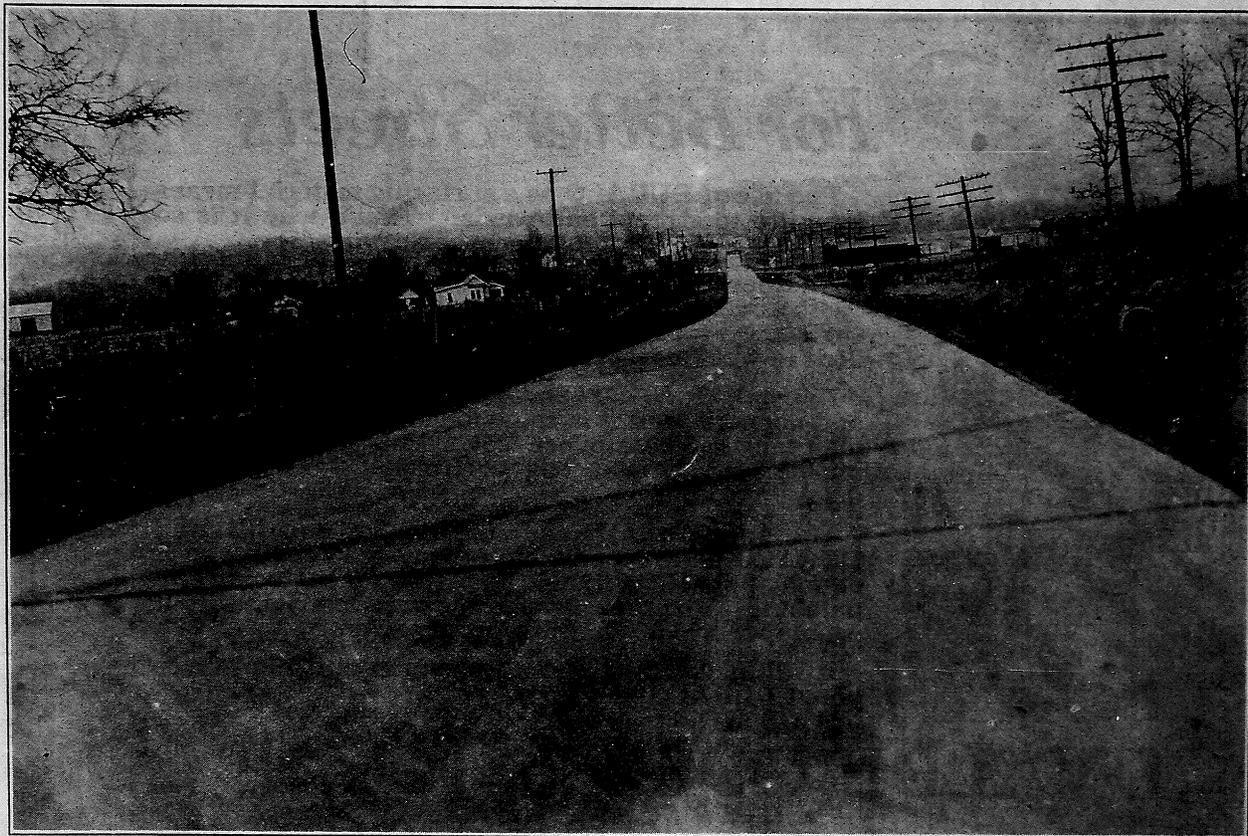


ARKANSAS HIGHWAYS

The Official Magazine of the Arkansas
State Highway Department, Little Rock



A Stretch of Highway 71—Project 36-A—Entering Fayetteville from the South

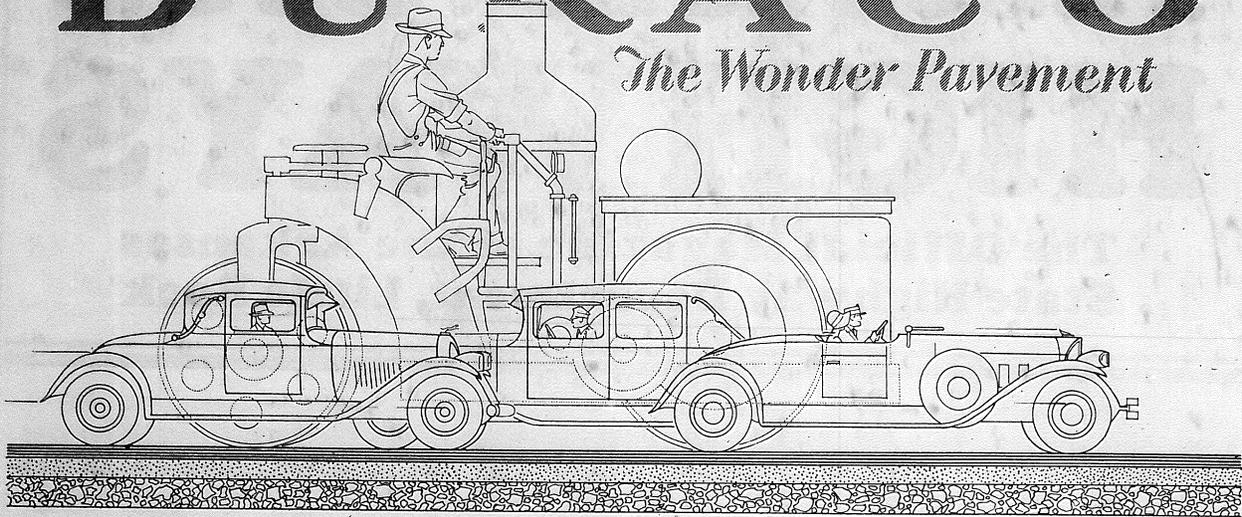
Vol. 7

JULY • 1930

No. 7

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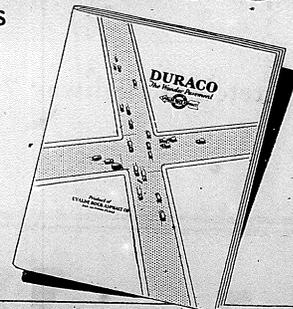
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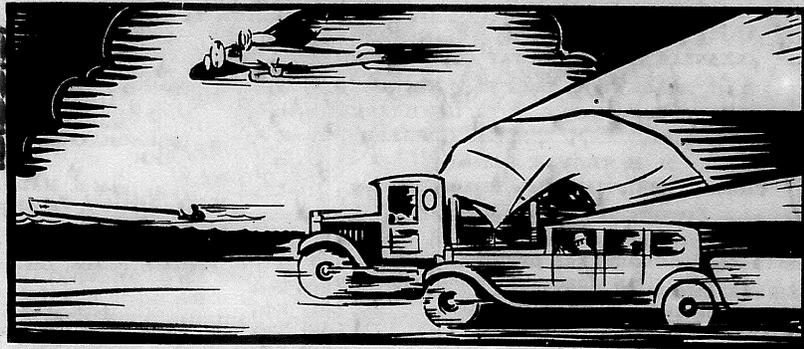
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WRITE FOR CATALOG

ARKANSAS HIGHWAYS

*Official Monthly
Magazine*



*State Highway
Department*

"Arkansas Highways" is edited in the offices of the Highway Department at Little Rock. Communications relative to advertising or articles and photographs submitted for publication should be sent to The Editor, care Highway Department, Little Rock. The Bulletin is sent free to State and County Officials, newspapers of the State and Road Commissioners who apply for it. Permission to reprint any matter contained in "Arkansas Highways," with proper credit is granted to all newspapers of the State.

VOL. VII

JULY, 1930

No. 7

Highway Notes Sold At Advantage

By Dwight H. Blackwood, Highway Commissioner



The issuance of the short term notes March 7, 1930, amounting to \$9,000,000 instead of proving an expensive measure as some of the opponents of the administration have freely predicted, proved at the sale of the \$18,000,000 long term notes July 9, 1930, to have been a profitable transaction instead, in addition to having providing funds with which to operate in the interim.

In March, 1930, when the \$18,000,000 long term note issue was offered a condition existed in the security market that made it impossible to sell the notes at a price that conformed to a law requiring that all notes be sold at a price of not less than par at 5 per cent. In other words, the law requires that the money obtained on note sales will not cost more than 5 per cent interest. Accordingly, the short term notes were sold to provide money for the carrying on the various projects under way, at a price of par at $4\frac{3}{4}$ per cent interest plus \$4,500.00 and this nine million dollars was to be retired out of the first sale of an eighteen million dollar block, which will now be done, since the sale of the eighteen million dollar issue was made July 9, 1930.

The difference in the indicated price on the eighteen million dollar notes in March and the price they sold for July 9, amounted to \$867,000.00, which in the final word in the profit made through the process of issuing the short term notes instead of experimenting with the rather risky method of selling the long term notes in smaller lots.

Eighteen Million Dollar Bond Issue Sold

On Tuesday, July 8, the State Highway Note Board sold to Halsey, Stuart & Co., of New York and Chicago, the 1930 allotment of \$18,000,000 of State Highway bonds for \$17,960,100 plus accrued interest at four and three-fourths per cent.

The company's bid was 99.78 for 4¾ per cent bonds. Accumulated interest of about \$71,000 will increase the State's net receipts for the issue to more than \$18,031,000, or to \$31,000 above par. The law provides that bonds may not be sold for less than the equivalent of par at five per cent.

Members of the board expressed themselves as well pleased with the sale and said the State will save \$45,000 a year in interest, compared with the offer for five per cent bonds last spring when the board sold \$9,000,000 worth of short term notes instead of the full allotment of long term bonds. This saving over the life of the bonds means that the price received yesterday was \$1,260,000 better than the offer for the same amount of bonds last spring, it was said.

The board received bids on three alternative proposals, for \$18,000,000 long term bonds, for \$9,000,000 long term bonds and \$9,000,000 short term notes, or for \$9,000,000 short term notes alone.

Two syndicates, each consisting of about 20 investment bankers, submitted bids on the three propositions. The Halsey, Stuart Syndicate was high bidder by more than \$200,000 on each of the proposals and offered a

premium of \$477,000 for \$18,000,000 of five per cent bonds, members of the board said.

SAVING TO EQUAL PREMIUM

The board accepted the syndicate's lower bid for four and three-quarter per cent bonds because the saving of \$45,000 a year in interest will equal the premium in 10 years, leaving the State to benefit from the saving for the remainder of the life of the bonds.

The second syndicate was headed by Lehman Bros. & Co., and Chase Securities Corporation of New York, and included Caldwell & Co. of Nashville, Tenn., the American Exchange Trust Company of Little Rock, and M. W. Elkins & Co. of Little Rock.

The Halsey, Stuart Syndicate included the following banks and securities dealers:

Bancamerica-Blair, E. H. Rollin & Son, Chatham-Phoenix Corporation, Eldridge & Co., A. B. Leach & Co., R. W. Pressprich Company, Redmond & Co., Darby & Co., and Van Ingen & Co., all of New York; Merchants-Commerce Trust Company, Boatman's National Company, Stiefel-Nicolaus Company and Stix & Co., all of St. Louis; Commerce Trust Company, Kansas City; Merchants and Planters Bank, Pine Bluff; Merchants National Bank, Fort Smith; W. B. Worthen Company, bankers, Little Rock; First National Bank, Fort Smith, and the National Bank of Arkansas, Pine Bluff.

Robert E. Simonds of Halsey, Stuart & Co.'s Chicago office represented the syndicate in submitting bids.

Halsey, Stuart & Co. has purchased all State highway bonds sold to date in Arkansas. The company sent several engineers to this State last spring to make a detailed inspection of newly constructed roads and to study the Highway Commission's plans for further improvements.

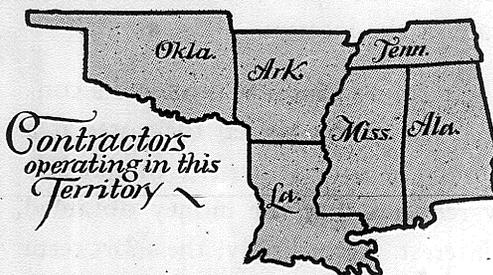
Justin Matthews, member of the State Highway Commission, said last night that \$9,000,000 of the proceeds from yesterday's sale will be set aside to take up \$9,000,000 in short term notes sold last spring. These notes will be due December 5. The remainder of the proceeds will be used to continue the summer and fall construction program, it was said.

Halsey, Stuart's representatives here were notified a few hours after the sale yesterday that \$1,000,000 worth of the bonds were sold yesterday for delivery as soon as the State delivers them to the purchaser.

GAS TAX COLLECTIONS \$666,738 OVER 1928-29 TOTAL

Gasoline tax collections during the fiscal year ended June 30, showed a gain of \$666,738.34 over the preceding year, it was said in a report compiled yesterday by David A. Gates, State revenue commissioner. Collections during the past year totaled \$6,778,694.44, compared with \$6,011,956.10 the previous year. The gain in 1928-29 over 1927-28 was \$953,510.

Collections from the cigar and cigarette tax during the past fiscal year amounted to \$1,234,162.31, compared with \$1,052,820.36 the preceding year, an increase of \$181,341.95.



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Twenty-three Contracts Awarded

On Wednesday, July 16, the State Highway Commission awarded contracts on twenty-three road and bridge construction projects, the combined cost of which will be \$1,168,211.17 on the basis of unit prices submitted by the successful bidders.

Eight bridge projects called for construction of nearly 5,000 feet of concrete, steel and treated timber bridges, consisting of about 30 separate structures.

The road jobs included 16½ miles of concrete paving, 57 miles of gravel surfacing, and 60 miles of grading and drainage structures preparatory to surfacing.

The paving includes six miles on the Nettleton-Needham road in Craighead County, awarded to J. P. McNulty of Pine Bluff for \$108,132.86, and five and a half miles on the Needham-Lake City road, awarded to the same contractor for \$102,276.24. McNulty was low on the six-mile job, but was second on the adjacent project. J. B. McCrary Engineering Corporation of Atlanta was second on the six-mile project and low on the other, but on the combined jobs McNulty's bids were approximately \$511 below the Atlanta firm's bids. It was said that McNulty has two paving rigs which will be started on the jobs at once.

The third paving job calls for five miles on Highway 64 between Mulberry and Ozark in Franklin County. The contract was awarded to Sullivan-Long-Hegarty Company, Bessemer, Ala., for \$105,120.04.

CONTRACTS AWARDED

Job 11020, St. Francis County, seven miles of grading and drainage on Wheatley-Forrest City road, Highway 70, Bunnell & Mack Construction Company, Paragould, \$77,894.64.

Job 4147, Franklin County, five miles of concrete paving on Mulberry-Ozark road, State Highway 64, Sullivan-Long-Hegarty Company, Bessemer, Alabama, \$105,120.04.

Job 595, White County, approximately 382 feet of steel and concrete bridges on Beebe-Higginson road, State Highway 67, W. P. McGeorge & Co., Pine Bluff, \$34,275.88.

Job 682, Lonoke County, nine and a half miles of grading and drainage structures on Pulaski-Lonoke County line east road, State Highway 70, D. B. Hill, Little Rock, \$58,761.99.

Job 984, Carroll County, four miles of grading, drainage structures and gravel surfacing on the Harrison-Eureka Springs road, State Highway 12, Interstate Construction Company, Fort Smith, \$54,808.26.

Job 9117, Carroll County, 492 feet of concrete bridge on the Berryville-Eureka Springs road, State Highway No. 12, Blackshire & Blackshare, Fayetteville, \$53,424.28.

Job 1078, Craighead County, six miles of concrete

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*Minimizing the cost of
all vehicular transportation!*

pavement on Nettleton-Needham road, State Highway No. 18, J. P. McNulty, Pine Bluff, \$108,132.86.

Job 10161, Craighead County, five and a half miles of concrete pavement on the Needham-Lake City road, State Highway No. 18, J. P. McNulty, Pine Bluff, \$102,276.24.

Job 2156, Drew County, nine miles of grading and drainage structures on the Monticello-Rye road, State Highway No. 35, Harvey & Jones, Jonesboro, La., \$55,314.27.

Job 3124, Pike County, 17 miles of gravel surfacing on Kirby-Howard County line road, State Highway No. 70, M. O. Weaver, Iowa Falls, Ia., \$18,030.46.

Job 3133, Lafayette County, five and a half miles of gravel surfacing on the Garland City-Buckner-Section Two road, State Highway No. 2, Merriwether Sand and Gravel Co., Lewisville, \$6,112.80.

Job 3142, Miller County, 530 feet of steel and timber bridge over Sulphur River, on Texarkana-Louisiana road, State Highway No. 71, Kochtitzky & Johnson, England, Ark., \$9,500.

Job 4142, Washington County, 140 feet of concrete deck girder bridges on the Parks Corner-Oklahoma State line road, State Highway No. 80, Walsh & Thomas, Little Rock, \$13,341.90.

Job 642, Garland County, nine miles of grading and drainage structures on the Royal-Hot Springs road, State Highway No. 6, James Spencer & Son, Hot Springs, \$94,892.39.

Job 661, Prairie County, eight miles of grading and drainage structures on the Mesa-Brassfield road, State

Highway No. 70, S. E. Evans, Fort Smith, \$52,957.35.

Job 6114, Prairie County, five miles of grading and drainage structures on Hazen-Mesa road, State Highway No. 70, D. B. Hill, Little Rock, \$20,184.97.

Job 6118, Garland County, 610 feet of reinforced concrete bridge on the Ouachita River on Royal-Hot Springs road, State Highway No. 6, Koss Construction Company, Des Moines, Ia., \$85,589.

Job 7141, Union County, 2,244 feet of treated timber and structural steel bridges on the El Dorado-Three Creeks road, State Highway No. 15, J. F. Mullins, Pine Bluff, \$77,019.40.

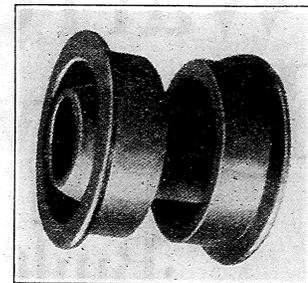
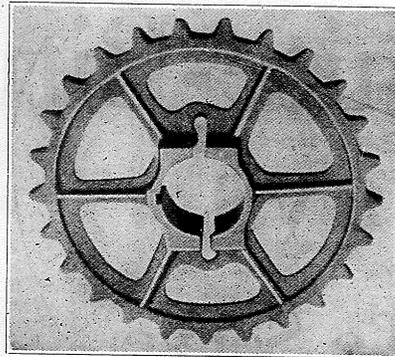
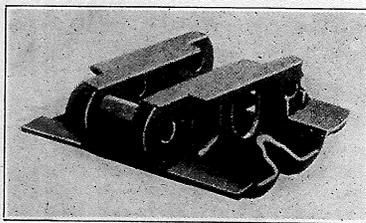
Job 7144, Dallas and Cleveland counties, 19 miles of gravel surfacing on Fordyce-North road, State Highway No. 167, J. W. Gwin, Birmingham, Ala., \$14,387.10.

Job 8141, Yell County, 282 feet of treated timber and steel I-beam bridges on Plainview-Fourche road, State Highway No. 76, J. F. Mullins, Pine Bluff, \$12,930.70.

Job 1013, Clay County, 691 lineal feet of treated timber steel I-beam bridges on the Rector-St. Francis road, State Highway No. 39, W. L. Sharpe, Memphis, \$29,949.83.

Job 10151, Randolph County, 11½ miles of gravel surfacing on the Pocahontas-North road, State Highway No. 79, M. O. Weaver, Iowa Falls, Ia., \$13,802.06.

Job 1123, Logan and Franklin counties, 12½ miles of grading and drainage structures on the Ozark-South road, State Highway No. 23, Batson Brothers, Dardanelle, \$69,505.24.



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Arkansas State Chamber of Commerce Statement and Report on Motor Fatalities in Arkansas During June, 1930

Twenty-four persons died in Arkansas as a result of motor accidents during the month of June, making a total of 111 for the first half of the year.

That the death list for the first six months of 1930 totals only 111 is a feature of remarkable significance because it indicates that Arkansas motorists are exercising more care and are consequently decreasing the accident hazard.

The Chamber is not in possession of data for the first six months of 1929 which might be used for comparative purposes because it did not begin to record fatalities until September 1, but during the last four months of 1929 Arkansas had a death list of 157 as compared with only 110 for the first six months of 1930. While an increase in fatalities is to be expected during the next few months, because motor cars will be on the road more hours daily, thus increasing the accident hazard, the showing the first half of the year is little short of remarkable as compared with the available 1929 statistics. For the purpose of comparison the monthly fatality total since September follows: September 39, October 36, November 32, December 50, January 10, February 16, March 17, April 24, May 20, June 23.

The Chamber is confident that the fatality record for the last four months of 1930 will show a decrease as compared with the last four months of 1929 because it has been plainly evident during the last few months that the Chamber's highway safety campaign, in which the press of the State has co-operated, has brought to the attention of thousands of motorists and pedestrians the necessity for the observance of a few common-sense rules of safety.

In the light of the experience of other States the Chamber believes that the increased speed at which motor cars are being operated in Arkansas has had not a little to do with reducing the number of accidents. With the constant improvement of the highways Arkansas motorists are operating their cars at higher speeds because they justify it. The driver of a car moving rapidly must devote his entire attention to driving with the consequence that carefulness literally is forced upon him. The habitually slow driver, aware that other traffic is moving at high speed and that he must protect himself against it by remaining on the proper side of the road, is forced to pay heed to driving and not to the scenery with the result that he, too, becomes more careful. The improvement in driving generally within the last year is evident to anyone who travels over the State.

On July 1, 1927, the State of Michigan abolished all speed limits on the open road in the face of predictions that the highways would become a shambles. After the first year of operating traffic under this plan the statistics showed decreases of twenty-two per cent in the number of fatalities and sixteen per cent in the number of accidents. In view of the success of this plan in Michigan, the State of Iowa adopted it. Iowa was quickly followed by Tennessee and it is expected that a number of other States this year will do likewise.

Abolishment of all speed limits as a safety measure was adopted first in Great Britain some years ago with

the objective of forcing motorists to become more careful and to relieve congestion, the greatest of all accident hazards. The success of the movement in Great Britain resulted in its almost universal adoption in Europe and South America. The first step in the direction of high speed in this country was taken by Florida in 1925 when it increased the limit to forty-five miles an hour, a move which several other States immediately adopted, and Michigan went still farther in 1927 with abolishment of a limit entirely.

Rhode Island, in its safety campaign has gone farther than anyone. Realizing that slow speed always breeds congestion and that congestion is the greatest of all hazards, it adopted a minimum speed limit. The motorist on a Rhode Island State road must move at a speed of not less than thirty-five miles an hour or defend a charge of obstructing traffic.

In Arkansas' June fatality list of twenty-four, there are several object lessons. The death of C. N. Green, Jr., near Mena, the night of June 6 because of a wagon on the road without a light, was only one of many such fatalities in Arkansas since September 1. Usually the fatal accident occurs when the car without more than a moment's warning crashes into the wagon. In this instance, however, the driver of the car in which Green was a passenger sought to avoid a crash by running his machine off the road. The car brought up in a deep gully and overturned. In several States the

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driver of the wagon, because the absence of a light displayed on the vehicle had caused a fatal accident, would have been charged with manslaughter. The wagon without a light displayed after dark is one of the most dangerous menaces on Arkansas highways and the roads in all parts of the State are fairly congested with them.

Two persons were killed and eleven others more or less seriously injured near Sheridan June 29 when two cars met head-on in broad daylight. A large car which newspaper reports said was moving at high speed and which apparently rounded a curve on the wrong side of the road, crashed into a lighter car.

William Taylor, driver of a truck to which was attached a trailer, lost his life near Pine Bluff June 26 because of the proneness of some trailers to lurch constantly to right and left and which has caused some States to bar them from the highways. Taylor, in moving to the edge of the road to permit a car to pass ran too near the edge of the pavement, the trailer lurched on the earth shoulder of the road, turned over and carried the truck with it, the driver receiving fatal injuries.

Two fatalities with unusual features occurred. William Wrenn was killed near Lepanto June 29 when his car was overturned because of the intensely hot weather. The heat had caused the pavement to buckle, his car struck one of these "waves" and overturned.

George Washington Jones, a thirteen-year-old negro, died in a wreck near Wheatley June 9 when a car owned and driven by his foster father and purchased with money received as indemnity for the death of two of his children in a motor accident several months previously near Forrest City, overturned.

Pine Bluff Holds Road Celebration

Program Given to Commemorate Completion of Concrete Highway

Jefferson County State highways and the Martineau road plan were praised by speakers at a celebration held in Pine Bluff, Friday, July 18, of the opening of new concrete highways leading north and south out of Pine Bluff. Dwight H. Blackwood, State Highway Commissioner, described plans of the Highway Department in carrying out the Martineau road program. He told of what has been accomplished and of plans for the future. Admitting that the cost of constructing highways in Arkansas is higher than in some other States, he said this was due to the high freight rates on material, and went into details as to the cost of constructing concrete and gravel roads and bridges. He said people sometimes complain because of detours but every detour sign, he said, is a sign of progress.

He compared the present system of having the cost of road construction paid by those who use the roads with the old system, where property owners paid the cost, and said there is not an acre of land in the State now taxed for highway construction. He said there are people who allege hundreds of men are employed in highway work on the eve of election but that there are fewer men on the payroll at present than there were a year ago.

PRaises NEW HIGHWAY

Congressman D. D. Glover praised the Highway Department for what has been accomplished under the Martineau road law and said the new highway from Pine Bluff to Little Rock is the equal of any between Pine Bluff and Washington, D. C., a route he traversed recently. He said people throughout the nation are talking about road construction in Arkansas. B. W. Benton, president of the Chamber of Commerce, presided at the meeting, which was held this afternoon on the courthouse lawn. He announced that the meeting was to be non-political and non-sectarian and said no political talks would be permitted. He introduced R. H. Williams, who introduced Mr. Blackwood and thanked him and his associates for what has been done in Jefferson County. He said the State Highway Department has given this county 65 miles of concrete roads and 140 miles of graveled highways. The chairman also introduced C. S. Christian, State highway engineer; Ed Jenkins, division engineer; and Albert Madding, district engineer.

The program closed with a dinner at the Hotel Pines given by the Chamber of Commerce.

At the dinner praise of the Martineau highway program was continued by Governor Parnell, J. H. Carmichael and Justin Matthews. Mr. Blackwood, who spoke in the afternoon, also was among the speakers.

Mr. Carmichael referred to the present administration as a body of builders. Justin Matthews told of how the highway program was being financed and told of how much longer it would take to carry out the Martineau program. Governor Parnell said that while many former governors had torn up the programs of their predecessors, he had talked with former Governor Martineau upon succeeding him and had tried to carry out his policies.



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Traffic Crosses Harahan Viaduct

New Structure Across Mississippi River Is Toll-Free

The new Harahan viaduct affording Arkansas-Tennessee highway travelers a toll-free passage across the Mississippi River here for the first time, was opened to traffic Thursday, July 10.

The viaduct reduces the distance required to approach the Harahan bridge from Arkansas and replaces an old, wooden affair which spans the bottom lands along the Arkansas bank and upon which tolls have been charged.

Tennessee, Arkansas and the city of Memphis shared approximately \$1,600,000 which the new viaduct in appropriation of funds and allotment of Federal roads.

Traffic of all description, both light and heavy, was routed over the new structure and by nightfall it was estimated that nearly 2,000 vehicles had passed over the concrete spans and fills.

Another layer of oil is to be spread on the roadways tomorrow which will send traffic over the old wooden structure for several hours at least but no toll will be charged.

Tolls on the old viaduct stopped promptly at 12 as the first cars drove on the new span. At the same time maintenance crews of the State Highway Department were withdrawn from the old structure.

Judge Renfro Turner said tonight however, that Crittenden County will make every effort to retain the old viaduct as an emergency passage-way from the Harahan bridge on the Arkansas side of the Mississippi River

and was hopeful that he can obtain the co-operation of the State in keeping it in shape.

Some engineers have expressed a belief that at least two years will be required for the middle span of the earth fill on the new viaduct to pack thoroughly and Mayor Overton of Memphis, and the Memphis Chamber of Commerce have urged the need of keeping the formerly used wooden structure in repair for emergency.

Coincident with the opening of the viaduct Mayor Overton sent a message of congratulation to Dwight Blackwood, Arkansas Highway Commissioner.

No special ceremony marked the opening. Promptly at 12:00 J. C. Johnson of West Memphis, stepped from the center of the east end of the roadway and waved the first car ahead and Charles S. Driver, manager of the old viaduct, did the same at the west entrance.

Cutting Out the Frills

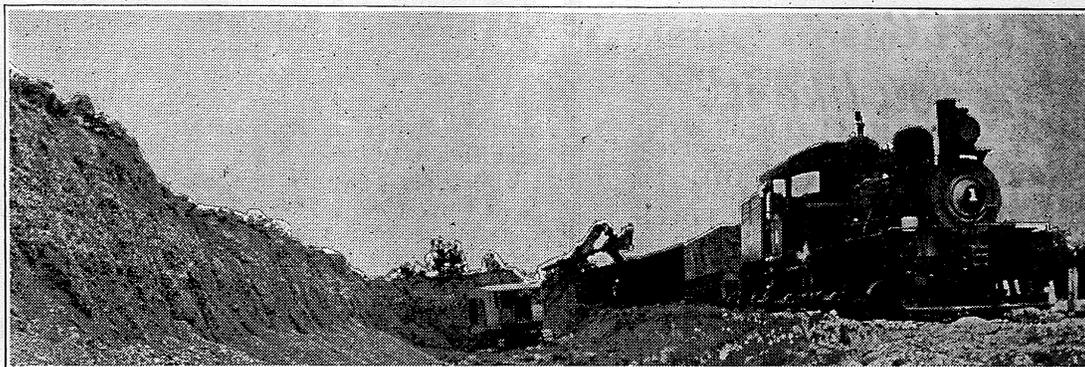
One of the crew of a big liner chanced to pick up a first-cabin menu card, and seeing at the top "Table d'hote," returned to his pal and inquired:

"What does this 'ere mean, Joe?"

"Well," said Joe. "it's like this 'ere. Them swells in the saloon have some soup, a bit of fish, a bit of this, a bit of that, and a bit of summat else, and call it 'table dottie.' We have 'table dottie,' only we mixes it all together and calls it stew."

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Contacts of a Highway Superintendent with the Public

By Harry Byron Jay, Superintendent of Construction, Illinois Division of Highways, Divernon

A superintendent's contacts with a new community begin when he makes his first trip to go over the ground where his season's work is laid and to apprise the leading citizens that he may bring his organization to their town provided they promise to forego the time-honored custom of gouging because they are dealing with a State outfit.

His contacts are as varied as are communities; within a given community they are as varied as the individuals. Some communities are friendly, some the reverse, to the coming of an industry for a season. I have gone into places where the mayor has come to meet me with the keys to the city and all its equipment. I have gone into other places where an extra police force was put on because the "hard-road" folks were coming. I have gone into localities where I might make my plant set-up in some man's front yard if necessary; in others, quite as needy of roads, I have been asked \$2,000 an acre for \$200 land in my negotiations for a plant set-up.

A superintendent's contacts with both the officials and the private citizens of a community are bound to be intimate. If he would make maximum progress with minimum friction, it is for him to be a diplomat. He must know the fifty-fifty game of give and take. He will be wanting many favors to expedite this work, and these come almost invariably if he makes an effort to establish friendly relations with the city fathers. Perhaps this is accomplished by no greater effort than it

takes to talk over with them his plans, to explain methods. The "hard" road may be the first thing that has happened in their village for a score of years, and they want to know all about it. They are a friendly, hospitable folk as a rule, these city fathers, and should find in the superintendent a sincere, square-dealing, well-mannered person with a capacity for seeing their viewpoint as well as his own, and with a desire to make his organization co-operate in upholding the ideals of the town they are to call home for a few months.

WHERE DIPLOMACY IS REQUIRED

This is not always so easy, and requires patience and philosophy. Into the community the superintendent has brought an organization made up of all sorts and conditions of people, from his high-type foremen and assistants to the lowest type of laborer—picked up wherever he may be found, and of whom the superintendent knows nothing. Yet, to the citizens of the town, the superintendent is the organization, responsible for the conduct of its least member. Grocers who have trusted irresponsible laborers come to him: "Will you make Fred Jones pay his grocery bill? He is two months in arrears now." The laundryman: "Can you talk to Pete Simpson about letting his laundry bill run so long? The widow: "Will you use your influence to get Tom Brown to move out of my house? I do not like him, and have a chance to get friends of mine in there." So the superintendent sighs or groans or laughs or says things under his breath, and plays wet nurse to the tradesmen of the community.

There are farmers who appreciate that they must be inconvenienced for awhile in order to get a road and these stand it with good grace. Others insist upon the most unreasonable demands in the use of pavement before it is old enough. Some of these farmer-engineers can tell merely by looking at it when pavement is old enough to support a given load—just as they can offer startling and original advice as to where and how the road should be built.

These are generally the ones who want to do the most borrowing. They ask if they may take the concrete mixer, some sand and stone and cement. They would like the loan of the tractor and grader and a gang of men to fix up a road a few miles west. After refusing one of these borrowers and explaining that I could not spend money on other than the road I was building, he said, "Well, I thought it wouldn't do any harm to ask. It cost me only my breath."

Then there is the farmer who demands a culvert in front of his place because his neighbor down the road has one. It makes no difference that his neighbor needs one to take care of drainage and that his place is on a hill where there is no drainage to take care of. Perhaps he would like it as sort of a monument to show the world he is as good as his neighbor.

NO ONE BELIEVES IN SIGNS

Why is it that the traveling public, almost to a man, can be depended upon to disregard *Closed Roads* and *Detour* signs—at least to question them? Perhaps for the same reason that we all must touch the green paint to see if a *Wet Paint* sign is really true. We are all

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Most of the trespassers are innocent of any malicious or criminal intent, and when they are reasonable and courteous they are given considerate treatment. However, there are some who get arrogant and hard-boiled, but they don't get away with it as a rule. A road gang is not noted for its "softies."

Sometimes, though, we run up against a situation where discretion is the better part of valor. I have in mind a time when an automobile loaded with thugs from a neighboring city came along, tore down the barricade which closed the road, and went down the new pavement. A watchman tried to stop them. He was motioned to one side by a member of the gang with a gun in his hand. "Get out of the way," he cautioned, "or I'll croak you!" The watchman got out of the way. But he took precautions against a recurrence of the offense. He got a couple of planks, drove large spikes through them close together, and laid the planks across the pavement with the spike points up, sprinkled some dirt over the whole affair to conceal it, and awaited results. Another car crashed the gate and passed over the innocent looking accumulation of dirt, but needless to say didn't get far enough to damage any green pavement.

There are smart alocs who sneak onto the fresh pavement. But the most dangerous offender probably is the drunk driving a car. He is a serious danger to the workmen, to the machinery and to the recently laid pavement. I recall an instance where one of these drivers got around a barricade and drove down fresh pavement until he arrived at the work that had been done that very day, his wheels gradually sinking deeper and deeper until he was stuck in the soft concrete. It cost him plenty in fines and damages.

Happily, though, these offenders are in the minority and the one we have to deal with mostly is the average citizen who can't resist following the pavement stretching out invitingly ahead even though he has seen a *Detour* and *Road Closed* sign. A certain engineer, knowing the propensity of the average driver to figure that perhaps he *could* get through, added below the conventional *Road Closed* sign the following:

*"Do not argue with the sign.
The sign is right."*

TESTING THE PAVEMENT

I have seen several ways of testing pavement to determine its strength for supporting traffic. The method generally accepted is that of breaking small beams of concrete by means of a beam tester. A small beam, similar to a small fence post six inches square and three feet long, is cast from the same batch of concrete which is being placed on the road. After several days this beam is placed in the tester and broken by it. That experiment, at the time of breaking, records its breaking strength. If this sample of concrete shows sufficient strength it is logical to believe that the pavement itself has similar strength.

But not long ago I encountered a new method for testing. A woman came down the road driving a Ford alongside the pavement until she was stopped by the foreman at the mixer. She wanted to go on, but he told her that she could not; that she would have to turn around and go back. Then he went back to his work.

But, happening to glance in her direction shortly after, he saw her on the green pavement with her car. Rushing back he stopped her and gave her an eloquent discourse upon her injury to the pavement by her act.

She apologized and explained, "It looked dry, and I got out of my car and walked on it. It held me up all right, so I didn't think it would hurt to drive the Ford over it."

After sizing her up—she weighed about 250 pounds—he informed her that even though he admitted the severity of her test, it hardly could be called official and that he didn't believe it would be acceptable to the engineer.

MUST BE IMPERVIOUS TO CRITICISM

Such are a superintendent's contacts with the public. The impressions he and his organization make upon it are quite as varied, and in the variety lies his assurance of keeping balanced. He is in no danger of becoming either unseemingly vainglorious nor yet too low. He learns that his cost records, and they only, must be his Bible—his comfort or his chastisement. The Rotary Club or editor of the *Town Astonisher* may acclaim him as little short of a hero, making unprecedented progress in the face of obstacles, but he mustn't let the praise go to his head. He knows that with his equipment and organization he should make that progress. A local engineering club may visit his job and report that he is making unsatisfactory progress; that with his equipment he should average 1,600 feet a day. And he mustn't let the criticism make him feel low. For he knows that the full capacity of his mixer is but 1,600 feet and that it is impossible to average a capacity run.

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*"Helping to write the Martineau Law in
indelible characters across the
Arkansas landscape."*

The other day a large crowd stood watching the work of the great mixer. Everything was running smoothly, and perhaps I was preening myself a little over this organization running like one perfect machine. It was a moving spectacle to me, understanding as I did all the apprenticeship and co-operation and interest in the good of the job that was back of this perfect functioning. I was observing especially a certain foreman—a man of high native ability with years of training and experience behind him. There wasn't a leak in his operating gang; not a wasted movement; not a wasted second. He was demonstrating perfectly that progress and low costs are achieved by saving the seconds. His efficiency was enough to make a humbler man than he feel a bit "upstage." Was this crowd appreciating his hitchless performance? I was answered shortly.

A woman accosted me, seeking a job for her son. "But Tom," I told her, "is just a high-school lad. Light. Soft. Quite unfitted for labor of this sort." "Why," she demanded, indicating the foreman, "can't you give him a job such as that man has? All he does is to walk up and down."

Convinced

The circus strong man rode out on horseback to challenge a farmer whose great strength had gained him a reputation. He entered the farmyard, tied up his horse and approached the farmer.

"Hey," he said. "I've heard a lot about you, and have come a long way to see which is the better man."

Without answering the farmer seized the intruder, hurled him bodily over the fence into the road and returned to his work.

When the loser had recovered his breath the farmer growled. "Have you anything more to say to me?"

"No," was the reply, "but perhaps you'll be good enough to throw me my horse."—*The American Boy*.

Pass the Murads

A tabloid newspaper offering \$1.00 each for "embarrassing moment" letters received the following epistle: "I work on an early night shift in a steel plant. I got home an hour early last night and there I found another man with my wife. I was very much embarrassed. Please send me \$2.00 as my wife was also embarrassed."

The editor, so we are told, sent a check for \$3.00, admitting the possibility that the stranger, too, might have been embarrassed.—*Exchange*.

UNITED STATES POSSESSES 38.7 PER CENT OF WORLD'S ROAD MILEAGE

Although ranking twelfth in the number of miles of highway to the square mile of area, the United States, with a total of 3,016,281 miles possesses 38.7 per cent of the world's highway mileage, it was stated orally by B. P. Rot, highway specialist of the automotive division, Department of Commerce, March 1.

Japan leads the world in the number of miles of highway to the square mile of area, but ranks third in the per cent of world's highway mileage, with a total of 575,325 miles. Russia ranks second with 776,812 miles, Japan has three miles of highway to the square mile, and the United Kingdom two miles.

The United Kingdom has 179,095 miles and Germany 216,672 miles. Since the first survey of the world's road mileage, made in 1928, many changes have occurred which show a certain amount of progress in road development throughout the world. Reports for 1929 show an increase of 1,223,628 miles, or 18.6 per cent, as compared with the preceding year.

It was pointed out that the distribution of this increase by continents was as follows: America, 152,662 miles, or 4.3 per cent; Africa, 57,018 miles, or 27.7 per cent; Asia, 595,547 miles, or 142.3 per cent; and Europe, 474,402 miles, or 24 per cent.

Of the countries reporting by types, the United States with 167,155 miles, is the only one showing more than 100,000 miles of hard-surfaced roads. Italy stands second with 94,731 miles; Indian third, with 46,371 miles.—*Alabama Highways*.

HAS COST BEEN GIVEN TOO GREAT EMPHASIS IN HIGHWAY WORK?

The urge to build a road at low cost has been the controlling factor in much of the highway designing in the past. The fear that the public "would not stand for expensive pavements" has influenced road authorities in too many cases to seek the less expensive road and trust to luck as to safety. Future traffic has not been anticipated in the construction and many roads as soon as completed were out of date.

This tendency on the part of State and county highway officials to adopt a "cheap" form of construction, as contrasted with a type of building that, because of a higher factor of safety and heavier construction, will give a longer life and therefore a higher first cost but a lower annual cost, accounts for much of the concrete road that has been unsatisfactory. For example, the results of the Bates road test of a number of years ago indicated clearly that a heavier type of road was desirable and more economical in the long run but the slogan of the politicians in power in Illinois, "build roads at less than \$30,000 a mile," made it imperative that a cheap form of construction be adopted contrary to the better judgment of the engineer. This was a mistake from the standpoint of business economy, although it made votes for politicians by increasing the mileage slightly.

Until highway officials can be relieved of the fear of being kicked out of office unless they provide some sort of improved road by the door or town of influential politicians, there will be but little designing from the standpoint of real economy.

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Meeting The Modern Traffic Problem Economically By Resurfacing and Salvaging Old Pavements

By Ariel E. V. Dunn

The subject of resurfacing and salvaging existing pavements has become of such paramount importance in all parts of this country that experiments are being carried on everywhere, and a fund of valuable information may be gleaned from the results of the work which has been carried on for the past few years.

Where pavement failure has been due to inadequate drainage or insufficient strength of the foundations, the only solution is the construction of a new pavement. But in the greater percentage of instances, when drainage conditions are good and where there is ample subgrade stability, it is economical to utilize the old pavement material as a base for the new.

W. D. Sheddan, city engineer of Jacksonville, Florida, has had some very interesting experiences in the problem of handling brick streets that were constructed from 15 to 30 years ago. Many of these streets have been relaid on an 8-inch lime rock base utilizing from 50 to 75 per cent of the old brick.

Out of 15 projects which Jacksonville recently installed, eight were relayed jobs. These have shown a saving of 61 cents a square yard over the cost of entirely new pavement. This represents only the value of the brick which has been reclaimed, as on these jobs the curb has been reset and a new base constructed.

RESURFACING WITH SHEET ASPHALT

On brick streets where the foundation is adequate, many pavements have been resurfaced with sheet asphalt, using 1 1/2-inch binder course with additional binder to fill any depressions in the old pavement, and then adding one or 1 1/2 inches of sheet asphalt. This, of course, necessitates the adjustment of all manhole covers, inlets and other structures in the pavement to the grade of the new surfaces. It also requires the relaying of the flow line of the gutter from two to three inches below the existing gutter in order that the full thickness of the new surface may be carried to the curb. These adjustments constitute one of the objections to the use of sheet asphalt for this work. However, the results of the installations which have been made have been entirely satisfactory.

The resurfacing of Duval Street in Jacksonville is interesting inasmuch as this street has had about eight years of service and is in perfect condition today. Part of this street was originally built about 30 years ago with repressed brick laid on a natural sand subgrade with sand cushion. Resurfacing was done by filling the depressions with ordinary binder mixture, spreading one inch of binder over the entire street, and covering this with a standard 1 1/2-inch sheet asphalt wearing surface, thinning out both binder and surface next to the curb.

On Duval Street, west of Georgia Street, the old brick were taken up and additional old brick added. The street was rebuilt to a 40-foot width, using an 8-inch compacted Florida limerock base with the old repressed brick laid flat on sand cushion with bituminous filler, and the granite curbs were rejoined and re-

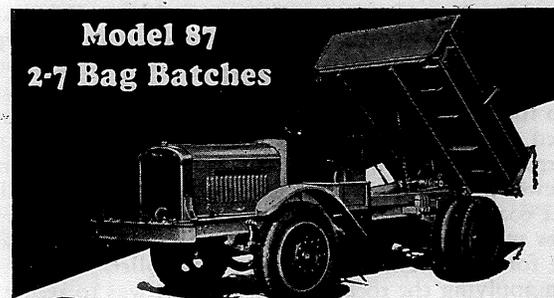
set with new circular curb at the corner. This old pavement was 24 feet wide and was constructed 22 years ago.

EXPERIENCES IN NILES, MICHIGAN

Mr. Taggett reports his experience in resurfacing in Niles, Michigan, as follows: Niles is among the oldest cities in the southwestern part of the State, with about 15,000 population and with very heavy tourist and trucking traffic into the resort and fruit sections nearby. Most of the earlier pavements have been brick or sheet asphalt on either natural cement concrete or macadam foundation, and have given excellent service.

On Front Street, however, a brick pavement was laid on only a sand foundation. This street parallels the St. Joseph River and the low, swampy ground had been filled in from one to five feet to provide a proper grade. Parts of the street have been under water from ice gorges in the river.

A few years ago this street became part of one of the main north and south trunkline highways. This section of pavement, in its 25 years of service, had become very rough from settlement and wear. Arrangements were made with an outfit that had been working on the county roads in the vicinity to patch the lowest places with hot bituminous material and crushed stone.



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Then the entire surface was carefully swept and treated with 4-10 gallon of cut-back bituminous material. This was covered with limestone chips.

The cost of patching was three cents a square yard and the cost of surface treatment 15 cents a square yard. The riding quality of the street was very much improved and the result was considered satisfactory. Under an exceptionally hard winter traffic, however, the thin carpet coat broke through in places. In the spring the roadway still presented a smooth and satisfactory riding surface, but the appearance was not pleasing.

It was recommended that another carpet coat be added the following season, using a slightly different bituminous material, but the city authorities felt that the work done should be of a more permanent nature. Resurfacing with sheet asphalt or relaying the brick on a new concrete base were considered, these operations to be financed by assessing a portion of the cost against the abutting property. However, if the expense of placing such a pavement on the street were to be incurred, good practice required that all under-ground structures be in proper condition.

This would mean replacing all iron water services with lead pipes and relaying sanitary sewers and lateral branches to the curb. If the old pavements were cut to pieces with all these trenches, (then the value of the old pavements as a base would be entirely destroyed. After considering all sides of the matter, it was decided to apply a surface of rock-asphalt to as much of the street as the funds on hand would permit.

NO EXPENSIVE EQUIPMENT REQUIRED

The pavement has a width of 36 and 46 feet. In order to cover as much of the traveled surface as possible, a strip eight feet wide, adjacent to each curb, was left without any further treatment as this space is used for parking. The portion resurfaced was carefully swept and given a thin coat of cut-back asphalt, using about 1-20 gallon to the square yard. Some concern was felt as to the result that would be obtained over the patches placed the year before, since an excess of bituminous material had been used and the patches were bleeding somewhat. For this reason less asphalt was used in the paint coat than is ordinarily recommended. The labor forces were inexperienced and the only equipment used were forks, shovels, rakes and a 5-ton roller.

In applying the rock asphalt, the aim was to secure a finished thickness of not less than $\frac{3}{4}$ -inch. The maximum depth in the holes was about $1\frac{1}{2}$ inches. One-inch wooden strips were laid along the pavement parallel

to the centerline and spaced about four feet apart. These were used as guides in spreading the material.

After the material was spread, the strips were moved ahead and the spaces thus left were filled with additional material. The practice was to let the material stand until late in the afternoon before rolling. At the close of the day's work the section completed was opened to traffic. All sections laid one day were re-rolled the next afternoon to take out any traffic marks that had developed. The result obtained did not at first compare with a sheet asphalt surface, but traffic has continued to iron out the small irregularities and the street now presents a surprisingly compact surface.

NORTH CAROLINA'S EXPERIENCE

J. C. Walker, district engineer of the North Carolina State Highway Commission, Asheville, reports that on the Biltmore-Hendersonville section, which consists of an 18-foot concrete slab four inches thick, rich mix placed on an old, worn out, badly broken 6-inch county-built concrete road is now in excellent condition. Some apprehension was felt at the time of construction, since it was feared that the two slabs would bond and that cracking, already present in the lower slab, would be transmitted to the upper slab. It was further feared that the unequal contraction of the surface layer, exposed to very cold air, would exceed that of the lower course with subsequent extreme cracking appearing in the upper surface.

To eliminate this, transverse planes of weakness were installed at intervals of 30, 50 and 70 feet. All the additional cracking which has appeared came about within the first few weeks after construction and no additional cracks have been noted, although this pavement is now two years old and carries a very large volume of fast-moving traffic including a large percentage of heavily loaded solid tired trucks.

MOVING OUT OF THE MUD

In the opinion of Timeon Covert, of the Department of the Interior, there are many rural communities which do not realize the value and necessity of good roads. To bring the need before them, educational campaigns are necessary.

Mr. Covert gives as an illustration a community which wished to consolidate its small schools into one strong, centralized institution. But it was found that, due to unimproved roads, pupils could not be transported to school in bad weather.

The community then studied road-building. Data was collected; the U. S. Bureau of Public Roads and the State Highway Commission furnished assistance; debates were held and problems worked out. A scientific system of all-weather roads resulted.

"Today," in the words of Mr. Covert, "one may see big, powerful motor buses transporting pupils regularly over good roads to the central school in that community. The farmers have moved out of the mud, so to speak. It was found in the school project that . . . most of the money spent for road improvement would remain in the community; that transportation over good roads would bring a good 12-grade school within reach of every boy and girl; that farm produce could be marketed over surfaced roads on any day of the year; and that all these improvements, which no one would now think of doing without, could be brought about at a reasonable outlay of funds."

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THE DETOUR SEASON

Mark Twain it was who remarked that while everybody was talking about the weather—and mostly complaining about it—nobody was doing anything about it. Weather is something that, while never satisfactory to everyone, is always taken for granted. One of its most useful purposes is to serve as a topic of conversation.

The highway detour has many things in common with the weather—so many in fact that it might be supposed they come from the same stem, like twin brothers, or at least first cousins. Like the weather, the detour is always with us, everyone is talking about it and complaining about it, and but few are those who do anything about it. Call the roll of those concerned with detours and what will you hear?

Says the highway official: "We use detours for resurfacing, bridge construction and culvert replacement projects, and at rare intervals to rebuild a road after a washout. A detour seems unavoidable when the full width of the roadway is torn up for 24 hours or more, but it invariably creates new problems just as serious to the happy relations between the highway department and those whom it serves as the condition which made the detour necessary in the first place. We should be glad to find a way of avoiding the use of detours."

Says the road contractor: "When and where a detour should be provided for any road job is decided by the engineer in charge and not by the contractor. Though he has no responsibility for them, however, detours are always thorns in the flesh of the contractor for he is held to blame by the traveling public for their condition and even for their existence. We talk about the detour problem in our meetings but there isn't much we can do about it until construction methods which make detours unnecessary become standard practice, as they already have in some States."

Says the motorists: "The time of year when the motorist should derive the greatest pleasure from the use of his car is also the time when there are most hindrances to its use. The motorist wants to know why some construction details cannot be carried out in winter and so reduce the need for detours in summer. Or why methods cannot be adopted which would avoid detours altogether."

Says the taxpayer: "The taxpaying citizen looks on the detour as a wasteful and inefficient feature of road building. It is wasteful because it requires an outlay of public money to prepare and maintain a detour for traffic for which it was not designed. It is inefficient because methods are available which make detours unnecessary in most, if not all, cases."

This is the detour season—with detours in operation, with but few exceptions, wherever road work is being done. It is also the season of opportunity for live road officials—opportunity to learn what others have done about this troublesome problem. Road builders who pride themselves on their efficiency and progressiveness can make a permanent place for themselves in the hearts of all concerned by this year taking definite steps towards the elimination of the detour as a feature of road construction.

Personally, we don't know the secret of success, but sometimes we are afraid it's work.



The Season Is On!

Boss: "So you want off this afternoon, eh? Grandmother dead, I suppose?"

Office Boy: "No, indeed, she has two tickets to the game."

Barnum Was Right

A certain New York restaurant man may be given credit for a rather novel window display. This man didn't have much money for advertising, so he bought the biggest fish bowl he could get hold of, filled it with water, and put it in the window with this sign:

"Filled with invisible goldfish from Argentine."

It took 17 policemen to handle the crowd.

—Portland Adv. Spotlight.

Waste

The editor of a newspaper wheeled his chair around and pressed a button on his desk. The office boy entered.

"Here," said the editor, "are a number of directions from outsiders telling us how to run our paper. See that every one is carried out."

And the office boy, gathering them all in a large waste basket did so.—Regina Leader.

Love Test

Wife: "You don't love me any more."

Husband: "Why, dear, I do."

Wife: "You couldn't love a woman with such old clothes as I have."—Vancouver Province.

Boiling It Down

The reporter came idly into the office. "Well," said the editor, "what did our eminent statesman have to say?"

"Nothing."

"Well, keep it down to a column."

—Louisville Courier-Journal.

With Service

Lady (phoning music store proprietor)—"I have just had my radio installed and it is working fine, but the orchestra in Cincinnati is playing too fast. Is there any way that I can slow it down?"—Louisville Satyr.

Mrs. Bloop: Does your car have a worm drive?

Mrs. Bloop: Yes, but I tell him where to drive.

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KOEHRING — Pavers, Mixers; Power Shovels, Pull Shovels, Cranes, Draglines; Dump-tors. INSLEY — Excavators; Concrete Placing Equipment Cars, Buckets, Derricks. T. L. SMITH — Tilting and Non-tilting Mixers, Pavers, Weigh-Mix. PARSONS — Trench Excavators, Backfillers. C. H. & E. — Portable Saw Rigs, Pumps, Hoists, Material Elevators. KWIK-MIX — Mixers; Concrete, Plaster and Mortar.



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In handling the full N. E. C. lines, we are in position to give you exceptional service on an extensive line of equipment! In becoming the N.E.C. representative in this territory we have assumed an obligation to maintain the highest standard of service for these lines! No matter what your equipment needs are, phone us first! If we don't handle it, we'll tell you who does!

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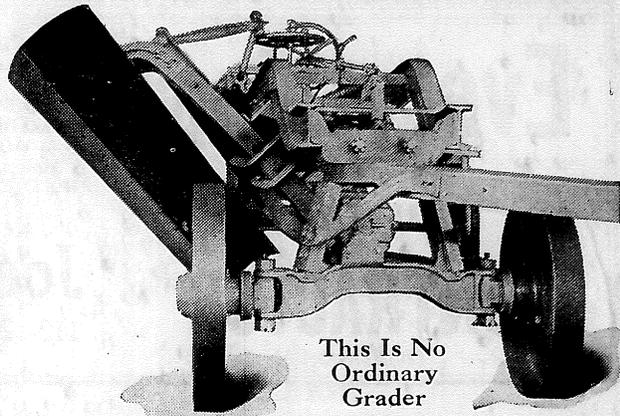
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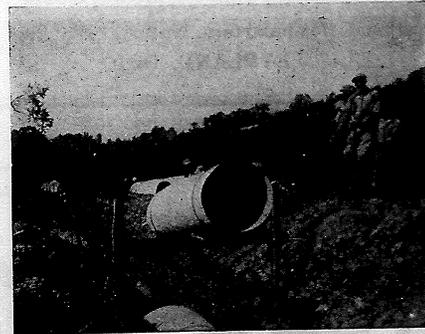
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Tractors and trucks to whose lot falls service in road construction are unaccustomed to travel on roads "smooth as a billiard table."

Their's is the job of the worker, preparing the way for their brothers and it's no easy task!

Of course its hard on the constitution of tractor or truck to grind its way along unbroken paths. To make their work easier, give them the best of lubrication. They'll repay you in longer service and lower cost of maintenance.

En-ar-co Motor Oil and other En-ar-co Lubricants are built for extra duty—for unusual demands. They are the economical lubricants for your equipment.

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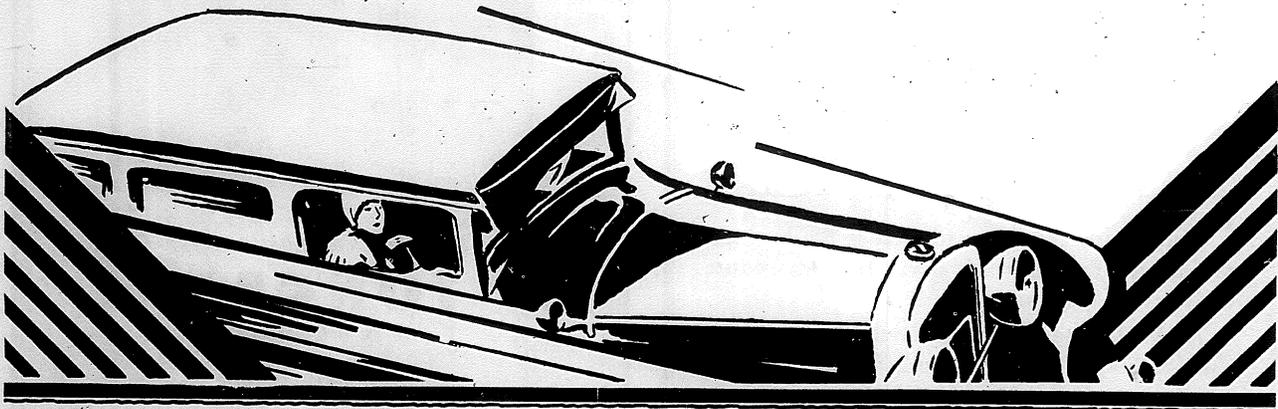
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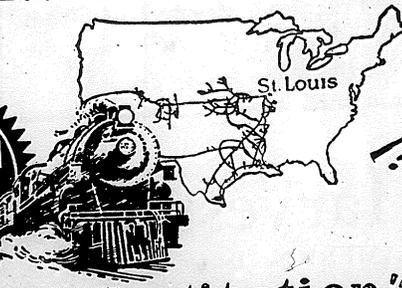
BIG BUSINESS



RAILROAD WORK naturally attracts the finest men and women in America, primarily, I believe, because it offers the greatest opportunity for service. And there is no happiness that can equal the soul-satisfaction that comes to an individual with the knowledge that some worth-while service has been achieved to make the world a better place in which to live. This is one of the reasons the Missouri Pacific Lines is a genuine "Service Institution."

- q The wonderful morale of the Missouri Pacific organization has been remarked throughout the industrial world. Many have believed there is some mystery in it. Others suspect it is the result of lucky accident. It is neither. But it is worthy of note and comment. Because railroads generally and the Missouri Pacific particularly have drawn into their ranks the best of the citizenship and because once engaged in it few ever leave railroad work. As a result there has been built up over a long period of years a great industrial family.
- q Missouri Pacific men and women are good citizens as well as good railroaders. They are valuable assets to every community in which they work and live. And their abilities are not limited to the field of transportation. Among other things, the employees of the Missouri Pacific, themselves, own and operate a hospital system that comes within the classification of "Big Business."
- q This "business" with revenues of \$745,901.47 in 1929 and operating expenses of \$661,049.65 and with buildings and other assets valued at \$1,603,582.11 cared for 3,911 patients last year, with an average of 140 patients a day and an average of 13 days hospitalization per patient or a total of 50,962 hospital days. The entire institution is owned, governed and operated by the employees and their representatives and this is only one of the many reasons for the magnificent morale and esprit de corps of the Missouri Pacific family of 60,000 workers.
- q The management of the property maintains a liberal pension system for employees incapacitated through illness, injury or age and this, also, is another reason for the wonderful family feeling of loyalty that makes the Missouri Pacific organization an outstanding one.
- q Both the management and the Missouri Pacific family have complete realization of their duties and responsibilities as citizens and human beings as well as railroaders and both are striving to live up to the highest ideals and traditions of our country as well as those of our railroad. These are only a few of the reasons the public gets "super service" from the Missouri Pacific, "A Service Institution."

I solicit your co-operation and assistance.



W. B. Egan
President

"A Service Institution"

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INTERNATIONAL HARVESTER has engineered a remarkable line of Heavy Duty Speed trucks—engineered to the most modern truck standards—completely new, and on display now.

Five forward speeds in all models, and four wheel brakes on all models, provide the new International Heavy Duty line with the essential triple combination of *great pulling power, speed on the straight-away, and the ability to stop.*

New engines, new clutches, new transmissions, more comfortable cabs, easier driving, redesigned hood and radiator, improved appearance—all contribute to the success of these new trucks. Their performance is based on 18 months of engineering and test, and backed by 25 years of successful truck building.

The new Heavy-Duties are built in sizes ranging from 2 to 5 tons, in wheel-base lengths suitable for every operation of road building, or whatever your job may be.

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