

MACADAM ROADS*

By A. P. SANDLES

*Secretary, National Crushed Stone Association,
Columbus, Ohio*

MACADAM roads are "Victory Roads." They helped to make one less kaiser in the world. In the world war they held both ends of the line—the battle line over there, the bread line over here. The meal ticket was the biggest gun in the army and navy. Food and fight were both absolutely necessary to win the war.

In 1914, the Hun horde poured into Belgium and France. Its mission was rape, raid, rob and murder. It expected but little, if any, resistance. It reckoned its victims unable to quickly assemble arms and armies to repel a foe. But,

"The Dice of God are always loaded."

When the would-be "Kaiser-Gott" sought to handcuff the earth; when the Hun dream of world dominion was at highest tide; when democracy and free government were hung in the balance; when Christian civilization was put upon the scaffold; when the priceless treasures and triumphs of all the centuries were slated for sacrifice; when mighty nations were shedding rich, red blood; when millions of women and millions of orphans were praying and mourning for loved ones; when the world's greatest tragedy was being staged; then the spirit of John Louden Macadam appeared and enlisted with the hosts of right to help them win the fight.

Sent Wilhelm Into Holland

"Macadam-Victory Roads" smote Prussianism and sent Wilhelm into Holland with a white flag and broken sword. Over these roads rolled loads of men and guns to halt the Huns at the Marne and at Verdun. These roads met the wear and tear of war. They withstood the weight and speed of heavily loaded trucks. They could be quickly repaired, and would be better than before. In this work the American engineer (Canada and United States) went to the king row and got home from third.

The Kaiser and his Huns curse Macadam and defeat. In the coming years, grandchildren will tell the tale of how the roads of France helped the Allies to hit the Hun and win the war. Posterity will owe and pay tribute to "Macadam-Victory Roads" and hail them as a blessing to mankind.

Under the folds of Britain's flag was rocked the cradle of John Louden Macadam. He was the father and the founder of macadam roads. The vast domain of the British Empire can well be proud of this illustrious citizen, who climbed to a lofty place among the sons of men. He blazed a new trail that nations and progress have followed. Wander where you will in the world, if civilization is there, macadam roads are there. Yonder, across the border, John Louden Macadam has hold of the four corners of my country, the United States, and is lifting us out of the mud and mire. "His body lies mouldering in the grave, but his soul is marching on."

From Ox-Cart to Tin-Lizzie

Mr. Macadam was road commissioner of Scotland for fifteen years,—from 1783 to 1798. Before this time he visited America. After this time he began working out his "macadam plan." Those most eminent highway engineers, Arthur H. Blanchard and Henry D. Browne, of Columbia University, New York City, say in their text book on road-making:—

"Macadam was the first man to recommend a broken stone surface of very small size stone for public roads. Other great engineers helped him to work out and demonstrate the success of his method. He proved there was great difference between a loose stone road and a perfect macadam road."

As a tribute and monument to a useful man, the world has builded more miles of macadam type roads than it has of all other types combined. The "macadam plan" was the result of years of study and experiment by a man who de-

voted his life to this work. His plan has worn well for a century. The novice or amateur road-builder who presumes to discredit that noted road-maker gets but little applause. Macadam type roads appear in different forms, wearing different surface-coats, to meet the need of modern travel. Mr. Macadam is the man who helped us to jump from ox-cart to tin-lizzie and from mud-boat to motor truck. He is the man who clave back the darkness and beckoned us to our place in highway transportation to-day.

Roads Built, Then "Murdered"

Macadam roads are the most used and most abused of any form of highway improvement. They are usually built and then murdered. Lack of maintenance is a crime and a disease. If there is any one place where the old adage, "a stitch in time saves nine," fits best, it is in the care and repair of roads. The good road secret is "macadam and maintenance." When our overseas fighting lads were marching to meet or overtake the Hun, they had both feet on "Macadam-Victory Roads." These world-war veterans will go on the witness-stand and testify that the "macadam and maintenance" road progress "over there" made the Hohenzollerns sign the armistice before breakfast and sign the peace treaty as it is written in the language of John Louden Macadam and the Republic of France.

No permanent road is made. Such theory violates natural law. Mountains slowly, but surely, wear away. Petals of the rose fade and fall. Everything, animate and inanimate, has its zenith; then comes decline and decay, which forever play a part. This natural, immutable law never has been, and never will be, repealed. It is in force on every mile of road that has been or will be made. Until the sun is cold this law will hold. In days long gone a king inscribed over his castle door this legend, "Even This Will Pass Away." In his sadness, the legend was hope and cheer. In his gladness, it was a caution and a halt on revelry. Kings and castles pass away, but the law of the legend over the door, like Tennyson's brook, goes on forever.

He who proclaims "permanent roads" should commune with nature and learn the error of his ways. The roads of Rome, the Appian Way, the roads of Cæsar in France, were builded of stone centuries ago and are wearing yet. They more nearly approach permanence than any structure ever built by man. Constantly newspapers record the fact that so-called permanent roads fail to meet the test of time, speed, modern loads and weather. No matter what the type of road, the patrol man must be on the job if the road is to be kept at 100% every day in the year.

Maintenance is the Secret

Mr. Macadam won a victory when he invented a road such that repair would strengthen its wearing capacity and add to its power of resistance. He wisely avoided a type of construction on which repair would be a weakness. He had in mind quick mending, no traffic delay and small cost. Macadam builded better than he knew. The fame and name of this uncrowned king reaches round the world. After a century of time the ways and wisdom of this great engineer still umpires more miles of road-making than all the others combined.

God made no mistake when He hauled and unloaded stone in convenient places for the use of man. Macadam knew this. He used material near at hand. Macadam is the natural cure for mud roads and bad roads. The supply of material will never be exhausted. Maintenance is the secret. One of the distinguished jurists and judges of Ohio has aptly said:—

"To neglect to build good roads is a blight on a nation, but to neglect to maintain them is inexcusable and a criminal waste of public property."

Roads must be well built. Ignorant, careless or fraudulent construction robs the public pocketbook. Brains in the engine-room of the engineer, honesty in his heart and full knowledge of road-making will make this official a public benefactor.

*Paper read May 22nd, 1919, at the Canadian Good Roads Congress, Quebec.