

BLUE BOOK HELPS

Pathfinders Responsible for Building of Good Road.

FARMERS BUILD HIGHWAY

Discussion Instituted by Scouts Mapping Out Route Results in Action by Residents When Authorities Hold Back.

In what measure the vast corps of scouts, pathfinders and data experts of the Automobile Blue Book work toward good roads development is known to few of the many thousands of motorists who annually tour by their printed instructions. Eleven months in the year these men

cars to economize, and real economy consists of buying a tire with an established reputation which will last longer.

A leading newspaper recently had a lengthy editorial on 'Gypsy tires and Gypsy tires,' in which it pointed out that buying an unknown tire was like buying a horse from a gypsy. "The buyer took all the chances with the percentage against him, and it was rarely that one of these unknown tires stood up and delivered the mileage. "Republic tires are made by the Republic process. This process, which is the exclusive possession of the Republic corporation, yields a rubber that is particularly tough and wear-resisting. We know that it makes Republic tires last longer than they are real economy at this time."

RAILWAYS COPY FROM AUTOS

Operation of Storage Battery on Locomotive Saves Power.

Railroad engineers have learned a lesson from the automobile electrical system which draws current from a storage battery to start the motor and for lights when not running and then uses the power of the motor to recharge the storage battery. The electric trains which operate in the Rocky Mountains draw current from the power wire while climbing a grade. When over the peak the driver cuts off the

VALVES' SET INITIAL

Few Realize Need of Frequent Adjustment of Lifters.

NEGLECT VERY FREQUENT

Best Engine Will Lose Power if Valves Are Not Given Proper Attention and Adjusted Whenever Necessary.

One seldom realizes the importance of correct adjustment of the valve lifters, yet the best engine in the world will lose power if these are not properly set. Since they are usually difficult to reach, dirty to handle and do not force themselves on the driver's attention,

Let us help you get a Dollar's Worth of Service for Every Dollar You Pay Out

Allen & Hebard Co.

Where YOU Get VALUE RECEIVED

You will get QUALITY and SAVE MONEY when you purchase one of these inner tubes. BEST GRADE FIRST TUBES, purchased direct from factory. Every tube FULLY GUARANTEED by the makers as well as ourselves. Only our ability to purchase a very large quantity for cash enables us to quote such LOW PRICES IN FACE OF AN ADVANCING MARKET.

Get yours at once, as only a limited number go at this price:

	Gray.	Red.		Gray.	Red.		Gray.	Red.
30x3	\$2.73	\$3.19	33x4	\$4.33	\$5.08	35x4 1/2	\$5.59	\$6.73
30x3 1/2	3.07	3.68	34x4	4.48	5.24	36x4 1/2	5.63	6.88
32x3 1/2	3.27	3.79	35x4	4.65	5.40	37x4 1/2	5.92	7.25
31x4	4.00	4.74	36x4	4.78	5.55	35x5	6.90	8.73
32x4	4.17	4.98	34x4 1/2	5.49	6.55	37x5	7.10	8.44

PORTLAND MEN, PORTLAND CAPITAL. Our aim is to REMAIN IN PORTLAND and sell you a tire that will give you such SERVICE that you will be MORE THAN SATISFIED.

Racine Cord and Fabric Tires are carried in all popular sizes. This is a HIGH-GRADE tire, MADE STRONGER TO WEAR LONGER, guaranteed and adjusted on 5000 miles.

RACINE RUBBER COMPANY LIST PRICES APRIL 23, 1918:

SIZE.	Plain Casings.	Country Road Casings.	SIZE.	Plain Casings.	Country Road Casings.	SIZE.	Ribbed Cord Casings.	Nonskid Cord Casings.
28x3	\$14.85	\$17.35	35x4	\$36.20	\$41.45	32x3 1/2	\$43.80	\$46.60
30x3	15.85	18.60	36x4	38.80	41.85	31x4	52.70	57.25
30x3 1/2	20.55	23.70	37x4	42.35	48.40	32x4	55.55	59.55
31x3 1/2	21.75	24.85	32x4 1/2	43.55	52.25	33x4	57.10	60.85
32x3 1/2	23.95	28.05	34x4 1/2	44.50	53.25	34x4	58.60	62.45
33x3 1/2	27.65	31.60	35x4 1/2	45.95	54.00	32x4 1/2	62.65	66.70
34x3 1/2	28.90	31.65	36x4 1/2	48.60	56.50	33x4 1/2	64.40	68.40
36x3 1/2	31.30	36.30	37x4 1/2	48.15	57.25	34x4 1/2	65.95	70.25
31x4	26.75	30.80	37x5	50.75	59.60	35x4 1/2	67.50	71.95
32x4	31.55	36.30	38x4	56.75	66.15	36x4 1/2	69.20	73.70
33x4	32.20	38.25	39x4	58.65	68.20	37x4 1/2	73.20	81.15
34x4	34.40	40.50	40x4	58.30	69.85	38x4	82.05	87.85
35x4	35.25	41.10	41x4	59.95	71.50	39x4	83.95	89.55
						40x4	85.80	91.50

HERE ARE A FEW EXCEPTIONAL BUYS IN WELL-KNOWN STANDARD MAKE TIRES:

32x3 1/2, Plain \$16.20
 32x3 1/2, Non-Skid \$17.15
 30x3, Non-Skid, 4000-mile \$19.95
 30x3 1/2, Non-Skid, 4000-mile \$19.95

30x3 1/2, Non-Skid, 7500-mile \$24.60
 34x4 1/2, Plain, 3500-mile \$29.55
 34x4 1/2, Plain, 3500-mile \$30.35
 34x4 1/2, Ribbed Cord \$30.35

Reliners made from tire fabric, practically doubling the strength of your tire if used at the proper time, will give much added mileage. Not the cheap reliner that is usually put out by mail order houses, but every one guaranteed fully.

	Reg. Price.	Our Price.		Reg. Price.	Our Price.		Reg. Price.	Our Price.
30x3	\$4.00	\$1.83	33x4	\$4.70	\$3.30	35x4 1/2	\$5.60	\$4.10
30x3 1/2	4.20	2.07	34x4	4.80	3.39	36x4 1/2	5.70	4.25
32x3 1/2	4.40	2.38	35x4	4.90	3.50	35x5	5.80	4.60
31x4	4.55	2.85	36x4	5.00	3.70	37x5	6.00	4.98
32x4	4.60	3.10	34x4 1/2	5.50	3.94			

\$6.00 Allowed for Ford Wheels in Exchange for Demountables.



Easy to Apply No Holes to Bore

"DUPLEX"

CANTILEVER SPRING SYSTEM FOR FORD CARS

Per Set of four, \$15, Our Price \$12.85

Guaranteed for Life of Car, or money back if not satisfied

Firestone Demountable Wheels With Extra Rim \$24.00

"RIGHT" Mechanically in Action and Construction

No automobile man or machinist can afford to be without the HURLEY ADJUSTABLE WRENCH, SPECIAL, 75c. Stands more abuse, serves more purposes, quicker and easier to adjust with one hand, fits any ordinary size spark plug. Best for light jobs, under car, on pipe or nut.

GET MORE THAN JUST A SPOTLIGHT for the same money. Makes tire changing and repairs as easy by night as by day. Sole distributors in Oregon, Washington, Idaho and Montana of the famous

AUTOREELITE

Spotlight, trouble light, pleasure light on a reel, with rear view mirror. Prices \$8 to \$9.50. Liberal exchange allowance on your old spotlight for a short time only. Dealers write for prices.

FISCHER AUTO BED

Converts your automobile into Pullman sleeping compartment. It is a bargain at \$18. In ordering be sure to state name and model of car.

HERE ARE A FEW OF OUR MANY BARGAINS:

5-Gal. Cans Monomobile Oil \$4.05	Radiator Cement 20c	Ford Radiator Hose 10c
1-Gal. Cans Monomobile Oil 85c	Soapstone 9c	Ford Rubber Pedal Pads... 38c
1/2-Gal. Cans Monomobile Oil 45c	Ford \$14-\$17 Seat Covers... \$8	Ford Steer's Rod Anti-Rat'r 25c
Bulk Oil, 65c gal. Bring your can	Ford Top Boot \$2.10	Ford Radiator Anti-Rat'r... 35c
1-Lb. Cans Sp'l Cup Grease 18c	Ford Gen. Leather Fan Belts 30c	Ford Hub Caps, brass..... 16c
Cementless Patches 30c		Ford Hub Caps, nickel 18c

COMPLETE STOCK FORD PARTS—ORDER BY NUMBER

While it lasts, Paint at less than cost. Job lot soiled labels, cylinder enamel, black or gray, 1/2-pint cans 19c, 1-pint cans 30c, 1-quart cans 48c. No better enamel on the market.

ROBERT E. ALLEN, President.

Telephone Broadway 3223

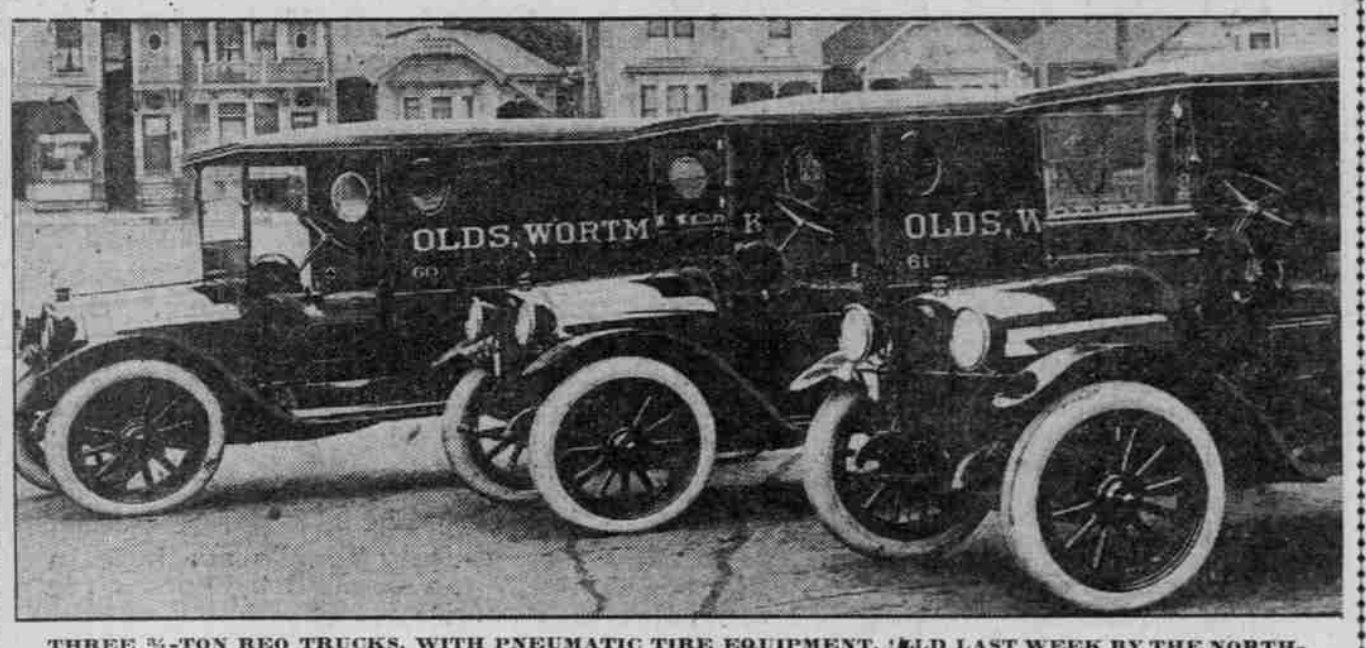
Allen & Hebard Co.

64-66 BROADWAY

LOCKWOOD HEBARD, Sec.-Treas.

Portland, Oregon

BIG DEPARTMENT STORE ADDS REO SPEED WAGONS TO ITS DELIVERY FLEET.



THREE 1/2-TON REO TRUCKS, WITH PNEUMATIC TIRE EQUIPMENT, WERE LAST WEEK BY THE NORTH-WEST AUTO COMPANY TO OLDS, WORTMAN & KING.

are the Christophers Columbus of touring. They are explorers, seeking the best roads, but finding the bad roads as well, so that tourists may know the best way to go from anywhere to somewhere else. They search out the treacherous, impassable road with as much care as though it were a new boulevard highway.

For them, which way the tourist should not go is as important as what road is newest and best. And so, while they chart which roads are finest they make it obvious for the Blue Book

current and the electric motors act as generators which deliver current over the wires to storage batteries in the substations where the train coasts down the grade. The operation of the generators on the locomotive not only stores up power, but acts as a brake which checks the train on the down grade.

MILLER TIRES HOLD UP

UNIFORM CORDS COMPLETE TEST COVERING LONG DISTANCE.

Big Pierce Arrow Used on Endurance Run on Which Tires Make Remarkable Mileage.

Four big travel-stained Pierce-Arrow cars rolled into the garage of the Miller Rubber Company, of Akron, the other day, thereby ending a 79,000-mile endurance test of the Miller uniform cord tires. It was the most exhaustive road test this particular product of the company had ever been subjected to and the result is said to have been very encouraging to the Miller organization, according to word just received by the Northwest Auto Company, Miller distributors here. Leaving Akron on the 30th of December, the drivers had instructions to "give the tires the limit" in the way of abuse and hard wear. The fleet of four cars, two of which weighed 6000 pounds each, immediately headed for Orlando, Fla., where the warm winter sun was to add further strain on the hard-working tires.

Day in and day out, over city streets and sharply winding country roads, in rain and shine, the heavy cars plunged forward on the Miller cords. In spite of the stiff grind—more severe than the average car will see in a lifetime of service—some of the tires attained a mileage of more than 15,000 miles, while 7000, 8000 and 10,000 miles were common.

The "benefit derived by road testing," explained Frank C. Millhoff, general sales manager of the company, "lies in the fact that it soon shows up weak spots in the tire before they become a liability. We know that road testing would soon reveal the strength or weakness of our cord tire building methods."

The idea of employing in the building of this particular product only those men of at least 10 years' experience in tire building, and of checking up on the personal efficiency of the tire, is, however, and that was an extraordinary high and uniform mileage. That aim has been accomplished.

Don't tamper with your carburetor unless you know it is out of adjustment, and not even then unless you know just what you are doing.

they are neglected until the trouble becomes really serious.

Of course, if they become noisy, the knocking is so noticeable that the owner is forced to make adjustments immediately. But ordinarily these parts receive scant attention, and so the loss of power is attributed to either the carburetor or ignition, until a thorough overhauling of the motor leads to the discovery of the real trouble.

Adjusting the Valves.

As aforementioned, they may become noisy, due to the fact that the space becomes too wide. As they rise they give a hammer blow to the valve stems, causing a knock which may readily be heard. By stopping the motor, removing the valve cover plates and shaking them up and down the ones out of adjustment may readily be located. Sometimes several are at fault, so, while about it, set all of them. Examine the adjustment carefully to understand it, for much damage may be caused by twisting the wrong nut. One is locking nut, which must be loosened first. The adjustment nut is then set to the right distance and the locking nut fastened.

The opening should approximate one-sixty-fourth of an inch for exhaust valves and three-one-thousandths of an inch for inlet valves. Use an ordinary business card as a gauge for the exhaust valve clearance. If, if possible, to have a card the right thickness, it is best to do so. This can be readily measured with a micrometer. A piece of note paper is about right for inlet valve clearance.

It will be found difficult to adjust the space correctly unless the following directions are followed: Place the desired gauge in space and screw adjusting nut until it touches. Now unscrew it either one-sixth or one-fourth turn. Then lock the nut that holds it in place. Try the gauge and see if it has just a slight friction.

Clearance Must Be Right. The reason for unscrewing the adjusting nut is that the locking nut pushes it up and so throws the adjustment out of true. If the clearance becomes too great the valves open late and close early.

Since they should move exactly as the designer intended, it is evident that the engine will lose power if both ends of a stroke are cut off. If the clearance is too small the engine will lose compression and with it a great deal of power. This is due to the fact that as the engine heats up the valve stem lengths.

As they grow longer they use up the space between valve stem and valve lifter. If the space is too small the valve stem rests on the valve lifter. As it lengthens the head of the valve is lifted off its seat in the cylinder, opening the valve and so losing the compression.

It will be evident from this that valve clearance is one of the most important things about a motor and one that should be borne in mind and inspected whenever one looks for causes of lost power.

Don't attempt to start motor with any of the transmission gears in mesh. Have gear shift lever in neutral.

OFFICIAL ROAD INFORMATION

United States Forest Service Bulletin Gives Data, Compiled by Field Men, on Condition of Oregon and Washington Roads.

This road bulletin No. 9 contains general information concerning road conditions in or near the National Forests of Oregon and Washington, based on data furnished by the field men of the Forest Service.

Drop no burning matches or tobacco, urges the Forest Service in the Bulletin. If you have a campfire, build it away from logs, trees or rotten wood. Scrape a clean strip around it, digging down dirt. When you leave, put it out. If no water is available, use dirt.

Western Oregon. Willamette Valley-Cascade Mountain wagon road is in fair condition between Foster and Upper Soda. Closed between Upper Soda and summit of the Cascade Mountain. A few wagons have made the road between Upper Soda and the summit, but it is unsafe for travel because of poor conditions of bridges. The river must be crossed by two ferds, which are not very safe.

Hebo-Newkown—Open and in fair condition entire length, with some rough places. Tillamook-Willamina—Open and in fair condition between Tillamook and Willamina. The road is now in permanent summer condition.

Dead Indian—Open between Pelican Bay and Ashland. Passable for auto by making short detour around fallen tree.

Klamath Falls-Crater Lake—Open between Klamath Falls and Crater Lake, but in poor condition.

Crater Lake Road—Open and in good condition.

Barlow-Oak Grove Road—Open and in good condition. Portland to Rhododendron. Passable. Rhododendron to Government Camp. Closed by snow and windfalls between Government Camp and forks of Clear near Clear Lake. Open, but rough. Clear Lake to Cedar Burn. Good condition Cedar Burn to Wapinitia.

Eastern Oregon. Sparks-East. Eagle Park—Open and in good condition, entire route.

Baker-Cornucopia—Open and in good condition.

Baker-Prairie City—Open and passable for all vehicles, but in poor condition.

Milton-Oregon—Open and in good condition between Milton and Spring Hill. Closed by snow beyond Spring Hill. No detour possible.

Herdman-Spray—Open and passable for machines entire route.

Prineville-Mitchell—Passable between Ochoco Station and Wheeler-Crook county line. Open and in excellent condition between county line and Beaver Range Station.

Closed through Bridge Creek Canyon, but passage may be made by detour through Meyer Canyon. Should be open by June 15.

Western Washington. Cascade Scenic Highway—Open from Coast towns to Sultan. Closed between Sultan and Tye for construction work. Detour impossible.

Sunset Highway—Open and in good condition from Seattle to Snoqualmie Pass. Fair condition Snoqualmie Pass to Lake Keechelus. Good condition Lake Keechelus to Easton and Cle Elum. Mudholes near the pass are drying rapidly and road should be in good condition entire route soon.

and in good condition Arlington to Porton. Fair condition Porton to Darrington.

Olympia Highway—Open and in good condition between Olympia and Quinalt Lake. Open and in fair condition between Olympia and Discovery Bay. Good condition Discovery Bay to Fredmont. Good condition Fredmont to Mora and Forks.

Eastern Washington. State Road No. 4—Open and in fair condition between Republic and Tonasket.

Blewett Pass Highway—Open and in poor condition Cle Elum to Wenatchee.

State Road No. 10—Open and in good condition Rialto to Pateros.

Cle Elum and Eastern County Road—Open and in good condition.

State Road No. 8—Open and in fair condition between Crescent and western boundary of Skamania County. This is an earth road, surfaced a portion of the way with gravel.

Adjusting Distributor Points. Distributor points must be adjusted with a wrench especially devised for that purpose. It embodies a steel finger or thickness gauge to be inserted between the contact in open position on any of the contacts. In other words, this steel finger is the exact width of the correct opening between the point and the segment.

Motorists who use one of the hand pumps will do well to give the pump a few strokes before attaching it to the valve. This blows out any grit or other foreign matter that may be clinging to the pump valves, preventing their finding their way into the inner tube.

EVER TIGHT INTRODUCED

MUCH CLAIMED FOR PISTON RING NEW HERE.

Right-Angle Interlock Makes It Non-Collapsible and Gives More Power, Is Declared.

The Ever-Tight piston ring, a three-piece ring with novel mechanical features, is being introduced to the Pacific Coast trade through a national newspaper advertising campaign.

The ring, which has been on the market for six years, is well known to the trade in the Middle West and Southwest, but has only recently been exploited in the Pacific Coast market.

The novel feature of the ring is a combination three-point radial expansion and right-angle interlock.

They claim that elementary mathematics teach that a plane is determined by three points, never any more and never any less, and that uniform pressure cannot be secured with a one-piece or two-piece piston ring, or that either one or two points can possibly seal themselves.

They claim that the perfect elasticity

of their product, together with their three-point radial expansion, insures an even distribution of pressure, secured by no other ring, and that they can be installed and successfully used in out-of-round cylinders.

The right-angle interlock provides a square seat and an absolutely non-collapsible ring with a minimum amount of friction, which guarantees against wastage of power and fuel.

Nearly every automobile owner has at some time had more or less trouble with his motor on account of oil passing the rings and getting on the spark plugs, causing the motor to miss firing and also loss of power, resulting from the compressed gas blowing by the old-style one-piece piston rings, all of which, it is claimed, is stopped by the use of a ring of this construction.

An interesting booklet, entitled "The Piston Ring Primer," gotten out by the Ever-Tight Piston Ring Company, of St. Louis, Mo., will be sent to anyone upon request.

Rules of the Road.

The Government's rules for motorists covering the roads in the National parks require that, in passing a team on a mountain road with a steep grade to one side, the motorist must always take the outside of the road, whether it be to the left or right. This is the rule of safety and courtesy on all little-traveled mountain roads.—Milestones.

Phone your want ads to The Oregonian. Main 7076, A 6025.