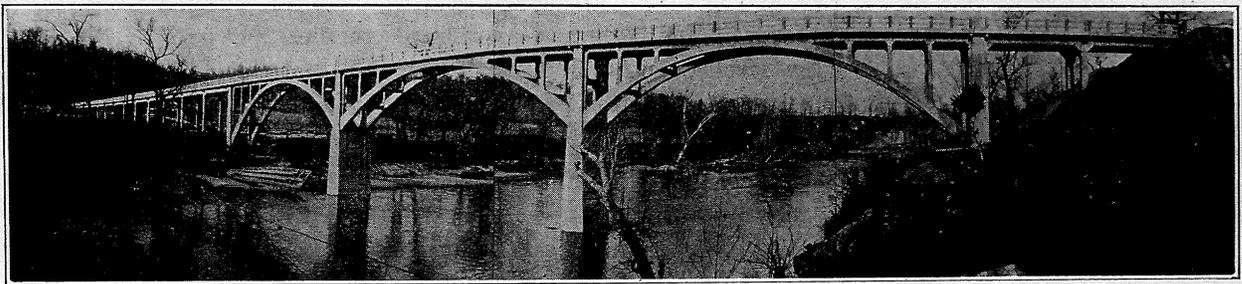


ARKANSAS HIGHWAYS

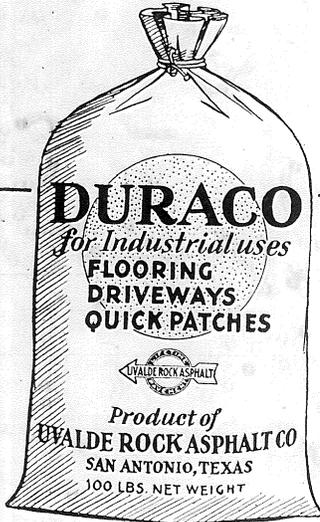
**The Official Magazine of the Arkansas
State Highway Department, Little Rock**



BUFFALO RIVER BRIDGE

New Bridge Opens Near St. Joe

The bridge over Buffalo River on Route No. 65 pictured above, between Marshall and Harrison, replaces a Ferry at this point. Considerable delays to traffic were often encountered owing to the Ferry service being discontinued because of recurrent high waters occurring. An uninterrupted service is now assured this important route through the construction of the bridge well above high water level. The structure is 1,000 feet long with twenty feet clear roadway and cost \$110,000.00.



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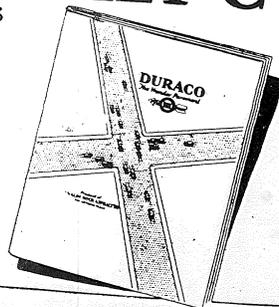
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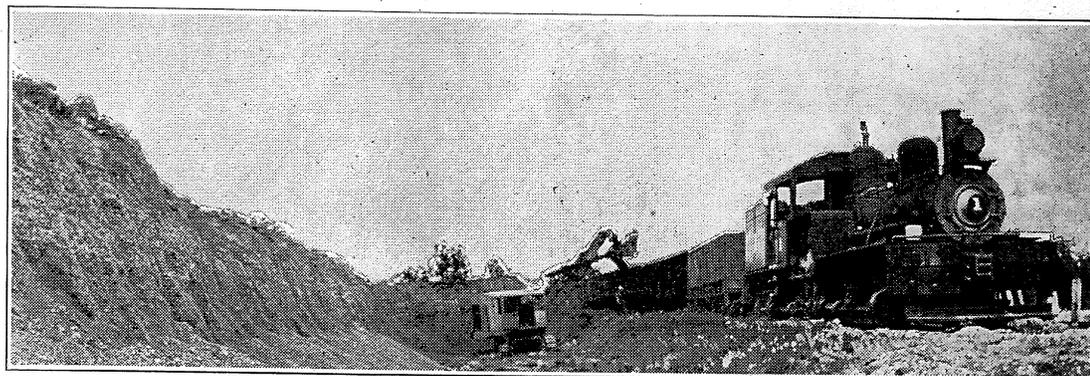
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WRITE FOR CATALOG

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

FEBRUARY, 1930

No. 2

ABOUT THE BOND SITUATION

By DWIGHT H. BLACKWOOD, Chairman of the Arkansas Highway Commission

So many anxious inquiries have come to the Highway Department relative to the recent issue of \$18,000,000 road bonds which was not sold, I think it well and proper to explain the situation here, and in full.

These bonds did not sell for the reason there is a statutory prohibition against the sale of Arkansas bonds at less than the equivalent of par at five per cent interest. Two syndicates, including 49 of the largest bond dealers in the country, were represented at the meeting and explained that the condition of the bond market is such that bonds cannot be purchased on the basis of par at five per cent and be handled by the dealers except at a loss.

In addition, these representatives explained that it would not be a wise policy to offer the \$18,000,000 issue in installments or small issues, stating that frequent sales of small bond issues would result in less competition and higher interest rates. They also said that if part of an issue was unsold when the next issue was offered for sale, bond houses would be reluctant to bid on the new issue and if bids were submitted it would be on a basis which would permit the purchaser to undersell the holder of the previous issue.

Such price-cutting, it is perfectly obvious, would demoralize the market to the detriment of Arkansas securities.

Since the law provides that when the bond market is in such condition that it is impossible to sell long term bonds, the Note Board may sell short term notes which are to be redeemed or refunded within twelve months, that is what we will do to obtain funds to carry on the highway construction program during the summer.

The short term notes differ from the bonds only in the fact that they are given to Bankers who will loan on them for the period prescribed by law, and the short term notes are paid out of the funds from the next bond issue.

A Review of the Present Road Program

By W. W. Zass, Engineer of Construction

Similar to the two preceding years of the present highway development program in the State of Arkansas, under the provisions of Act No. 11 of 1927 with the various amendments thereto, a large volume of construction work was initiated during the calendar year 1929. Contract awards exceeded either the 1927 level or the 1928 level in both number and amount of commitments, and for the purpose of comparison the totals for each of the three years are listed below:

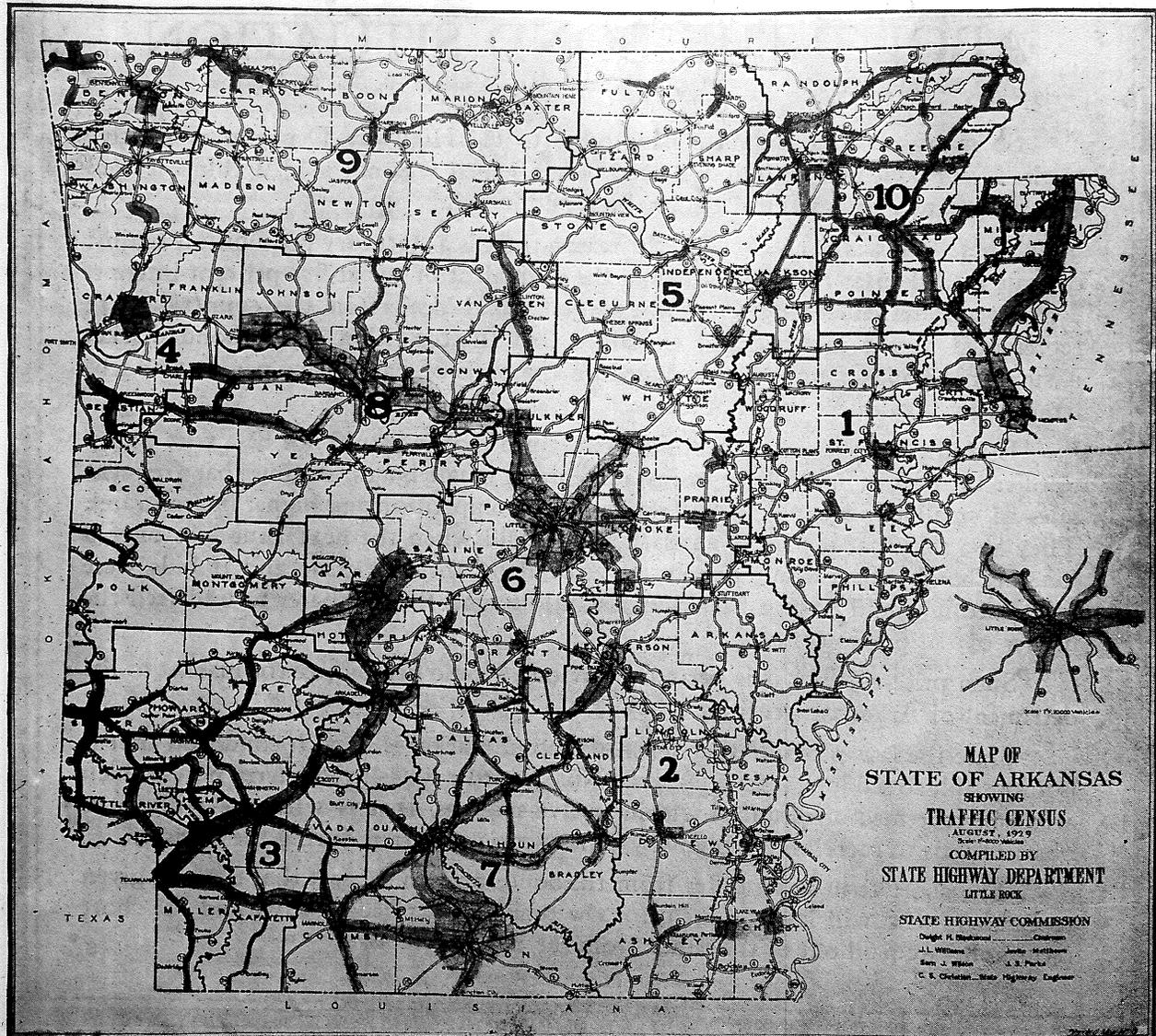
Calendar Year	Number of Contract Awards	Total Commitment
1927	175	\$13,154,188.16
1928	195	9,938,246.07
1929	219	16,858,300.39

In addition to the volume placed under contract during the period stated certain construction was performed with State forces where it was considered advisable by

the State Highway Commission. Such work consisted in general of small jobs of a type or character uninviting in nature to the contractor at normal unit prices owing to the small quantities involved over a large mileage but which could be effectively performed by State forces where equipment required could be largely alternated between such work and the normal maintenance duties. The volume of State force work initiated during the past three-year period is shown as follows:

Calendar Year	Number of Projects	Total Commitment
1927	179	\$2,837,173.32
1928	176	2,205,185.55
1929	85	1,579,451.52

The state was again fortunate in that the 1929 highway dollar showed a considerable greater purchasing power than in preceding years, practically all major items

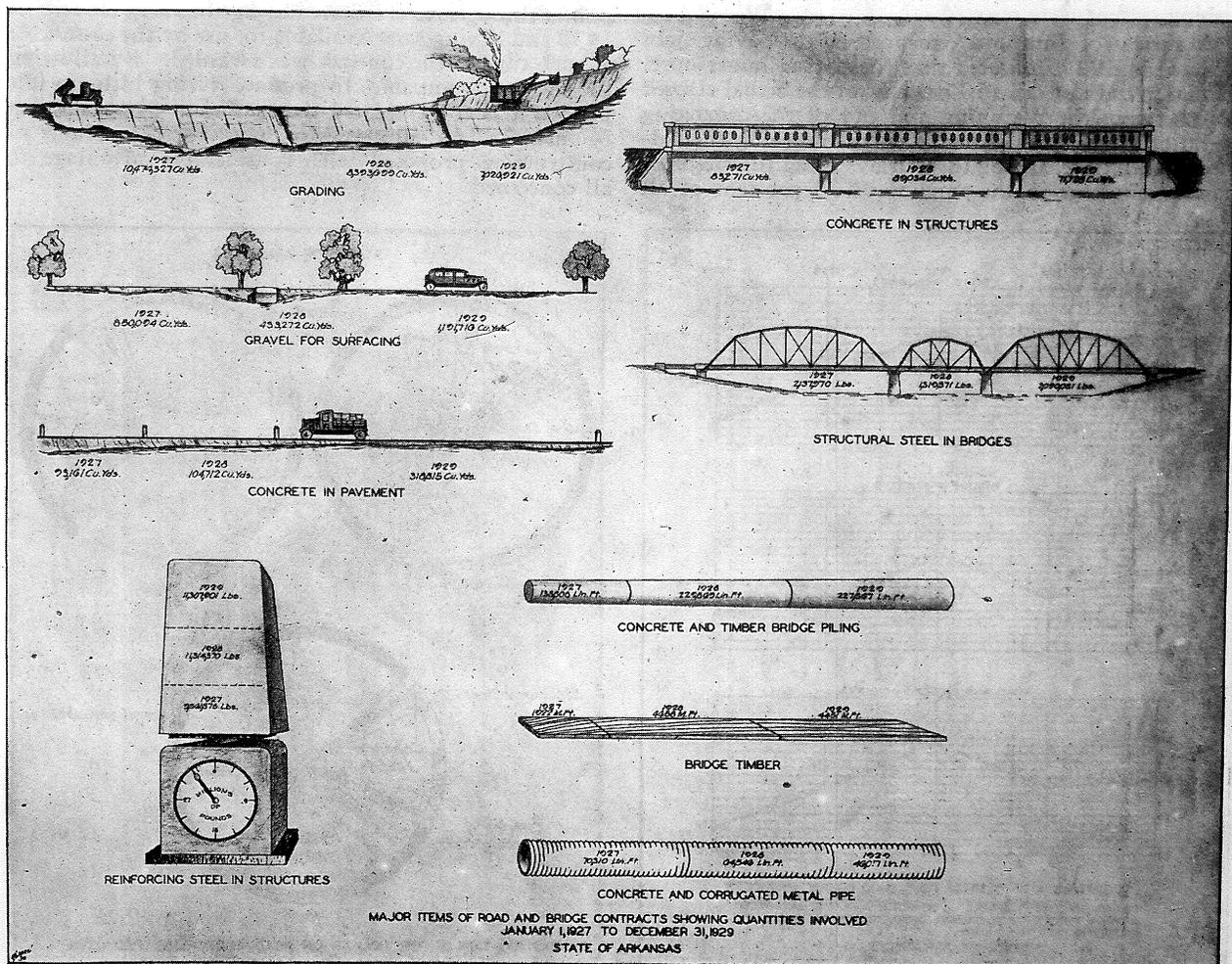


of the 1929 construction schedule showing a decline over the 1927 and 1928 period. An analysis of Plate One indicates the general trend of the yearly price level for the five-year period 1925 to 1929, inclusive. The 1925 period was selected as the basic year with which to compare the price levels of subsequent years inasmuch as this was the first full year under which the Highway Department operated as an independent unit, free of road improvement districts, under the provisions of Act No. 5 of the Special Session of 1923. A national construction cost index compiled by a leading technical journal shows a curve over the same period with less variation and more nearly constant than the Arkansas curve, but with no wide divergence except in the 1929 period, wherein the Arkansas curve continues a downward trend while the national curve tends to a uniform level. A greater fluctuation is to be expected in the Arkansas price level than in the national, as the reaction from variations in costs of materials and labor are more quickly apparent and are not counteracted to the same extent by alternate trends in other sections.

The decrease evident in the 1929 price level in comparison to the price level of the preceding years designated was due principally to the decline in the unit bid prices received for items pertaining to concrete and to the hauling and placing of gravel surfacing materials. These

items in conjunction with the item of roadway excavation, which also showed a decline over the price level of the two preceding years, formed a large percentage of the expenditure of the 1929 program.

The decline in price level occurring in the items pertaining to concrete was due principally to a decrease in the price of Portland cement, except in the instance of the item of Portland cement concrete pavement for which the decline can be attributed about equally between two factors, the first as previously mentioned being the decrease in the price of cement and the second being due to a revision in specifications allowing a lesser cement content per cubic yard of concrete but providing for a more rigid control of the paving operations. The decline in price level evident in the items of hauling and placing gravel surfacing can be attributed to no other factor than increased efficiency on the part of the contractor in handling this phase of the work as the construction practice during the 1929 period varied in no essential detail from that effective throughout the 1928 period. The decline in price level evidenced in all classes of roadway grading work except in the item of earth embankment is attributable to the factor that much of the 1929 work was more accessible than the work of like character in 1927 and 1928 and involved shorter hauls for materials, feedstuffs and equipment. All other



features relating to this type of work remained practically constant with those of previous years. The average weighted prices on all classes of contract work for the period 1925 to 1929 inclusive is shown by Tables One and Two. A perusal of these tables as well as a study of Plate One indicates that the State in the promulgating of a highway program of the proportions assumed during the past three-year period has suffered no disadvantages to date in regard to the unit bid prices received on contract work.

The material situation received considerable consideration during the 1929 period both from the viewpoint of available supply and as to prices quoted. An intensive investigation of local gravel deposits was made as well as a survey of the commercial producing plants of the State. The question as to whether the State could purchase cement cheaper than the contractor also received considerable agitation during this period and bids were received June 19, 1929, for the furnishing of cement at designated points throughout the State in quantities estimated to cover the balance of the calendar year requirements. Alternate proposals were received at the same time on contract projects for performing the work both with and without State furnished cement. A review of the bids submitted evidenced that no savings would accrue to the department through the purchase and use of State furnished cement and all bids for furnishing cement were rejected.

A survey of Portland cement concrete paving jobs initiated in 1929 indicated that the paving mixer operated an average of only 50 per cent of the actual elapsed time between the beginning and end of the concreting operations, numerous causes of delay absorbing the balance of such time, among these delays being the factor of material shortage in the amount of 20 per cent of all

delays or 10 per cent of the actual elapsed time. In general the lack of coarse aggregate predominated in computing delays due to material shortage although instances occurred where the mixer was forced to suspend operations owing to the available supply of cement or of fine aggregate becoming exhausted. In general, also, the lack of coarse aggregate was due to the producer being unable to supply the demand rather than through failure in ordering on the part of the contractor or delay in railroad movements as was the frequent cause in the case of cement and fine aggregate.

Although the material situation did not assume alarming proportions during the 1929 period through which approximately 200 miles of high type surfacing was placed under contract it was felt that some provision should be made to insure the minimum delay possible on such work initiated in 1930, particularly in view of the fact that demands were to be made on the material producer during that period for aggregate to be used on a considerable mileage of bituminous retread work in addition to the material required for approximately the same mileage of high type surfacing as was placed under contract in 1929. In view of this situation the State Highway Commission asked for bids November 29, 1929, for the furnishing of fine and coarse aggregate for Portland cement concrete pavement work with the intent of stock piling such material at designated points throughout the State during the early months of 1930 and having same available for use by the contractor at such time as the contract was awarded. By allowing the material companies to produce during hitherto idle periods it is contemplated that sufficient aggregates can be furnished for all classes of work for the volume of construction proposed with considerable advantage to all concerned.

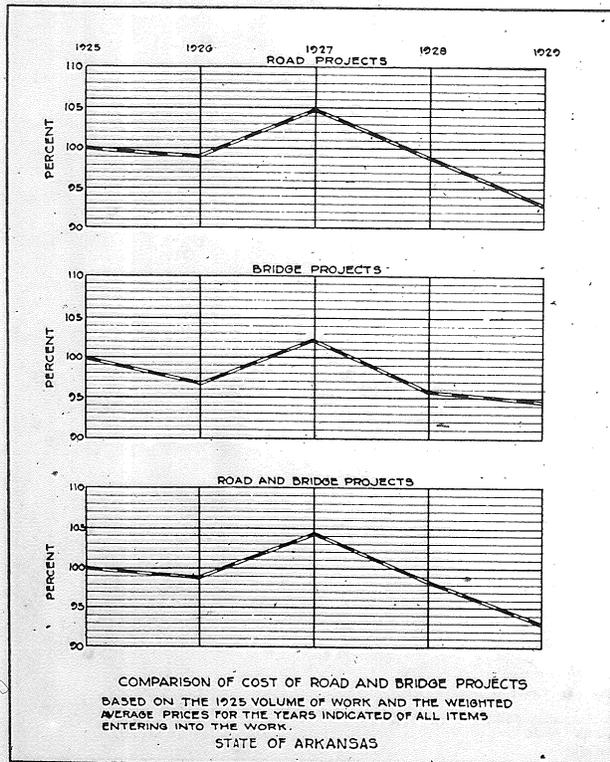


PLATE N° 1

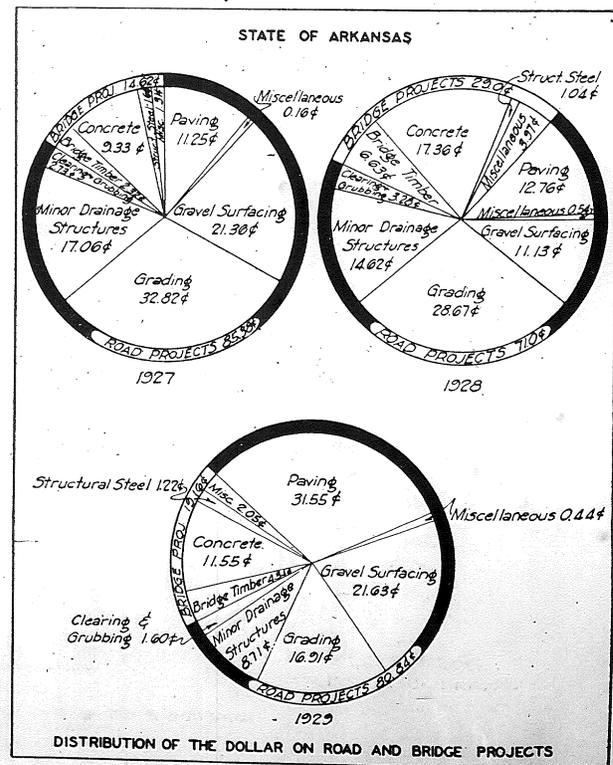


PLATE N° 2

A study of Plate Two indicates that a greater percentage of contract awards during the 1929 period covered commitments for paving work than during either the 1927 or the 1928 period. This is a logical development of the program in that the first biennial period was required for the construction and proper development of the roadbed in order that the paving would not be affected throughout subsidence and settlement. Similarly the 1930 program will embrace a still larger percentage of hard surfaced and surface treated roads than has been evident in any of the preceding years of the period.

The legislative act under which the department is operating provided for bond issues in the amount of \$13,000,000 for 1927 and \$18,000,000 for each of the years 1928, 1929 and 1930, the proceeds to be applied to construction purposes, plus the amount of \$7,500,000 for use solely in the construction of State owned toll bridges. The total revenue available to the department from all sources includes the proceeds from the sale of bonds, receipts from automobile registration and gasoline tax and funds received in the form of Federal Aid. To the extent of the total receipts so obtained disbursements are made for Administration, Construction, Maintenance, Interest and Maturities on Road Improvement District Bonds assumed, Interest on State Highway Bonds, the Turnback to County Road Funds in the sum of \$1,800,000 annually, Expense of the Bus Division under the Railroad Commission jurisdiction, Expense of the Revenue Department including gasoline tax refunds in the sum of \$411,000 annually, and the expense incident to the office of the Assistant Attorney General. The type and extent of the construction work placed under commitment during the past three-year period is shown by Table Three.

It is evident that with an increased annual automobile registration and consumption of gasoline that receipts from this source will prove of material aid as a means of revenue to the highway fund. It is estimated that such receipts will show a cumulative increase in the amount of \$600,000 annually during the next five-year period or a gross increase of \$3,000,000 in the 1934 period over the 1929 period, providing no change is made in the present form of tax. Such increase will be counteracted to a considerable extent however by heavier maintenance charges due to the increased number of vehicles using the highways as well as to the heavier loadings now becoming predominant, also to the additional mileage necessary to maintain as new routes are completed and opened to public use.

In this connection a thought relative to the proper application of Federal Aid funds should be considered. Under existing statutes funds received as Federal Aid are devoted exclusively to construction purposes with the qualifying provision on the part of the national government that such construction be properly maintained by the State after completion. It is justly considered that proper maintenance is vital to the life of the completed road and the thought is advanced that it should be considered fair and equitable that the national government participate in maintenance expenditures on such completed highways as lie on the designated Federal Aid road system. It is suggested that such participation be based on a fixed annual sum per year per mile of completed road. On the basis of a maintenance cost of \$400 per mile, Federal participation in maintenance on approximately 2,000 miles of road now completed on the Federal Aid system in Arkansas would amount to \$400,000 annually, considering that Federal participation would be prorated on the basis of 50 per cent of

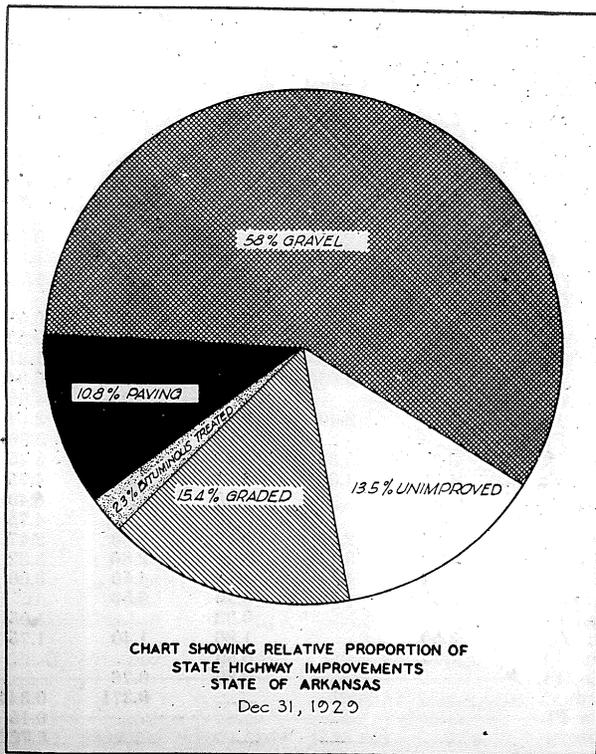


PLATE N° 3

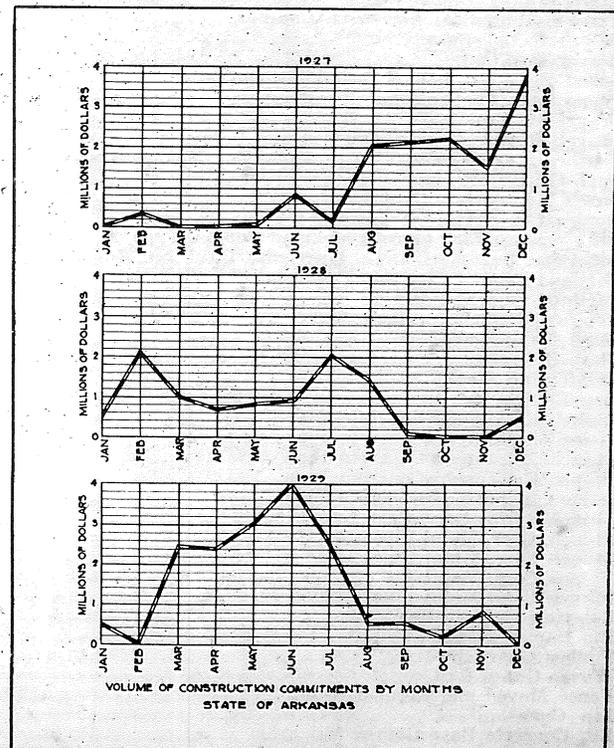


PLATE N° 4

such sum, or \$200 per mile. Should the National Congress authorize any increase in Federal Aid it is deemed desirable that such increase be used for participation in future maintenance work on completed highways rather than in additional construction work, assuring the several States co-operation in the maintenance required on those highways in which the Federal Government assisted in the improvement.

The State of Arkansas faces a particularly difficult problem in financing the development of its State highways in that while the State Highway System embraces a mileage considerably greater than the median of the mileage of all the States its automobile registration is considerably below the median of the automobile registration of such States, 40 of the 48 States of the Union having an automobile registration and 32 of the 48 States having a ratio of population per mile of State

highway, in excess of the automobile registration or ratio of population per mile of State highway in Arkansas. The foregoing figures are based on statistics available at the close of the 1927 period. In view of the foregoing facts it is evident that if the citizens of Arkansas desire a system of State highways comparable to States of other sections of denser population and greater development that such a system of highways can be financed only if a greater revenue per automobile registered is obtained in this State than in other States of greater registration. Stated in other terms, to obtain an annual revenue comparable to that of adjacent States for highway development Arkansas must levy a higher tax or toll on each automobile registered and each gallon of gasoline consumed than such tax or toll levied in the adjacent State with a denser population and greater automobile registration.

(Continued on page 12)

TABLE No. 1
Weighted Average Unit Prices of Contract Items
ROAD PROJECTS

ITEM	UNIT	1925	1926	1927	1928	1929
Clearing	Acre	30.16	53.51	42.02	42.78	42.62
Grubbing	Acre	73.81	99.61	76.10	68.68	68.05
Solid Rock Excavation, Roadway	Cu. Yd.	1.42	1.50	1.27	1.17	1.15
Loose Rock Excavation, Roadway	Cu. Yd.	0.644	0.637	0.523	0.458	-----
Earth Excavation, Roadway	Cu. Yd.	0.242	0.252	0.288	0.28	0.27
Common Excavation, Roadway	Cu. Yd.	0.34	-----	0.50	0.325	0.316
Dry Excavation for Structures	Cu. Yd.	1.01	0.97	0.97	0.94	1.00
Wet Excavation for Structures	Cu. Yd.	1.81	2.00	3.16	2.61	3.00
Solid Rock Excavation for Structures	Cu. Yd.	-----	-----	3.25	3.10	2.77
Earth Embankment, Roadway	Cu. Yd.	-----	-----	-----	0.146	0.205
Borrow Excavation, Roadway	Cu. Yd.	0.261	0.327	0.294	0.277	0.263
Stripping Material Pits	Cu. Yd.	0.20	-----	0.28	0.247	0.296
Overhaul	Sta. Yd.	-----	0.02	0.02	0.02	0.02
Fine Grading, Subgrade and Shoulders	Sq. Yd.	-----	0.05	0.048	0.043	0.042
Extra Rolling Embankment	Hour	-----	-----	-----	1.50	2.44
Extra Rolling Base and Surf. Course	Hour	-----	-----	-----	-----	2.50
Reconstructed Base Course	Sq. Yd.	0.078	0.05	-----	-----	0.09
Gravel Base Course	Cu. Yd.	-----	-----	-----	-----	0.75
Base Course Mtl. hauled each additional mile	Cu. Yd.	0.27	0.25	-----	-----	0.22
Prime Coat Application	Sq. Yd.	-----	-----	-----	-----	0.058
Gravel Surface Course	Cu. Yd.	0.685	0.643	0.673	0.624	0.563
Gravel Surface Course, Crushed and Screened	Cu. Yd.	-----	-----	-----	-----	0.893
Crushed Stone Surface Course, Quarried, Crushed and Screened	Cu. Yd.	-----	-----	-----	2.62	2.21
Surf. Course Mtl. hauled each additional mile	Cu. Yd.	0.217	0.209	0.215	0.206	0.167
Single Bit. Surface Treatment	Sq. Yd.	0.178	-----	-----	-----	-----
Double Bit. Surface Treatment	Sq. Yd.	-----	0.28	-----	-----	-----
Bit. Conc. Surface Course, Modified Topeka Type, 2-inch	Sq. Yd.	1.18	-----	-----	-----	0.89
Bit. Conc. Surface Course, Warrenite Bitulithic, 2-inch	Sq. Yd.	-----	-----	-----	-----	1.336
Portland Cement Concrete Pavement, 9-inch, 6-inch, 9-inch	Sq. Yd.	2.272	2.176	2.196	1.879	1.787
Portland Cement Concrete Base, 5-inch	Sq. Yd.	1.43	-----	-----	-----	-----
Reinforced Steel for Pavement	Lb.	-----	-----	0.06	0.052	0.056
Class A Concrete	Cu. Yd.	21.16	21.88	22.34	21.50	20.29
Class B Concrete	Cu. Yd.	20.86	21.59	22.43	21.81	21.31
Reinforcing Steel	Lb.	0.056	0.056	0.053	0.052	0.049
Dry Rubble Masonry	Cu. Yd.	-----	-----	-----	5.70	4.00
18-inch Reinforced Concrete Pipe	Lin. Ft.	2.19	2.40	2.72	2.64	2.64
21-inch Reinforced Concrete Pipe	Lin. Ft.	-----	-----	-----	-----	3.00
24-inch Reinforced Concrete Pipe	Lin. Ft.	3.31	3.33	3.64	3.61	3.45
30-inch Reinforced Concrete Pipe	Lin. Ft.	4.75	4.38	4.56	4.61	4.75
36-inch Reinforced Concrete Pipe	Lin. Ft.	5.91	-----	6.40	6.50	6.49
24-inch Spiral Corr. Cast Iron Pipe	Lin. Ft.	-----	-----	-----	-----	4.75
18-inch. Corr. Metal Pipe	Lin. Ft.	2.04	2.03	2.17	2.30	2.47
24-inch Corr. Metal Pipe	Lin. Ft.	2.93	3.14	3.31	2.86	3.32
30-inch Corr. Metal Pipe	Lin. Ft.	3.93	4.00	3.63	4.50	3.00
36-inch Corr. Metal Pipe	Lin. Ft.	5.25	4.72	5.10	6.50	-----
Relaying Culvert Pipe	Lin. Ft.	-----	-----	0.92	-----	1.05
Rip Rap (1-ft. thick)	Sq. Yd.	3.50	-----	1.86	1.40	1.75
Timber Guard Rail	Lin. Ft.	1.00	-----	0.59	-----	-----
Woven Guard Rail	Lin. Ft.	-----	-----	0.79	0.76	-----
Fence Moved and Reconstructed	Rod	-----	-----	-----	0.371	0.344
Lip Curb	Lin. Ft.	-----	-----	-----	-----	0.15
Bit. Concrete Base Course Mtl.	Ton	-----	-----	-----	-----	6.72

TABLE No. 2
Weighted Average Unit Prices of Contract Items
BRIDGE PROJECTS

ITEM	UNIT	1925	1926	1927	1928	1929
Clearing	Acre	-----	35.00	36.42	72.41	54.54
Grubbing	Acre	-----	-----	116.33	92.80	75.00
Solid Rock Excav., Roadway	Cu. Yd.	-----	-----	2.00	1.53	1.50
Loose Rock Excav., Roadway	Cu. Yd.	1.00	0.60	1.00	0.665	1.00
Earth Excavation, Roadway	Cu. Yd.	0.356	0.331	0.370	0.356	0.287
Common Excav., Roadway	Cu. Yd.	-----	-----	-----	0.445	0.402
Dry Excav. for Structures	Cu. Yd.	1.370	1.575	1.167	1.394	1.685
Wet Excav. for Structures	Cu. Yd.	4.917	3.151	5.385	2.879	3.683
Solid Rock Excavation for Structures	Cu. Yd.	4.833	5.33	4.453	4.692	5.190
Borrow Excav., Roadway	Cu. Yd.	-----	0.40	0.365	0.313	0.328
Bituminous Wearing Surf., 2-inch	Sq. Yd.	-----	-----	-----	-----	2.00
Untreated Bridge Timber	M. Ft. B. M.	66.346	64.356	58.954	76.368	73.374
Treated Bridge Timber	M. Ft. B. M.	95.087	94.005	97.704	93.512	90.769
Class A Concrete	Cu. Yd.	21.332	21.795	21.196	20.549	20.021
Class B Concrete	Cu. Yd.	19.075	18.00	24.14	20.114	22.841
Class S Concrete	Cu. Yd.	20.00	21.054	22.048	21.233	20.366
Reinforcing Steel	Lb.	0.053	0.058	0.051	0.049	0.047
Structural Steel in Bm. Bridges	Lb.	0.063	-----	0.061	0.066	0.065
Structural Steel in Truss Bridges	Lb.	0.068	0.065	0.070	0.071	0.067
Dry Rubble Masonry	Cu. Yd.	-----	-----	-----	-----	8.31
Earth Fill on Arch Rings	Cu. Yd.	0.50	-----	-----	0.50	0.479
Untreated Timber Piling	Lin. Ft.	1.00	0.90	0.795	0.753	0.71
Treated Timber Piling	Lin. Ft.	0.973	0.934	0.967	0.926	0.825
Treated Timber Piling cut off	Lin. Ft.	-----	-----	-----	0.50	0.50
Precast Concrete Piling	Lin. Ft.	-----	-----	3.00	2.74	2.16
Rip Rap (1-ft. thick)	Sq. Yd.	0.677	0.619	1.803	1.805	1.829
Concrete Railing for Structures	Lin. Ft.	1.768	1.577	2.063	1.829	1.763
Machinery	Lb.	-----	-----	0.38	-----	0.23

TABLE No. 3
Contracts Awarded January 1, 1927 to December 31, 1929

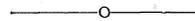
COMPLETED										
CONTRACTS AWARDS SEGREGATED INTO MAJOR FEATURES OF—										
District Number	Total Length of Project As Per Contract Awards Miles	Grading and Minor Drainage Structures Miles	Gravel Surfacing Miles	Burnt Shale Surfacing Miles	Cement Concrete Paving Miles	Bituminous Concrete Paving Miles	Asphaltic Surface Treatment Miles	Timber Bridges Feet	Concrete Bridges Feet	Steel Bridges Feet
1	102.940	26.054	24.668	-----	-----	-----	-----	5419.78	4872.43	1094.00
2	151.668	13.057	129.203	-----	1.473	-----	-----	5085.80	90.00	130.00
3	394.342	190.435	216.176	-----	-----	-----	-----	2091.76	2275.04	154.16
4	355.751	185.195	70.862	35.767	69.727	0.644	-----	895.25	5176.23	70.00
5	270.407	141.097	163.862	-----	-----	-----	-----	2668.00	8314.23	541.08
6	273.278	195.439	187.521	-----	17.346	-----	5.476	5203.00	5714.77	63.00
7	400.539	269.866	190.501	-----	57.412	-----	-----	8912.72	1581.17	319.00
8	297.297	188.673	63.280	2.616	34.209	-----	-----	1225.13	4556.97	2352.01
9	161.642	126.306	44.649	-----	-----	-----	-----	367.83	1643.79	853.42
10	231.965	196.416	138.813	-----	19.386	-----	-----	4858.06	1995.71	1027.67
Inter-Dist.	49.503	41.314	21.432	-----	-----	-----	-----	438.00	2451.09	-----
TOTAL	2689.332	1573.852	1320.967	45.383	199.553	0.644	5.476	37165.33	38671.43	6604.34
INCOMPLETE										
1	86.396	60.751	26.856	-----	12.774	14.126	-----	3024.88	769.33	38.00
2	42.849	33.375	14.547	-----	14.229	-----	-----	-----	161.50	-----
3	79.534	64.511	13.577	-----	15.602	-----	6.288	667.00	5935.94	1031.16
4	101.644	70.538	27.532	-----	14.225	-----	-----	648.33	2895.83	450.58
5	64.815	34.758	29.235	-----	-----	-----	-----	587.08	3016.83	932.00
6	49.625	48.925	-----	-----	-----	-----	-----	1452.00	2164.96	80.00
7	51.294	28.842	17.250	-----	1.446	-----	-----	4137.16	7583.00	1620.14
8	129.114	48.753	63.650	11.922	10.015	-----	-----	914.33	791.54	120.00
9	67.108	31.702	43.717	-----	-----	-----	-----	414.00	3966.49	443.50
10	91.983	66.825	36.113	-----	0.686	8.911	-----	1352.33	2724.17	783.21
Inter-Dist.	28.540	8.753	-----	-----	10.954	6.997	-----	-----	8800.66	903.00
TOTAL	792.902	497.733	272.477	11.922	79.931	30.034	6.288	13197.11	38810.25	6401.59
TOTAL MILEAGE, COMPLETED AND INCOMPLETE										
TOTAL	3482.234	2071.585	1593.444	57.305	279.484	30.678	11.764	50362.44	77481.68	13005.93

It has been commonly accepted that a tax or toll on the automobile is an equitable method of financing the improvement of public highways in lieu of a tax on income or real or personal property in that the user of the highway is taxed in direct proportion to the extent of such use. Rather than as to the form of tax, the question is now pertinent as to the fair apportionment of funds so received among the various subdivisions of the State employed in road construction and maintenance, namely the State Highway Commission, the county and the municipality. The question of allocating funds to the various road-building agencies is both important and complex in view of the disparity and consequence of the mileage involved, there being estimated a total of 75,000 miles of public roads in the State, 8,700 of which are designated State Highways of which 156 miles are routed through cities and towns of the first and second class. The legislative act under which the State Highway Commission is now operating provides for a return to the county for local road development and aid to cities and towns of the first and second class in the improvement of State Highway routings through such towns and cities. Approximately 7 per cent of the total receipts of the State Highway Commission are now diverted to this form of improvement, leaving 93 per cent of such receipts to the development and maintenance of the State Highway System.

While the State highway system forms only about 12 per cent of the total road mileage of the State, the traffic and tonnage carried by such mileage is probably far in excess of the traffic and tonnage carried by the balance of the public road mileage existent, the State highway system forming the primary routings or arteries of travel. No traffic census is available showing the

density of traffic on roads other than State highways but it is anticipated that but in few instances does the traffic on any county road approach the normal indicated by such census on roads on the State highway system.

Until the State highway system is fully developed it should be considered imperative that the major portion of funds available should be devoted to such development. When a connected system of State highways has been perfected it should be considered equitable to concentrate upon the secondary or county road requirements to the extent that they may be improved to the degree demanded by local traffic. In the ultimate, the people through the State Legislature, have the means of decision as to the priority of highway development and to the extent and sources of revenue for such development.



OUR FRIENDS IN DISTRICT No. SEVEN

Pictured above is the office force which keeps the "ball rolling" in District No. Seven, of which Mr. L. R. Plemmons is the District Engineer.

Mr. Plemmons is head over Camden, Dallas, Cleveland, Ouachita, Calhoun, Bradley, Columbia and Union counties.

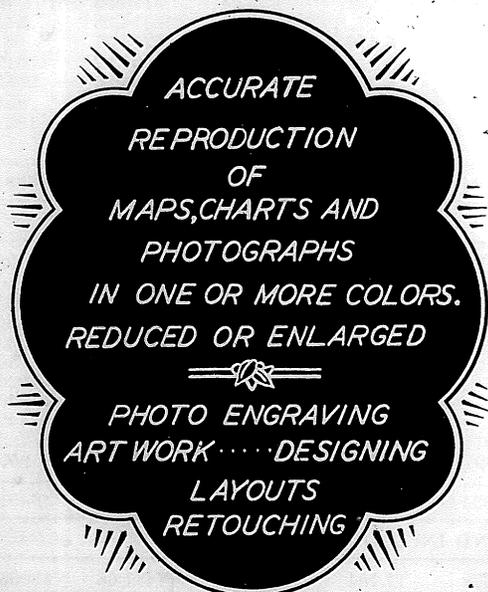
The office personnel is as follows:

Upper row, left to right: G. Gatham, Resident Engineer; J. L. McConnell, Clerk; R. H. Minturn, Resident Engineer; V. Williams, Resident Engineer; C. M. Matthews, Jr., Resident Engineer; J. H. Morgan, Resident Engineer; L. C. Brown, Resident Engineer; W. M. McKinney, District Mechanic.

Middle row, left to right: L. R. Plemmons, District Engineer, Eula M. Brannan, Bookkeeper; Bertie H. Gay, Stenographer; F. J. Herring, Construction Engineer; Edith Murphy, Stenographer.

Lower row, left to right: G. B. Moseley, District Maintenance Superintendent; G. W. Stanford, Office Engineer; J. W. Marshall, Chief Draftsman; F. R. McLain, Engineer of Surveys; J. F. McCuiston, District Maintenance Superintendent.

PEERLESS ENGRAVING CO.



“Secondary Road Development Our Next Duty”

An Address by Congressman, Claude A. Fuller, Supporting
Passage of the Dowell Federal Aid Bill

Mr. Chairman, ladies and gentlemen, in view of the apparent favorable sentiment of the House, I did not contemplate making any remarks in behalf of this bill. As a member of the Public Roads Committee, I strongly advocate its passage. For over 15 years I have been actively advocating, engaged in building, and assisting in the construction of good roads. Since the Federal Government has taken a hand and has been making appropriations for Federal roads it has acted as a wonderful incentive to take the United States out of the mud and has done more than any other one progressive congressional action to build up the country. When you improve the agricultural portion of this country you help those who live in the cities and towns. In Arkansas we have developed a wonderful road program, and there are very few States in the Union that have made as rapid stride as Arkansas in the last ten years. We realize no community can be what it was intended it should be if it does not build good roads, good schools, and good churches. We have our wonderful churches in every community and have advanced a policy of building good roads to good schools, and this procedure not only in our country but all over this Nation tends to advancement, prosperity, better civilization, and Christianity.

In answer to the gentlemen from Massachusetts, Mr. Luce, the reason the title of this bill refers to rural post roads is because it is the only way under our Constitution by which we can make appropriation for roads. While it is true the Federal appropriation only covers 7 per cent of the rural post roads of the United States, yet this is the only way by which we are authorized to appropriate this money. Before the committee, of which I am a member, I have advocated, and in the future will continue to advocate, a measure which will go further than the provisions of this bill. It may be the time has not yet arrived when my ideas should be enacted into law, but the time is soon coming when the Government should appropriate money for the real intent and purpose of this bill, and that is to appropriate money in conjunction with the counties and States, to improve and maintain the rural mail roads all over this Nation. Under present conditions only 7 per cent, as a maximum, of the rural mail routes of this Nation are included in the Federal appropriations for good roads.

In a great many cases a small per cent of the population are directly receiving the benefits under this appropriation, yet it tends to build up the country, State and Nation. I believe by building up the rural mail roads the mail carrier can go farther in a day and at less expense to the wear and tear of his vehicle and serve more people, thus in the long run it will be economy on the part of the Government and serve more people. By building up these rural post roads you not only help the mail service and accommodate more people, but you build up a farm-to-market road and enable the farmer living in the rural district to haul two tons over a road, which in many instances he can now haul only a half a ton in bad weather.

After all the real intent and purpose of this bill is to help the farmer in the rural country, and when you help the farmers in the rural communities you carry out the policy of both political parties in giving aid to the farmer, and at the same time you offer him an opportunity which he could not otherwise enjoy.

We have advanced far along this line and in many communities the farmers can take their families, after a day's work, and drive 15 or 20 miles to attend a show in the city and return and retire at his usual time. But we have not gone far enough; we need to go further into the rural and urban sections of the country and give aid to those who need aid. If this country prospers, as it has in the past and as we know it will in the future, we must reach the tiller of the soil; we must do everything within our power to furnish him facilities and accommodations in order that he may satisfy his boys and girls so they will be content to remain upon the farm, to offset the tendency of today, which is to obtain an education and go to the cities and towns where they can receive more pleasures, make more money, and better enjoy life. During my stay in Congress it shall be my ambition and desire for the Government to go further than is contemplated in this most worthy bill in giving aid to the rural post roads.

I cannot concur with some of the membership of this House from a few smaller States in the Union who are anxious to build wide roads so two cars can go abreast each way, such as contended is necessary in Massachusetts, to limit the Federal allotment to \$15,000 a mile.

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In these communities on account of being so thickly populated they have more cars, therefore collect more automobile tax and can well afford to add to the Federal appropriation and build the kind of roads they want. When we improve the condition of the Middle, Southern and Western States the manufacturing States of Massachusetts and Rhode Island reap a benefit.

In the State of Arkansas we have approximately 8,000 miles in our State road system. The Federal Government is only aiding in the building of 1,750 of this mileage, and yet we are well contended. This law contemplates building rural roads with Federal money, although the policy has been to connect county seat with county seat and State capitals with State capitals in order that we might have trunk lines running through this Nation and at the same time accommodate local people, and this policy is fair and just. If you remove the restriction of \$15,000 a mile which the Government will pay on any Federal road, you kill the real object and purpose of this bill. Those who live in the larger cities and towns, on account of the large vote and influence, will be an excuse and used for the purpose of building wide roads leading into and near these cities, thus sacrificing the opportunity to build roads into the country and through the State which is the object and purpose of this bill. I believe the limitation should not be removed at this time. At any rate this bill should not be amended, and if it develops in the future in some States, such as Massachusetts and Rhode Island, that the limitation of \$15,000 a mile should be removed, let the representatives from those States prepare an appropriate measure which would apply to their particular States.

The sole object and purpose of the pending bill is not to change the present law in any respect, except in the amount of the appropriation. We are now appropriating \$75,000,000 per year, and this bill increases that appropriation to \$125,000,000 per year for the next three years, or an increase of \$50,000,000 a year beginning July 1. For instance, Arkansas' allotment under the present law is \$1,293,086 per year, but under the proposed bill, we would receive \$2,155,143, or an increase of \$862,057.

I thought most everyone knew the only way to get Federal aid is through the Federal Highway Department, but it always goes, with scarcely an exception, upon the recommendation of the State Highway Department. In my State the highways are built from county seat to county seat, with a tendency for the through roads to

reach the capital and are being built on the theory of trunk lines from north to south and east to west through the State, and I understand this is a general policy pursued all over the Nation. I know this is true in the adjoining States of Missouri and Oklahoma. I have never heard of an occasion when the Federal Government would not give appropriations to meritorious roads, asked for by the State Highway Department.

This Congress was called into special session for farm relief. Nothing could be more in keeping with this policy than to increase the appropriation and build roads into the rural sections of the Nation. Nothing could do more to carry out our President's wish of a progressive building program.

"All roads lead to Rome" was the builder's motto which caused Rome to reach its great standing in the world's history. We are now rapidly approaching the time when all roads will lead to our State and National capitals, trunk lines throughout the Nation. Let us complete them and go farther into the rural communities. I came 1,200 miles from my home to the National capital in a car over a concrete road. We should keep up the good work in order that the rural farmer may enjoy the same benefit. When we help the rural communities the cities participate in the benefits.

ARKANSAS MATERIALS FAVORED

In a paving contract recently awarded in Magnolia it was specified that both Arkansas labor and Arkansas materials must be used wherever possible. This is an attitude quite generally prevalent and one on which there is little opportunity to quarrel. Everything being equal we owe it to our State to see that Arkansas road money stays just as long as possible in our State before it goes back to the great financial centers from which it came in the form of a loan or an advance on our own collection of the gasoline tax.

The cub reporter had just submitted his editorial for the day to the editor. Leaving the editorial room, he began to reflect upon what he had written and decided to go back to change something in it.

"I have a few corrections to make on the editorial that I submitted," he told the editor.

The editor reached into the waste-basket and pulled out the editorial.

"All right, but make it snappy, the waste-basket will be emptied in five minutes."

"Now that you have two cars I suppose you'll need a two-car garage."

"No, my wife'll use it nights and my son'll use it daytimes."

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Arkansas' Highway Income

An Editorial from the Fort Smith
Southwest American

The roads built in Arkansas since the Martineau highway law was passed, are beginning to show direct profits to the State in increased gasoline taxes:

David A. Gates, State Commissioner of Revenue, issued a statement in Little Rock the other day, estimating the gasoline taxes for the year ending next July 1 will reach \$7,000,000. He expressed the conviction that the gasoline taxes will reach \$10,000,000 a year by 1932. The increase this year over the previous year was approximately \$1,000,000.

Arkansas is just now beginning to have the experience which other States have had with better highways. The completion of hard roads increased the gasoline tax collections at remarkable speed. Every State which has tried construction of roads out of gasoline tax and automobile license fees has found a steady growth in its income for highway purposes, by reason of increasing use of the roads by resident owners of cars as well as increasing tourists traffic through the State. Arkansas is far from the saturation point in automobile ownership. Other States have found that construction of better roads increases automobile registration even as it increases gasoline consumption in the State. North Carolina has shown phenomenal growth in that respect, and is even now increasing its automobile registration at a rate considerable higher than the average. The limit of highway income from gas taxes and licenses fees is impossible to fix. More roads means more income from prospective car buyers; more use of automobiles, increases in registration, and therefore more funds for the construction of more roads. It is a never-ending cycle. Arkansas is just getting a good start.

CHEER UP!

The people who have achieved wealth are people who have had faith in the future, and strength to make stepping stones of stumbling blocks. It is frequently more detrimental to lose confidence than to lose capital, for a wavering faith is like a weak foundation that wrecks whatever rests upon it, be it ever so good.



Super-salesmanship

Sergeant O'Neill came upon downhearted Smith contemplating suicide from the Brooklyn Bridge.

"Before you commit this act," said the sergeant, "talk it over for fifteen minutes with me."

Whereupon the two strolled over to a bench and conversed for fifteen minutes. Presently they both walked back to the bridge and jumped over together.

Honor Among—

A ruckus had developed between rival sewer construction bosses, and harsh words were flying.

"That there ladder belongs to our gang, I tell you!" the first boss bellowed.

"The eternal hades it does!" the second yelled—or words to that effect. "One of my men stole that ladder from the telephone company with his own hands!"

Kipling's Comeback

When the report went around that Rudyard Kipling was getting a shilling a word for something he was writing, some Oxford students set about "ragging" him. Wiring Kipling a shilling, they said: "Please send us one of your words."

And right back came the answer, "Thanks."

—Cheese and Crackers.

The Expert

He had just stolen a hurried kiss.

"Don't you know any better than that?" she demanded indignantly.

"Sure!" he replied, "but they take more time."

Considerate of the Sergeant

Stable Sergeant: "D'ja ever ride a horse before?"

Rookie: "No."

Sergeant: "Ah! Here's just the animal for you. He has never been ridden. You can start out together."

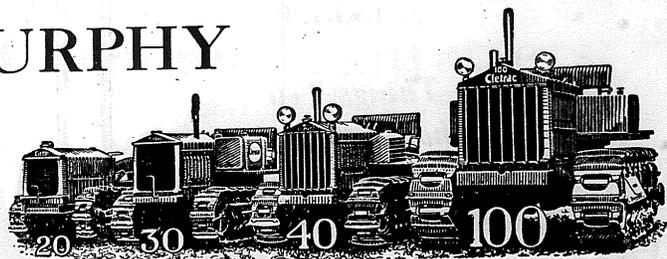
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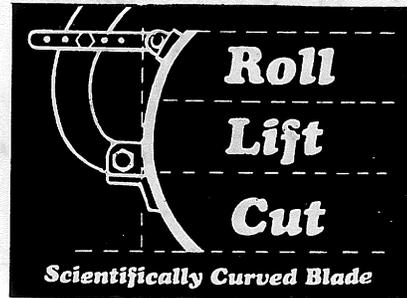


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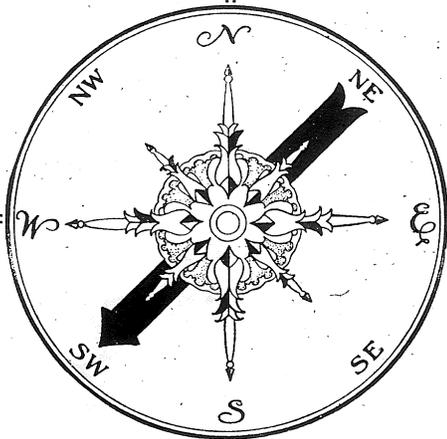
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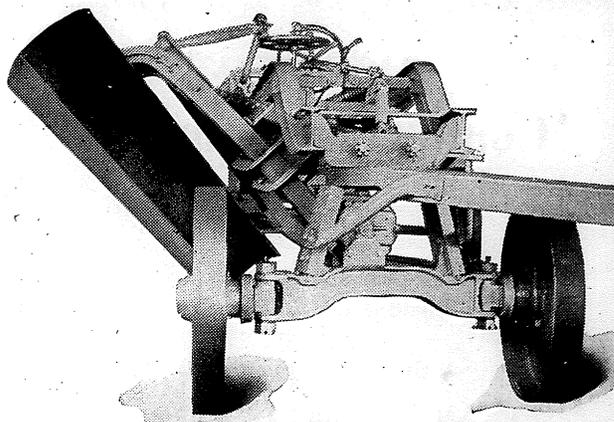
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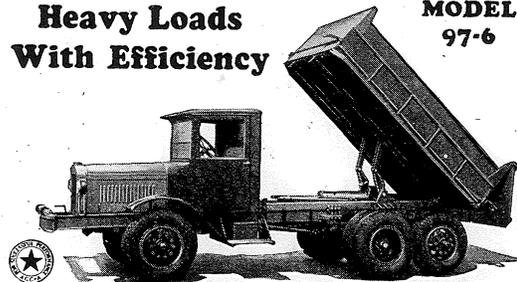
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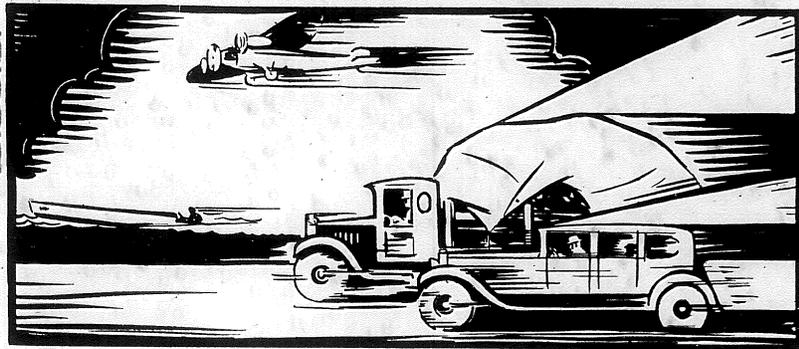
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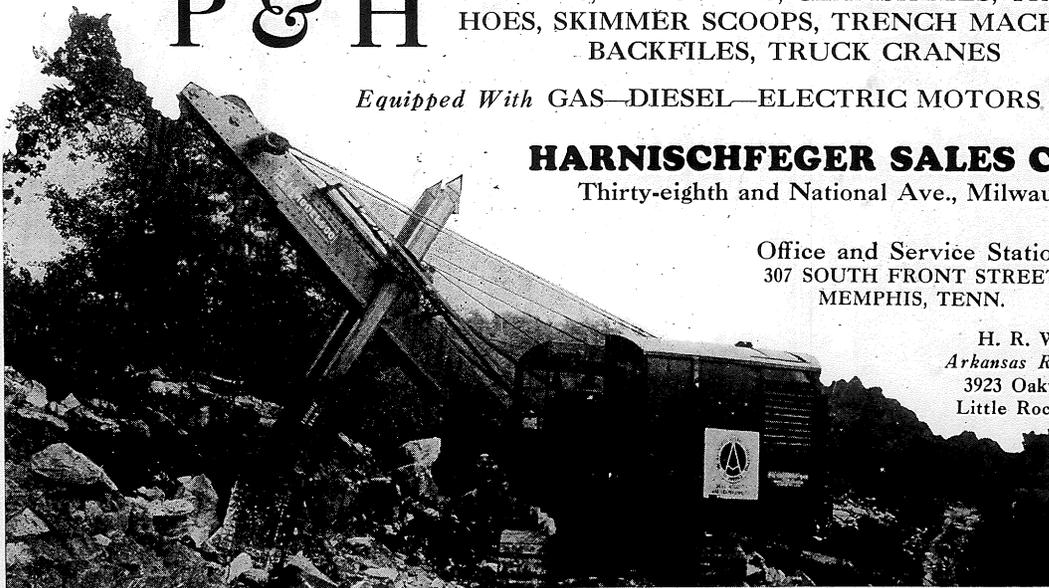
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