TABLE V

PASSENGER AUTOMOBILE COSTS

From Bulletin 69, Iowa State College

Composite car	Cents per mile
Gasoline	1 61
Oil	0 31
Tires	0 98
Maintenance	1 24
Depreciation	3 16
Interest	1 24
Insurance	0 31
Garage	0 83
License	0 59
Total	10 27

PROGRESS REPORT ON TIRE WEAR INVESTIGATION

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The following is a summarized report upon part of the work done during the past season on the cooperative tire wear project between the U S Bureau of Public Roads and the University of Kansas This part deals with the wear of balloon tires only Further data upon the wear of high pressure tires will be available later

The same general method has been used as in previous years A Dodge Bros Special Touring Car of 1925 model was substituted for the older model used in other years The speed was increased from 25 to 35 miles per hour A set of 30 x 5 77 All Weather Tread balloon tires were used throughout and the same two tires were kept in front and in rear These tires were made for this work by the Goodyear Tire & Rubber Company and were all from the same batch in order to insure uniformity.

The effect of temperature upon the tread wear of balloon tires seemed to be so marked that an attempt has been made to reduce all tire wear indices to the same temperature basis Table I summarizes the results

TABLE 1

SUMMARY OF RESULTS ON TREAD WEAR OF BALLOON TIRES

(U S BUREAU OF PUBLIC ROADS AND UNIVERSITY OF KANSAS COOPERATING)

Equipment—30 x 5 77 Balloon Tires on Dodge Bros Special Touring, 1925 Model

Road type	Miles in test run	Average air temp F	Tread Loss by Wear in Grams in 500 Miles		Total	Corrected to 78° F	Wear index	Condition of road surface	Location of road
			Two front tires	Two rear tires					
P C concrete	401	78	173	151	324	324	1 00	Excellent	Carrollton to Waverly, Mo
P C concrete	805	68	227	191	468	508	1 56	Fair[1]	Lawrence to Tonganoxie, Kan
Sand-clay	309	86	55	99	154	122	35	Good	East from Inman, Kan
Gravel	600	79	79	102	181	177	55	Good	Austin to Worthington, Minn
Penetration, macadam	328	64	186	177	363	419	1 29	Fair[1]	West from Sedalia, Mo
Asphaltic concrete	510	89	216	127	343	299	92	Good	Oklahoma City to Norman, Oklahoma
Brick(2)	441						87	Excellent	Hutchinson to Sylvia, Kan

(1) Average of two test runs

(2) Reduced from data taken in 1925

While the data obtained has been used to compute to two decimal places wear indices referred to concrete such figures should not be valued too highly It is believed, however, that certain general conclusions may be drawn

1 Balloon tire wear is less affected by differences in road surface than are high pressure tires

2 The firm surfaced roads, such as brick, Portland cement concrete and asphaltic concrete, have nearly the same effect upon the tread wear of balloon tires Minor differences in the surface of a given type may cause more difference in wear than that shown by two different types in similar good surface condition

3 Development types of surface, such as sand-clay, gravel of glacier origin, and probably earth, all dry and in good surface condition, cause less tread wear on balloon tires than do the firm surfaced types above mentioned

4 Front tire tread wear is greater than rear tire tread wear on firm surfaced roads and is less than rear tire tread wear on loose surfaced roads made up of sand or gravel with smooth rounded particles

THE NORTH CAROLINA ROAD TEST TRUCK

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In nearly all the States the users of the roads are paying most of the annual highway costs Does this not make it even more incumbent on the State to develop its highway system so as to provide the optimum economy of highway transport?

It is easy to believe that those who make large use of first-class highways save considerably more in the cost of vehicle operation than they pay in license and gasoline taxes Also, the traffic on hard surface roads usually is of such magnitude as to make the annual vehicle costs considerably larger than the annual road cost

In time, however, the saving due to further highway expenditures will be seriously questioned Then it will be essential to have the solutions of the economic problems ready at hand It is believed that the key to the solution of many such economic problems is the comparative costs of vehicle operation on different road surfaces The determination of such comparative costs is exceedingly complicated because the costs accrue to individual vehicles operating on a great variety of road surfaces

The saving in cost per ton-mile of vehicle operation of high-class roads over that on low-class roads is due to the saving in costs per