

CHUCKANUT DRIVE IS SCENIC WONDER

Road in Whatcom County is Lure for Motorists.

VISTA HAS GREAT CHARM

People of Bellingham Are Proud of Their Unit in Big Chain of Washington Roads.

BELLINGHAM, July 8.—(Special.)—There is really no such thing as substitution in scenery. Nature has attended to that. No two perspectives are so alike that the one may take the place of the other. Nature, with infinite resource and variety, has laid out all her pictures so that each one is distinctive, as a whole and in detail, and points of seeming similarity are incidental.

"To one who in the love of nature holds communion with her visible forms," comparisons are unnecessary and preferences are inconsequential. The Cascades and the Selkirk may be as high as the Alps and as rugged as the Himalayas; the Scandinavian fjords may be as deep and as sharply chiseled as the channels of the inside passage to Alaska; the Thousand Islands of the St. Lawrence may be more numerous than those grouped in the Archipelago de Haro at the entrance to Puget sound; the Amazon may be longer and bigger than the Columbia—what do such differences amount to except for the purposes of geographical record? To have made the ascent of Mont Blanc does not mean that one must do the same with desire to climb Hood or Rainier.

Appeal to Memory Strong.

And yet, much of the charm of travel and adventure comes with the appeal to memory that is made by each new experience. When some new panorama is spread to view, the inclination toward reminiscence is almost irresistible. "That reminds me," pops into the thought of the spectator almost as quickly as it pops from the lips of the man at the club who is eager for his chance to spin the next yarn.

Many of those who have made the motor trip along the Chuckanut drive in Whatcom county instantly have related it to their appreciation of the beauties of the Columbia river highway. It's just as good, or it's better, or they don't like it quite so well. Chuckanut drive, as it passes under the wheels of the modern "gas-driven" chariot, is probably as good a place to rest as there has any where been laid—wide, smooth and safe. It skirts along the shore, generally at a high level, with many cuts through solid rock. It gives outlook upon a vista of wondrous attractiveness—a broad sweep of water, wooded shores, and distant mountains showing at its best toward sundown of a clear day.

People Proud of Drive.

The people of Bellingham and Whatcom county, who spent a lot of good money in its construction, are intensely proud of the Chuckanut drive. Those who now realize what a splendid investment was made in building the Columbia river highway will understand that feeling of pride. As part of the Pacific highway, the Chuckanut drive adds much to the pleasure of a motor trip to Bellingham. Four miles of it, north from Inspiration point, are within the city limits. It would be the means of daily delight to the people of Bellingham, even though no stranger ever came their way. But no wise stranger would willingly miss the pleasures of this route. It must always be one of the city's best advertisements.

Chuckanut drive was several years in building. It was surveyed about ten years ago, and the first grading and surfacing resulted in a narrow road, not more than 12 feet wide all there, but otherwise unattractive to travel. Then the people of Bellingham took hold of their end of the work in earnest. When they had completed paving to the southern city limits, at Inspiration point, the state stepped in and, with federal aid, laid the first concrete pavement in 1920. Three miles of it cost nearly \$35,000 a mile. Two other contracts were let in 1921 and late that year the work was finished for the 14 miles from Bellingham to Blanchard, in Skagit county, linking up with the Pacific highway, and becoming a main part of the continuous paved highway from Blaine, at the Canadian border, to Olympia, the state capital, and on southward.

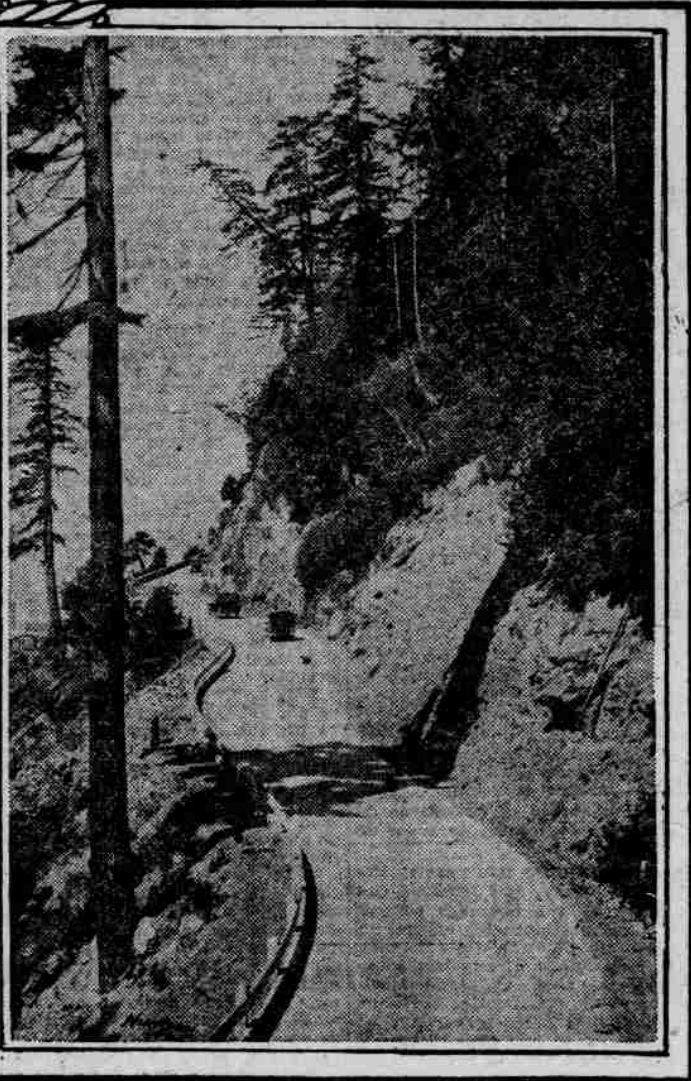
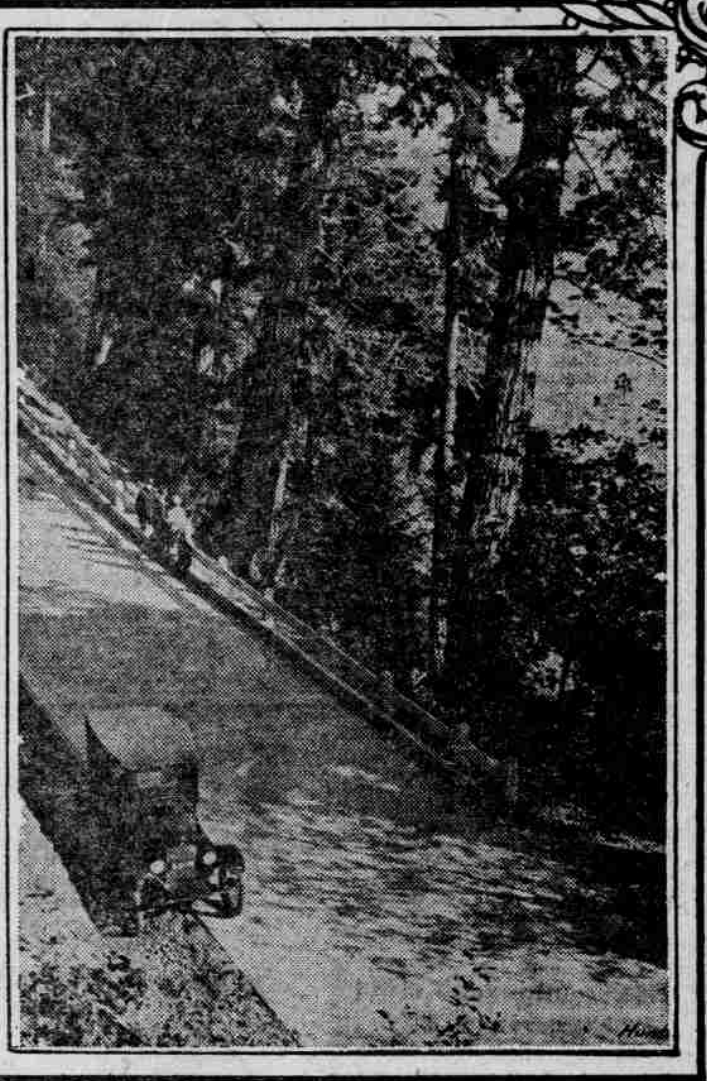
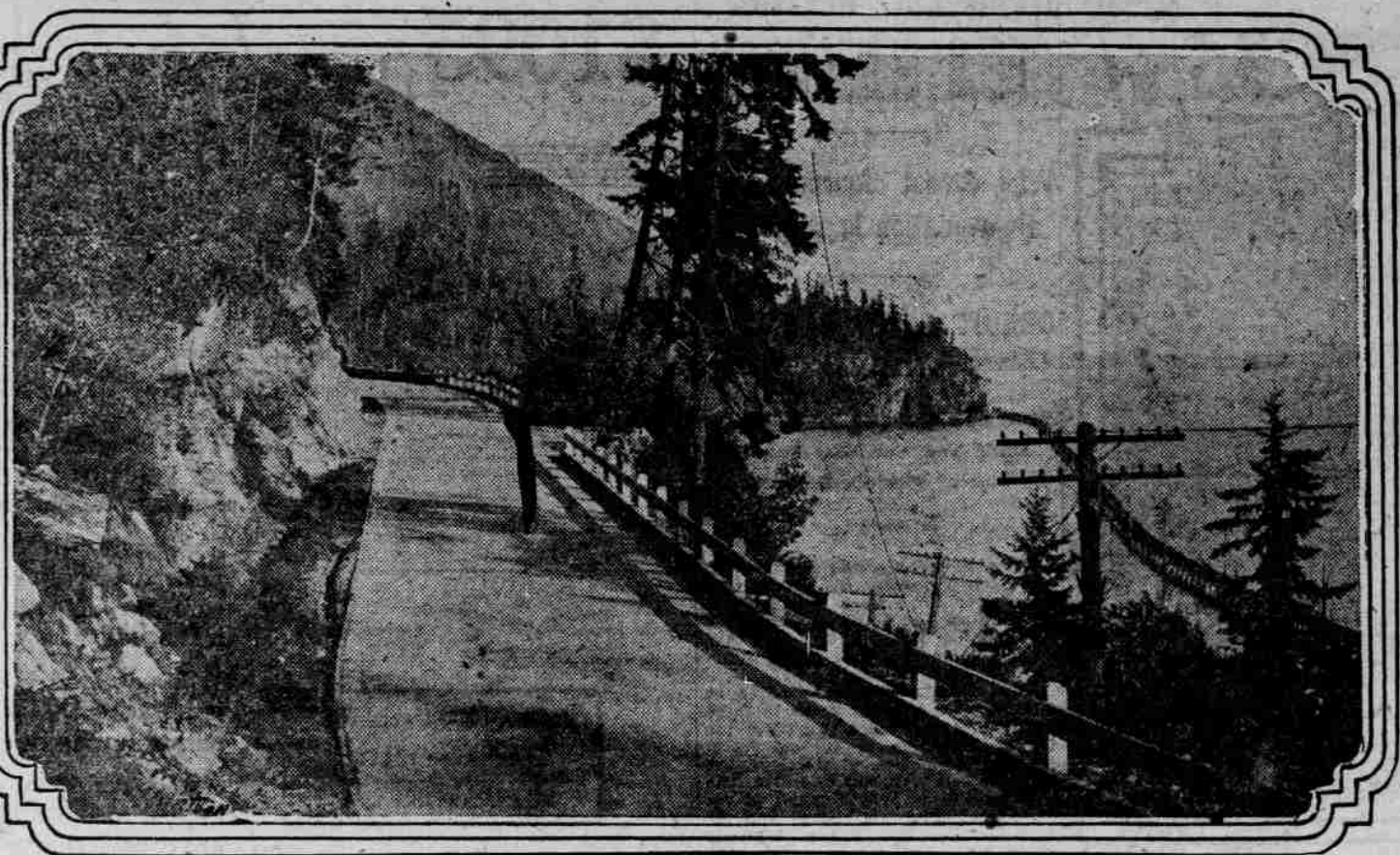
Many Points of Interest.

Points of interest are marked along the Chuckanut drive. At Inspiration point a lookout station built of rock sits at the edge of the precipice. Governor's tree, Lookout point and Harpin curve are other points of interest. All along the drive, except the last part, the view spreads westward over the vast harbor, taking in the islands of the Archipelago de Haro, or San Juan group, with northerly glimpses through sparkling channels that lead to the Georgian gulf.

With fine public spirit, and through voluntarily organized effort, the people of the city and vicinity are constantly at work on the beautification of the roadside. Wild flowers and the best of the native growth are everywhere encouraged; and other shrubs and flowers are making their appearance, including in springtime even the famous tulip for which Bellingham claims precedence over other American cities.

With this work done the people of Whatcom county are turning their attention to the development, by road-building, of other scenic resources. Towering above the Cascades in the eastern part of the county rises the peak of Mount Baker, and not far distant is the great glacier of Mount Shuksan. Numerous parties have scaled Mount Baker and found it not hard to negotiate. Shuksan is more difficult. The country in among the mountains is said to be a wonderland of vast meadows, many of them covered with flowers, mosses, and shrubbery of every hue.

CHUCKANUT DRIVE, NEAR BELLINGHAM, ONE OF WASHINGTON'S MOST SCENIC HIGHWAYS.



Above—Section of newly completed drive which borders Puget sound for several miles, leading into Bellingham. Below at left—Through a wooded section with occasional glimpses of Chuckanut bay. Below at right—Looking north toward the Gulf of Georgia.

pass. The whole highway of 62 miles will be of 20-foot width, mostly paved and the remainder well graveled. Ultimately it is the intention that the road shall encircle Mount Baker.

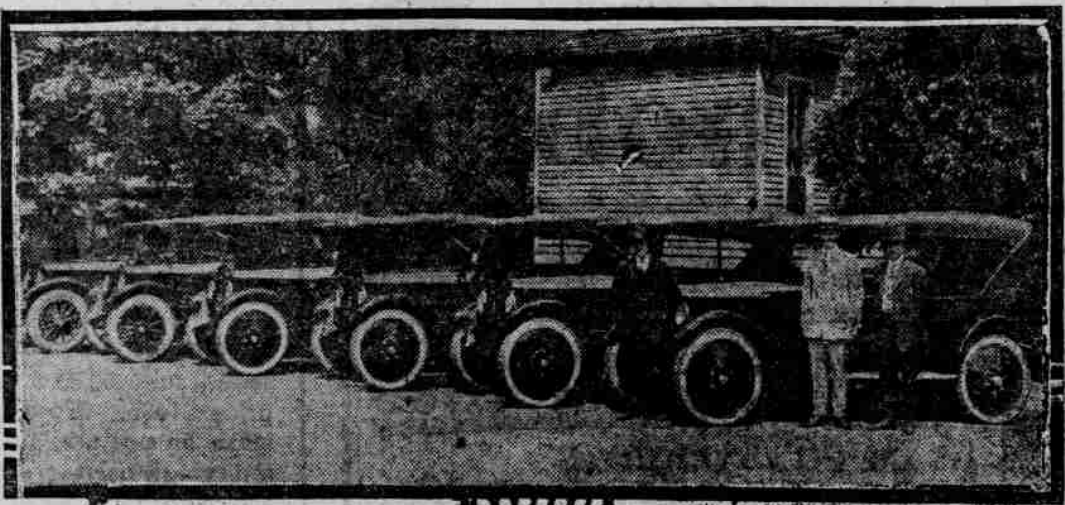
BIDDLE CUT-OFF FINISHED

Latest Section of North Bank Paving Ready for Use August 1.

Hard-surface paving on the Biddle cut-off, a stretch of 6.5 miles on the North Bank highway east of Vancouver, was recently completed. The pavement is concrete and will have to set 30 days before being used, however, so it will be around the first of August before the cut-off will be opened. Meantime the old road will continue in use.

This work completes the paving of the North Bank road from Vancouver to Camas, the entire distance being provided with a 20-foot concrete thoroughfare. The cut-off is on new location which was graded last year and it was necessary to allow the grade to settle a winter before paving. This explains why this stretch was not finished along with the rest of the road a little over a year ago. The new grade eliminates two railroad crossings over the Spokane, Powell and Seattle railroad tracks.

FLEET OF SIX NEW STUDEBAKERS TO ENTER "FOR HIRE WITHOUT DRIVER" SERVICE.



Light six Studebaker models purchased last week by Larry Sullivan for local "for-hire" service. The men in the photo are, left to right, Larry Sullivan, W. G. Oberbauer Jr., of the Studebaker corporation sales force, who sold the cars to Mr. Sullivan, and Mr. Sullivan's brother, J. R. Sullivan, who recently moved here from Texas to enter the business. Mr. Sullivan is temporarily located at Fifth and Taylor streets.

John Smith and His Car by Frederick Russell

No. 14—Meeting the Engine.

THERE are several ways for a motorist to spend a holiday. One is to see how far he can drive the car; another to see how much of it he can take apart. Smith decided to follow neither plan, and so spent the morning studying the more complicated points about the engine. I happened to be working on the motor of my own car at the time.

Furthermore, I had removed the cylinder head, so that the pistons, valves and cylinders were exposed to view—particularly Smith's view.

"Has my engine got all those things in it he asked in true greenhorn fashion.

"You've got all these—and more," I replied. "Your motor is the valve-in-the-head type; mine is an L-head motor."

"What's the difference?" "There is no difference in the combustion principle," I explained.

"Your engine has pistons which move up and down in their cylinders just as in my engine. Each piston is connected with a connecting rod which, in turn, is joined (with a bearing) to the crankshaft. Rotation of the crankshaft is accomplished by the motion of the pistons up and down in the cylinders. A flywheel attached to the end of the crankshaft maintains momentum. The crankshaft, by the way, always revolves in the one direction; when you reverse the car you simply mesh a small reverse gear in the transmission. Where our engines differ is in the position and arrangement of the valves. In my motor they open and close at the bottom of these pockets at the side of the top of the cylinders; in yours the valves operate upside down on the top

of the cylinder, or, to be exact, on the bottom, where the cylinder head is.

"You had better not explain the difference between the two types until you have told me what the valves are for," Smith said.

"The valves," I replied, "let the gas vapor in and the burned gas out of the cylinders. They must be timed to open and close at exactly the right moments. These short push rods in my motor raise the valves up and thus open them. Springs close them. The push rods are, in turn, raised by lifts on the camshaft which runs along the inside of the crankshaft parallel to the crankshaft. It is rotated by the crankshaft through a timing gear. In your motor all this is the same, only the push rods must be long in order to reach to the top of the motor, where each actuates a rocker arm, which, in turn, presses down a valve and thus opens it."

Smith wanted to know how often the valves opened and closed.

"Take this one cylinder, for example," I said, pointing to the one next the radiator while turning over the engine slowly with the hand crank. "The valve piston is now going down on what is called the 'intake' stroke. You will note that this valve which controls the passage to the carburetor is open. Gas vapor is being sucked into the cylinder. The valve closes now as the piston is at the bottom of its stroke. As it travels up both valves are closed. The piston is now compressing the gas so that it will be ready for the spark which comes as the piston reaches the top.

"Then when the piston reaches the bottom of the 'power' stroke the exhaust valve opens and as the piston travels up again the cylinder is cleaned out and made ready for the next stroke, the 'intake.' You see, there are four distinct operations of

the piston. That is why the engine is called a four-cycle.

"That's plain enough," Smith replied. "Now tell me why the valves are placed in a different position in my motor."

"That is a matter of engineering design," I explained. "The Knight type of motor has sliding sleeves with ports in them to act as valves. Another type has valves in the head like yours, but they rotate in order to open and close instead of popping up and down. Each type has its advantages and disadvantages. What engineers are striving for is a cylinder with the least waste area. When a cylinder is fired it is only the force against the piston head which does actual work. The pressure on all other surfaces is wasted. The ideal valve is one which is quiet in operation, that requires no adjustment and that will not be held open by an accumulation of carbon."

"I wonder how many drivers really understand these things," Smith asked when I had finished.

"The wonder," I replied, "is that so few care to know. You will find your afternoon drive more interesting now that you will have a new understanding of the machinery under the hood."

"Providing I don't have a puncture," Smith laughed.

I told him that that was something which happens to the best of drivers.

(Next Sunday—"Tire Talk.") (Copyright, 1921, Thompson Feature Service.)

New Jersey Starts Campaign. To make travel safe for motorists in New Jersey, 250 inspectors have been placed on the state highways. The campaign has started against reckless driving and violations of the state motor laws. Special attention will be directed against faulty brakes and other defective equipment.

The final test

The real value of a motor lubricant can be determined in only one way—through its use in the engine for which it is intended.

Hence this company maintains an engine-testing laboratory, equipped with a Sprague dynamometer, in which Zerolene and other lubricants are constantly being tested under actual operating conditions.

This dynamometer laboratory is in charge of competent, trained men, who spend all their time in conducting comparative tests of Zerolene and other lubricants in automobile, airplane, marine, truck and tractor engines.

Correct Lubrication Recommendations

On the results of these tests, supplemented by equally careful tests in the field and on the road, our Board of Lubrication Engineers bases its Chart of Recommendations.

Close attention is given to the design and construction of the engine. It is necessary to know, first, the speed of the bearing surfaces; second, clearance between bearing surfaces; third, temperatures at which bearings operate; fourth, pressures exerted in each bearing; fifth, the means provided for the distribution of the oil to each bearing.

The recommendations embodied in the Zerolene Chart are calculated with the greatest precision, and if Zerolene is used in accordance with them, correct lubrication and maximum fuel mileage are assured.

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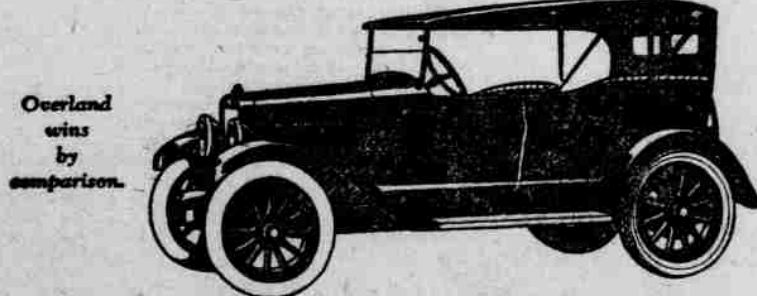
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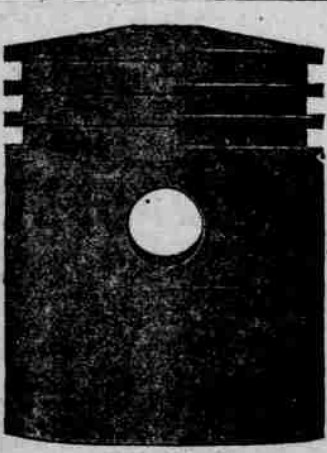
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