.

Thurb: Enlarged water main - 4,200 feet 4-inch galvanized iron water pipe; 1,000 feet 2-inch water pipe; 100 feet 1-inch water pipe; 80 feet 3/4 inch water pipe, and 1,200 feet 6-inch sewer pipe. Built two comfort stations. Installed 16 flush toilets, 2 urinals, 4 wash basins, and built 50 tables. Built 50,000 gallon reservoir and pump house and installed a 40 h.p. Bufo water to operate a Worthington Telex Plunger pump which lifts water 120 feet elevation from Dick Lake. Capacity of pump 20,000 gallons per hour.

(2) Mosquito Control.- Many mosquitoes throughout the Park due to exceptionally wet season. Intensive ditching and oiling at the Canyon, Lake, Tower Falls, West Thumb, Upper Basin and Mammoth.

(3) Garbage and refuse disposal.- All dump grounds practically cleaned up. Tins and glass buried. Garbage, not eaten by bears, and paper, trash and wood burned. Special bear-proofing platform constructed at each dump ground. Data collected at Upper Basin, Lake and Canyon for incinerators and tin can crushers.

(4) Miscellaneous.-Operated 6 septic tanks with chlorinators and one without. Supervised operation of 2 swimming pools. Made special water supply investigations for Upper Basin, West Yellowstone, Norris. Prepared plans for sewerage systems at Thumb, Camp Roosevelt and Transportation Company at Gardiner. Inspected creameries and dairies supplying the Park.

Protection Department

The permanent personnel of this department consists of the Chief Ranger, J. T. Keating, 3 assistants, Chief Ranger and 27 park rangers. Fifty-two temporary park rangers were added to the force on June 16th, making a total winter strength of 82.

Winter activities: Regular and special patrols were held throughout the fall, winter and spring seasons for the

observation and protection of wild life and the natural features of the Park, wild animal feeding, predatory animal hunting, and repair and maintenance to buildings and equipment.

Ranger activities: Fire, fish and traffic patrols, information, guide and lecture service, travel statistics, checking travel at entrance and exit stations, and at public auto camps, police duties, and a wide range of other duties too numerous to mention here.

Forest Fires: No forest fires of consequence occurred during the year.

Trail Construction, Maintenance and Improvement: Twelve miles of new trail have been built consisting of 2 miles of saddle horse trail from Old Faithful to Mystic Falls, 4 miles of foot trail paralleling the loop road through Black Sand Basin, Fox Creek to Mariposa Lake, 3 miles, and about 3 miles in the Tower Falls District, including a foot bridge near Tower Creek. The Tower Falls job was accomplished by a small band of Eagle Scouts under the leadership of Mr. E. C. Buckley of Great Falls, Mont. The total trail mileage, exclusive of game trails used on patrol, is 87 1/2. The entire trail system has cleared of down timber and repaired.

Fish Planting: Fish planting activities this year with comparative figures for 1937 and 1938 are reported as follows:

	1923	1924	1925
Total collection of black spotted trout eggs from park waters	31,574,000	32,000,000	11,748,000
Number of eggs collected in park, hatched and returned to park waters or planted as eyed eggs	12,795,000	18,544,000	4,336,760
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<u>Total number of fish planted in park</u>			
Black spotted trout collected in park	12,795,000	18,544,000	4,336,760
Black spotted trout received from Montana State Hatchery	-----	-----	-----
	12,795,000	18,544,000	4,336,760
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Eastern Brook Trout received from Montana State Hatchery	100,000	49,400	
Rainbow Trout received from Montana State Hatchery	100,000	-----	80,000
Lock Leven Trout received from Montana State Hatchery		41,800	
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Total fish plants for year.....	12,995,000	18,635,200	4,416,760
Total shipment to outside points			6,726,000

Buffalo Ranch Operations

The activities at the Buffalo Ranch have consisted of the care and keep of the herd, hay harvesting, repairs and alterations to stables, fences and corrals, maintenance work on roads and telephone lines and other routine duties. Twenty-five acres

were plowed, cultivated and seeded to oats, timothy, and red top. 350 tons of hay were fed during the fiscal year ending June 30th. The yield for the season of 1925 was 1020,36 tons.

Buffalo Plains Week

A colorful pageant took place near the buffalo ranch in the Lamar River Valley from August 30 to September 6, when a western frontier round-up celebration was staged every day. The huge buffalo herd of over 700 animals, a score or more of Crow Indians from the nearby reservation dressed in the regalia and war paints of other days, and a few real western cowboys made the round-up a thrilling representation of the old days of the West. Visitors to the ranch during "buffalo plains week" as it was called, were taken from the ranch headquarters to the site of the round-up in the stage-coaches of former days, drawn by four and six horses. The Indian camps were of great interest to visitors. Typical camps with their teepees, open fires, travois, and handiwork of the tribe, and peopled with braves, squaws, and papooses, were a vivid reminder of the fact that not so many years ago the ancestors of these very Indians roamed and hunted over the lands in this vicinity.

Hay Ranch Operations

Wild animal and horse feeding at the various hay ranches during the winter and spring seasons accounted for approximately

662 tons of hay, and of this amount 52 tons were fed at Yancey's, 246 tons at Slough Creek and 264 tons at Gardiner. This year's tonnage cannot be accurately stated at this time for the reason that much of it has been recently stacked. The approximate yield, however, is as follows: Slough Creek 175.17 tons, Yancey's 75.48 tons, and Gardiner 99.07 tons, which, together with 1029.36 tons at the Buffalo Ranch makes an approximate total of 1379.58 tons. Further hay ranch activities during the year are noted as follows: 45 acres plowed, cultivated and seeded to oats, timothy and clover at Slough Creek and 50 acres plowed, cultivated and seeded to oats, timothy and clover at Yancey's.

Predatory animals

One hundred and eighty coyotes and 1 mountain lion were killed during the year.

Natural Features of the Park

Observations of wild life, geysers and hot springs activities, forests, flowers, birds, etc., have been made by the Park Naturalist and by anglers and are briefly reported as follows:

Wild Animal Conditions: Wild animal conditions have been generally good throughout the year; forage conditions are excellent.

Buffalo, Lamar River Herd: In January 1924 herd total was 673; the calf crop of 1923 was 122, making a herd total of 795 at the beginning of the fall season of 1924. This figure corrects an error of 27 in the reported herd total of last year which was occasioned by including a band of this number which should have been included in the count of the Cold Creek-Tellico Plate herd.

The losses during the year were as follows: Shipments 86, accidental 5, winter kills 1, killed by authority of the Director 17, total 109, leaving a herd total of 686 at the beginning of the calving season this year. This total consisted of 323 males and 363 females - the males consist of 162 bulls and 161 steers. Twenty calves of the 1924 crop were castrated. The calf crop of 1925 totals 112. Buffalo feeding was begun on December 28th and concluded on April 4th.

Buffalo - Cold-Creek-Tellico Plate Herd: The total count during the year was 66; this is the largest actual count in recent years. The estimated herd total is 125. There was a reported loss of one - a winter kill.

Mountain Sheep: Actual counts during the winter and spring seasons total 133. The estimated total for the year area is 500. The reported losses occasioned by hunters at ranges adjacent to the park was 6.

Antelope: Antelope conditions are excellent; the herd has wintered remarkably well. There was a loss of 4 during the year, consisting of 2 winter kills and 2 coyote kills. The herd total of late April was 417. There is every indication of a normal increase this year.

Moose: The moose counts submitted during the course of the winter season total 170, as compared with 121 last year; they are widely distributed. There were no losses reported during the year. There is an estimated total of 505 in the park.

Deer: Thousands counts have been submitted by rangers on patrol; the total of these counts is 602. This is believed to be about 1/3 of the total number of mule deer within the park and at points along the Yeloxians and Gallatin Rivers adjacent thereto. The reported losses occasioned by hunters beyond the park boundaries is 56. Other losses consisting of winter kills, coyote kills and accidents, total 35. The total of all reported losses is 91. There is believed to be not less than 1,000 mule deer in the park region. White tail deer are extremely rare. There are probably not more than 12 in the entire park.

Elk: The elk are in excellent condition and there is abundant forage for the approaching winter season. Winter kills during the year did not exceed 2 per cent of the herd total. The actual count was 347. Twelve hundred and eighty-eight

Elk: The elk are in excellent condition and there is abundant forage for the approaching winter season. Winter hills during the year did not exceed 2 per cent of the herd total. The actual count was 347. Twelve hundred and eighty-eight were reported slain by hunters at points adjacent to the Park. The losses from all causes were 1433. Careful counts of the herd were made late in April and the total of those counts was 17,242. The calf crop this year is unusually large and the estimated herd total at this time is 20,000.

As to the Jackson Hole elk, the Forest Service and Biological Survey officials in the spring of 1925 estimated the herd at 17,000, not considering this year's calf crop. Five hundred and fifty tons of hay were fed last winter to this elk herd but only 1700 elk had the feed grounds. There will be about 3500 tons of Federal and State hay available for feeding during the winter of 1925-26. The Igouk Gulch League has purchased 1700 acres of hay and pasture land near the Biological Survey ranch. The combined ranch areas total about 4500 acres, of which 1500 acres produce hay.

Black Bears: Black and brown bear are extensively seen throughout the Park. Mothers with cubs number from one to three frequent all the main elk ways and the feed grounds at the various hotels and camps. The total number of black bear in the park is believed to be about 200.

Grizzly Bears: Twenty-seven grizzlies were observed at

the Canyon Hotel feed ground on July 18th. Five have been frequenting the feed ground at Old Faithful and 7 were commonly seen at Lake. A total of 19 grizzly bears have been reported. There is believed to be not less than 75 bears of this specie in the park.

Beaver: Unusual beaver activities have been reported at all points suited to their requirements. There appears to be a normal annual increase.

Other Small Animals: Marten, mink, skunk, weasel, otter and fox were frequently seen throughout the winter season. Woodchucks, porcupines, badger, etc., are numerous at all points.

Birds: The bird life, as is to be expected, continues much as usual. The interest of tourists in bird life is marked and this interest is fostered by the collections and drawings in the Museum and by the lectures on the park's rich wild life. Several sets of eggs, new to the collection, have been added.

The Roosevelt Wild Life Department Station, Syracuse University, this year published a book on the birds of Yellowstone Park by H. W. Hensler. This is a very valuable contribution to the literature of Yellowstone Park. The book is illustrated with color plates showing many of the common species of birds of the Park.

Flowers: The season was particularly favorable for flowers and the latter have been among the outstanding attractions of

the year. The collection of fresh flowers on the Museum porch has attracted a great deal of interest and increased the Museum attendance and doubtless the sales of literature. The pressed flower collection in the Museum has also been enlarged and thus made more attractive and effective.

Insect Infestation and General Forest Conditions

Closely related to our task of preserving the landscape of the park is the necessity we have recently faced for attacking several insect pests in the forests. These threaten to destroy several miles of timber along the roadsides near the western entrance and in the vicinity of Camp Roosevelt. Under the special appropriation granted by Congress for the control of insects, the lodgepole pine forests along the west approach road were again sprayed, and it is believed that this timber did not suffer further injury this year.

As to the spruce budworm which is defoliating the spruce and Douglas fir timber, in the Hallspring and Crescent Hill areas, this insect was not so active this year and did not quite reach the road. Preparations were made for spraying the timber along the road had the deadly budworm advanced that far.

Successful attacks have also been made on several infestations of bark beetles.

The Bureau of Entomology cooperated closely in this work, and throughout the summer kept one of its most skillful specialists at work on the various control problems.

Geyseers and Hot Springs

Marathon Hot Springs: Jupiter Terrace shows a normal flow of water, but fewer basins filled than usual. Mount Terrace was very active at all points. The new terrace behind Mount retained its attractive coloration of last year and built up rapidly. No change in Minerva and Cloacipatin Terraces. Angel Terrace showed a slight increase of activity, yet is nearly dead. The New Highland Terrace, which became active early in the spring of 1935, was one of the most beautiful features of the Marathon Springs area. The flow of the "White Elephant" gradually moved southward along the fissure line. Harrow Geyse is practically extinct. Canary Spring is as usual. No change in Hyacin Terrace. A new spring beside the roadway near Hyacin Terrace showed considerable activity in May and June, but has since ceased to flow.

Harris Geyseer Basin: The Constant last played on the 13th of July. Had also played on the 13th of July. Valentine played about twice each week. The new geyseers have been noted about 20 years, northeast of Constant. Their periods of activity have been, respectively, about 14 and 9 hours. The other geyseers have been as usual.

Lower Geyser Basin: A cloud of steam has been seen to rise from National Park Mountain about every 20 minutes following rain; less often various other steaming places have been noted. An interesting hot water region in the Firehole Canyon will be made available to tourists by the completion of the new road, as expected in 1926. The general activity is about as usual, no change being observed in the Crowler, Paint Pots and so on. The first eruption of Fountain Geyser observed in two years occurred on July 4.

Upper Geyser Basin: Conditions have been about as usual since June 21 when a new vent was first observed in the Giant Geyser.

West Thumb: Unusual conditions were observed about 7 A.M. June 21. The roadside pools filled rapidly; geyser action increased. In one large pool previously inactive the water rose 5 to 20 feet. The periods were frequent for two days. Small geysers formed in some large pools. No marked change since that time.

Information Department

42,948 people visited the Information Office at headquarters during the season; 2,706 in June, 25,175 in July, 12,725 in August and 2,162 in September; compare the total with 32,677 during the season 1925 and 37,822 during the season of 1926. 21,070 free publications were distributed

at the information Office and ranger stations in the Park and 8,000 Government publications, including 2,291 portfolios were sold. Compare this total sale with 2,501 Government publications, including 874 portfolios, disposed of last year. In addition 1,187 books of other publishers were sold.

Lecture Service: This service at Mammoth Hot Springs consisted of 3 lectures each evening before audiences totaling approximately 72,160. Lectures were similarly conducted at Old Faithful and Tower Falls and were attended by approximately 40,222 persons at Old Faithful and 1,194 persons at Tower Falls; as compared with 62,000 at Mammoth and 36,000 at Old Faithful last year.

Guide Service: The regular guide parties were conducted twice daily over the formations at Mammoth Hot Springs and Old Faithful. Special guide service was also furnished at these points upon request. The season total of the guide parties at Mammoth Hot Springs was 14,256 and 31,222 comprised the season total at Old Faithful; the guide party total at Tower Falls was 1,108 as compared with 11,108 at Mammoth, 27,701 at Old Faithful and 1293 at Tower Falls last year.

Electrical Department

Electric System: The following table shows the total

production of the power plant and disposition of current as compared with similar data for the fiscal year 1924.

The peak load for the year was 164 kilowatts as compared with 124 kilowatts last year.

	1923-24	1924-25
Total production in kilowatt hours	451,022	600,690.00
Sold to park utilities	85,703	109,126.67
Consumed for street lighting	25,786	21,086.00
Balance, consumed by Government buildings, for power and lighting, lost on lines, etc.	351,533	479,467.33

On account of the increased load it has become necessary to run two machines continually during the Park season.

The interior of the Power Plant was kalsomined in April, 1925.

Telephone system.- A new telephone line between Morris Junction and Lake Hotel was constructed by the Yellowstone Park Hotel Company and National Park Service. Twenty-five foot cedar poles and 4 pin fir cross arms were used. Between Morris Junction and Canyon Junction 8 wires were placed which provides two metallic circuits and one phantom circuit for the Hotel Company and the same for the Park Service. Between Canyon Junction and Lake Hotel four wires were placed, making two metallic circuits and one phantom circuit. The new line was located out of sight in the timber wherever

possible. Corners were double armed and poled, and other first class construction methods used. The completion of the new line permitted the dismantling of the two old unsightly lines that have been eye-sores on the landscape for many years.

Telegraph and Telephone Statistics

Telegrams

(Telegraph Office discontinued September 30, 1924)

	1923-24	1924-25 (3 Mos.)
Government sent.....	1,198	338
Government Received.....	744	236
Commercial sent.....	1,563	648
Commercial received.....	1,146	292
TOTAL.....	4,641	1,514

Telephone Calls on Government Switchboard

Government local lines.....	74,296	96,203
Hotel Company lines.....	8,320	11,775
Long Distance Connections...	3,184	5,452
TOTAL.....	85,800	111,430

Painting Department

The Master Painter and his assistants painted Sylvan Pass Ranger Station, and Upper Basin Mess House was creosoted. Approximately 1000 signs were made, painted, repaired and touched

up. Thirty-four trucks and motor sprinklers, 2 passenger cars, 22 road graders, 60 dump wagons, 10 horse drawn sprinkler wagons, and 4 spring wagons were painted, lettered and numbered. Three wards in the hospital, including furniture, and several sets of quarters were painted and re-decorated. Twelve roofs were painted at Mammoth; also fire equipment and fire hydrants.

Mechanical Department

The mechanical department made repairs to all trucks in use; overhauled 34 trucks, 4 touring cars, 1 Caterpillar, 1 steam shovel and 1 compressor, and made six new freight bodies for F. A. B. trucks. The blacksmith overhauled 62 dump wagons, 16 road graders, repaired small equipment of all kinds, and did horseshoeing. The shop crew built 35 camp toilets and 330 camp tables.

Property and Transportation

Under the direction of the Steward & Master of Transportation, 2752 tons of material, equipment and supplies were moved from railroad terminals to headquarters. From headquarters 11 trucks were operated through the park supply road camps, construction camps, etc. The total mileage of the trucks was approximately 60,000. A number of 16 men were engaged in the warehouse and in the Transportation work (61,997.92 ton miles hauled).

Improvements By Public Utilities And Individual Operators

Yellowstone Park Camp Company-Mammoth: Reconstructed 130 permanent lodges with new window frames, new door casings, and replaced all old canvas with new boards; painted above lodges, also 6 other buildings in the Camp; erected one new flush toilet building and equipment; platted new lawn in front of Main Building with grass, trees and shrubbery; extended water lines to remote parts of camp; enlarged stage in recreation hall.

Old Faithful Camp: Constructed new delicatessen and lunch counter building, in the public automobile camp; installed 25 one and two-room tent lodges in automobile camp; constructed 25 one and two room, all board and pole lodges in Old Faithful Camp; built pergola between the lobby and main dining room; erected a pole and canvas awning over loading platform; extended water lines in parts of camp not heretofore supplied.

Lite Camp: Reconstructed 30 tent cottages into permanent pole and frame lodges; installed wire windows in all dormitories; made addition to old kitchen; erected pole and canvas awning over loading platform. Commenced construction of a new log and frame building, 60' x 164'.

Canyon Camp: Constructed a large lobby 35 feet wide by 175 feet long, with extensions to this building of a space

about 30 feet wide and 55 feet long for a curio store; also an addition to the new building, 30 ft x 45 ft for use as a writing room. Constructed a building 30 ft x 90 ft used as a service building, housing rooms for men and women's flush toilets, barber shop, dispensary, general work office, storage rooms, etc. Extension to dining room about 40ft x 60 ft; boiler capacity doubled; 12 new one and two room permanent lodges of frame and pole were constructed; lunch counter was added to delicatessen; 24 one and two room canvas and frame tents were installed near Canyon public automobile camp.

Camp Roosevelt: Work at this camp was in the nature of improvements to lodges built in past years.

Sylvan Pass Lodge: Constructed large sewerage system; constructed one outside men's flush toilet building fully equipped and connected with main sewerage system; rebuilt old bridge across Shoshone River; constructed a barn 16 feet wide by 30 feet long; considerable riprap work was done in the river to save water from washing into camp grounds; installed cable across the river to carry pipe line.

The Buffalo Jones Museum and Zoo.

An interesting development of the year in the Yellowstone, was the establishment of the little museum, relating primarily

to buffalo, in the old log cabin built by the famous "Buffalo Jones" over 20 years ago, when he was in charge of the newly acquired band of bison, which is now the magnificent Lamar Valley herd of almost 600 animals. In this little museum there has been assembled a very interesting collection of pictures of buffalo herds, hide and meat hunting expeditions, buffalo hunters, bison heads, hides and horns, and such other material reminiscent of early days in the West.

Back of the old Buffalo Jones cabin a zoo has been built, and it now houses four very tame bears, a badger, several coyotes, a pet buffalo calf, and a number of different species of birds. During the summer, 12 fine buffalo from the Lamar Valley herd were kept there on exhibition. This museum and zoo were visited by over 50,000 people during the summer.

Yellowstone Park Hotel Extension:- Herroth: New passenger elevator installed; new 400 gallon per minute fire pump installed; new 220 line Green Battery switchboard; telephone cable from Herroth Hotel to Mr. Child's and Mr. Michel's residences, thereby eliminating telephone poles in the vicinity of Liberty Gap; all telephone wires back of Herroth Hotel moved off of the hill; old wiring in basement replaced; 67 new radiators installed.

Old Building: 400 gallon per minute fire pump installed; entire base above reconstructed; new cold storage box for meat

and five other cold storage boxes installed; several new pieces of kitchen machinery installed; exhaust fan in kitchen installed; 25 radiators installed; the fire escapes extended to ground and additional fire escape built on rear of old wing; new carpenter and paint shop built; old plumbing shop moved from rear of hotel.

Lake: 400 gallon per minute fire pump installed; plumbing installed in barber shop and buffet; new six ton ice machine installed; 500,000 gallon concrete reservoir now being installed; new toilets, basins and tubs for kitchen employees installed; new girls' dormitory completed last fall now in use.

Canyon: 400 gallon per minute fire pump installed; 40 radiators installed in girls' dormitory; entire exterior of hotel now being painted; a great deal of kalsoming and painting and fixing up old rooms has been done; plans being made to build a new men's dormitory at Canyon; additional fire escapes also installed.

Miscellaneous: About a thousand dollars' worth of new fire-fighting equipment, such as fire extinguishers, has been distributed between the four hotels. Joint telephone lines, for Hotel Company and Government, built from Norris to Lake.

Yellowstone Park Transportation Company: New storage garage at Gardiner finished last fall; new reinforced concrete

machine shop, new boiler house, bathhouse for employees and two residences at Gardiner. Ninety new buses, 5 new two-ton trucks, one new five-ton truck, several Ford roadsters and trucks purchased. Repair shop and tire shop built at Mammoth to replace building destroyed by fire on March 30, 1925.

Old Faithful: Old saddle horse sheds rounded. New hay shed and grainery built.

Canyon: Extension to mess house.

Yellowstone Park Boat Company: Ten new steel roadsters purchased.

J. H. Barnes, official photographer.-Grand Canyon: Constructed and outfitted picture shop in building adjoining new lobby of Canyon Camp. Installed two large water filters for use in removing organic and inorganic impurities from water used in photo finishing plants - one at shop near Canyon Junction and other at Mammoth.

Henry P. Brubaker.-Purchased and installed two bath tubs; also washing machine and extractor; laid 112 square feet concrete floor in laundry room.

Garrett Wittaker, merchant.-Completed part of Canyon Store started last fall - now used as a picnic table. Improved grounds in front of Canyon Store, hauling 60 loads of gravel for filling in. Store at public auto camp at Mammoth

rounded, using logs and panels for trimming. At Mammoth service station a new air pump was added. New fixtures were installed in Canyon and Mammoth stores.

C. A. Hamilton, merchant.- Enlarged Fishing Bridge store to double its former size, and put in a Dolco lighting plant. Built a 30' addition to Basin Auto Camp store. Completed knotted wood porch on Basin Store. Installed latest model liquid Carbonic fountain. Put in new National Cash registers and transferred old ones to Lake Store. Tax records were purchased to be operated jointly with the Best Company.

Fraser & Trisbakka - Park Curia Shop.- Extension to shop 40' x 50', making present store space 60' x 50'. Erected ice house and garage; enlarged kitchen and storerooms; added 5 bedrooms and bath for employees; repaired and painted old building and added office. Installed iceless soda fountain with 40 gallon capacity; new refrigerators; show cases; steam table and full equipment for serving meals.

Mammoth auto camp. Constructed log store with two rooms and bath for employees. Installed range, steam table and full equipment for delicatessen and meals.

General Educational and Manpower Activity

The only museum at Mammoth Hot Springs headquarters has expanded considerably during the year, especially after its

