In The Automobile World

DEVELOPMENT OF THE AUTO

INTO AN ESSENTIAL OF THE ECONOMIC LIFE.

And The Demonstration Through the War of the Indispensability of Good Roads.

The development of the automobile into an essential of economic life and the demonstration through the war of the indispensability of good roads were emphasized by George A. McNamee, secretary of the Automobile Club of Canada and of the Canadian Good Roads Association, in an interview in connection with this year's Montreal motor show.

"The motor car, like other essentials, has had to fight its way to recognition," said Mr. McNamee. "I can remember when, not so many years ago, we used to go out into the country to try to persuade the people to help in meeting the expense of good roads, and received the coldest sort of treatment at the farmers' hands. They used to tell us that if we wanted fine roads to speed on we would have to pay for them ourselves; that we couldn't expect them to contribute toward roads for us to use for killing their hens and cows. Of course, that is all different now. The farmers have come to know that the roads are as much a benefit to them as to us, and municipalities and towns everywhere are giving freely to help meet the expenses of improving highways."

"Such has been the history of every improved means of transportation. When the people depended on toll roads with coaches, and on canals they looked with scorn on the proposal to build steam railways. The railways established themselves, and were followed long after by the highways movement, which first brought out the bicycle, which for a long time was regarded as a purely pleasure vehicle, subject to strict regulation and their riders were heavily penalized for speeding, and the editorials used to proclaim that such things must be stopped. Since the advent of the motor car, who hears any criticism of the bicycles? Yet the bicycle is still used to a surprising extent—to an extent that justifies the continued existence of numerous manufacturers. The point is that the bicycle has ceased to be a novelty or a fad and has become an ordinary means of transportation for many who cannot afford a motor car. The same antagonism was encountered and overcome by the street car when it succeeded the horse-drawn car. By-laws say tram cars shall not go faster than seven miles an hour; but how many people would be content with the service if they were restricted to that speed now?

The automobile has had to pass through the same phase of public opinion, and in fact, has not quite emerged from the period of intolerance yet. But it is passing from the stage of a fad in the popular mind to a commercial stage. Presently it will become adjusted to business and custom and we shall hear no more of the attacks on it. After the war the airplane will go through the same test and will emerge triumphant into a place in the business world.

One of the most significant aspects of the development of the automobile is the growth in usefulness of the motor truck. A few years ago the truck was a commercial uncertainty. To-day it is absolutely established, and is providing an unprecedented facility and rapidity of transportation for factory and farm products, for our own use and for overseas.

So general has become the recognition of the truck that the Government and the municipalities everywhere are finding it necessary, in projecting new roads, to consider to what use they are to be put—what is going to pass over them. Highways that are to be used by trucks require especially good foundations and wearing surfaces. Also, such roads should be of ample width at their first building. It is short-sighted to build a narrow road and think you will widen it as the need arises.

In Canada there are about 250,000 miles of roads of all kinds. A road authority has said that if Canada is to handle its future road traffic properly it must improve fifteen per cent of its roads, and must make two per cent. of them especially substantial, for trunk highways.

What would be the result of such improvement? Would it justify the expenditure?

To begin with we should save enough in cost of haulage to pay for the improvements in the first year, and have a profit left over. The average cost of hauling has been put by an expert at twenty-five cents a ton mile, on fairly good roads. But on the goods roads of Europe, the cost is fifteen cents a ton mile. That would save ten cents a ton mile, wouldn't it?

How It Can Be Done.

A railway expert says that the freight handled in Canada for this fiscal year will be about 115,000,000, of which probably 75,000,000 tons must be hauled to and from the railways. To this should be added the haulage that is done of goods which are not handled by the railways at all. This is hard to estimate, but it surely must be 25,000,000 tons. That makes 1,000,000 tons, at a very conservative estimate, hauled on Canadian roads. The saving of ten cents a ton per mile on this would be $10,000,000 a ton mile, and as the average long and short highway haul is estimated at five miles, the total saving would be $50,000,000 a year.

Besides this, the loss of time on bad roads is estimated to amount to twelve days a year per rig. There are 750,000 farms in Canada, and allowing one rig to a farm and $5 a day as its value, the total loss would be $45,000,000 for $9,000,000 days work in one year.

Again, it is said by statisticians that only 100,000,000 acres of 400,000,000 acres available land is settled in Canada. Think of the impetus given settlers by good colonization roads in the West, and of the immense benefit to the country from their settlement.

Finally, remember that good roads and the automobile are among the best aids to agriculture and to national efficiency in general. They aid transportation, relieve railway congestion, bring the people of widely departed parts of the country closer together and by facilitating the transport of war supplies are of inestimable value to the Allied cause."

ALTERNATIVE ROUTE

Is Suggested For the New Canadian Highway.

E. T. Bagshaw, of Prince Albert, Saskatchewan, suggests an alternative route for the Canadian highway through the western provinces.

Mr. Bagshaw proposes that from Portage la Prairie, Manitoba, the route should run north-westerly to Prince Albert, thence to Battleford and Edmonton, through Yellowhead Pass to Kamloops, and down the Fraser river to the coast and Vancouver Island.

This route is naturally probably the best of all, and though furthest north, will probably suffer less from snow and be closed by snow fewer days out of the year than any other transcontinental route, not only in Canada, but almost down to the Mexican line.

I never believed that the church should be blamed for the hypocrites in it. Did you ever see a society of any kind but what was handicapped by black sheep?

NEWEST NOTES OF SCIENCE

Loops to hold neckties in position feature a recently patented collar.

A pure white mineral wool is being manufactured in Australia from basalt rock.

A new table for children has a revolvable top, on one side of which is a blackboard.

Liquors can be solidified into tablet form by a method a French chemist has invented.

Additional plates can be slipped on the top of a new flat iron to increase its weight.

Australia's first extensive deposit of slate has been discovered in New South Wales.

Sand flowing through a new toy makes figures of soldiers chasing figures of Indians realistically.

An English inventor has obtained a patent for horseshoes held in place with bolts instead of nails.

Built into the upholstery of a new automobile is a concealed pocket for umbrellas, parasols or canes.

The Bulgarian Government is taking energetic steps to increase the production of cotton in that country.

An electric motor operates the blades of shears a Chicago man has invented for use in clothing factories.

A Frenchman has invented a detachable cabin for aeroplanes to protect pilots and passengers when desired.

In the end of a new glass stirring rod for mixing drinks is a tiny incandescent lamp to illuminate its work.

Abyssinit, the original home of the coffee tree, still has immense forests of it that never have been touched.

Two types of washing machines that can be fitted into stationary laundry tub to do their work have been patented.

Complete automatic telephone systems have been recommended for four New Zealand cities by a government electrician.

A periscope and extension handle enable a new motion picture camera to be operated several feet above a photographer's head.

A device has been invented by a Frenchman to be attached to an automobile wheel rim to give warning when a tire becomes flat.

The back and tines of a new comb are hollow and into the former can be inserted a heated rod for quickly drying the hair.

One of the largest English railways has built a fireproofing plant in which to treat all lumber used in the construction of cars.

For the protection of racing automobilists, a suit of pneumatic armor has been invented, covered with rubber tubes into which air is pumped.

To demonstrate their stability London's motorbuses are put through a series of tilting tests before they are permitted to serve the public.

A new connection for machinery belts consists of a hinge, the two portions of which are joined by a rawhide pin when their holes are aligned.

Electric light companies in Germany require their lamp trimmers to save scraps of old carbons, which are cemented together for further use.

Both adding and subtracting can be done with a new calculating machine that is about the size of a watch and can be carried in a vest pocket.

A French inventor claims the record for efficiency for an oil engine that has a fuel consumption of less than forty pounds per horsepower hour.

To extinguish fires in cable boxes, where water might cause short circuiting, a device has been invented for injecting flame smothering gases.

According to a census taken in Denmark, which has about one-third of the area of Wisconsin, that country has more than 5,400,000 fruit trees.

A patent has been granted for a process for increasing the durability of lead paints by the addition of soft water, zinc sulphate and kerosene.

A process has been invented in Europe for applying oxyhydrogen gas jets to metals under water to cut thm almost as well as if in the open air.

The United States not only is the largest producer of raw sealskins in the world, but it also uses more finished seal furs than any other nation.

Brazil has remodeled its mining laws with a view to inviting exploitation of its scarcely explored and believed to be very extensive metal deposits.

Economy of material induced the builders of a smelter stack in Arizona to erect it on top of a hill and connect it with a tunnel at the ground level.

An Englishman is the inventor of a demountable rim for automobile wheels that is made in two parts, whic hare locked together with five bolts and a nut.

Even the narrowest and smallest of keys can be made to work as it should in the dark by an Illinois inventor's keyhole guide that can be attached to any door.

German attempts to make a fatless soap from kaolin and slaked lime have resulted in clogging icty sewers with the clay, which combines with other waste watter.

The secret of a St. Louis inventor's gas burner that produces very high temperatures lies in the fact that a mixture of gas and air are burned in a closed chamber.

The Siamese government has consolidated a civil service college and a medical school into a university to provide instruction in all the higher branches of education.

A method for rebuilding worn-out automobile tires and making them puncture proof with a fabric woven from thread and a vegetable fibre has been invented by a Californian.

Oils obtained from Antarctic sea leopards, seals and penguins have been tested by scientists in London and found useful for soap and leather making and for heating purposes.

Pressing a bulb on the handle ejects ammonia or any other desired liquid from a cane that has been invented to enable persons to protect themselves from highwaymen or animals.

By using two slightly separated lenses and passing a current of air between them a French scientist has succeeded in freeing the high power light of motion picture projectors from heat.

Recently invented wire netting with protruding points to prevent cats and squirrels climbing trees also can be user to hold cotton saturated with insecticides to keep caterpillars away.

It is believed that large quantities of an oil with many commercial uses can be obtained from the nuts of the coyol palm, which grows prolifically in Central and tropical South America.

Two shoes have been patented to support the arches of their wearers' feet, one with a bracket extending forward from the heel and the other having a projection from the shank to the ground.

After years of experimenting a Norwegian engineer has perfected a process for making a heat insulating material from a mixture of cork dust expanded by heat and clay found in Danish heaths.

Made in sections that can be built up to any desired size, a heater has been invented for utilizing the waste gases from internal combustion engines for heating water or raising low pressure steam.

Crude oil in its tanks limited the amount of water which could enter a steamship when it struck rocks near Ceylon and punctured large holes in its hull, and enabled it to reach port five days later.

Electric range finding apparatus has been invented for the United States navy that uses microphones to tell teh distance between ships or the height of airplanes by the sound of their propellers.

To encourage boring for oil, the government of South Australia has offered a large cash bonus to the first person or corporation producing 100,000 gallons of crude 90 per cent. petroleum from a well.

A Chicago inventor's hand signal light for automobilists is so arranged that when mounted on a man's finger the extension of his hand to warn following vehicles automatically turns on the current.

A British road improvement society has offered a prize for a horse shoe that will minimize the damage done to highways by steel shoes and at the same time give horses safe footing on smooth pavements.

To prevent death by poison tablets taken in mistake, an inventor has brought out tablets coated with rubber, which is said to resist the stomach acids long enough for a tablet to pass out of the system.

To Save Cars From Theft.

To protect a Ford car from theft is an easy matter. Some of the following suggestions may be applied to other cars as well. Removing the switch key is not enough, as every thief knows that it is only necessary to insert a small screw driver into one of the notches in order to turn it readily. The key should be removed in all cases, but other precautions must be taken as well.

Disconnect battery and magneto wires and take them with you. If these are too long cut pieces out of them, making them too short to reach the proper terminals. Run them to separate binding posts on the dash and run short lengths of wire from these binding posts to the regular binding posts. These short lengths may be taken with you. But the thief can connect across by using one of the timer wires, causing one cylinder to miss explosion—a matter of no great moment to him.

Some drivers favor a switch in the tool box, one controlling both battery and magneto circuits—a "double-pole" switch as it is called. But if the thrief has time to investigate he will see these wires leading into the tool box and put other wires in place of them. A similar idea is embodied in a lock switch which carries the primary wires to a switch on the dash which can be locked with a Yale key. This is good enough if the hood is kept locked. But as it rarely is, the thief simply removes the wires from the back and twists them together—and the car goes with him.

Turning the coils around so that they do not make proper contact, putting paper under them so that they do not touch the bottom contacts or even removing the coils and locking them in the tool box have been tried. Twisting a wire around all the adjusting nuts on the vibrators will cause them all to buzz at once, making it impossible for the engine to fire the cylinders conservatively. If the battery is new, however, the noise of all four vibrators working at once will lead to the discovery of the wire.

Fined a Guinea.

The Hon. Osbert W. Craven, Ashdown Park, Berks, was summoned at Swindon for causing petrol to be used for an unauthorized purpose.

Mr. Craven did not appear, but sent a letter saying he was ignorant of the fact that he was doing wrong.

Police Constable Webb said he was at a meet of the Craven Hounds (owned by the Dowager Lady Craven) at Hinton Manor and saw a motor-car driven by a chauffeur from whom he ascertained that Lady Craven had been driven to the meet, and that the car belonged to Mr. Osbert Craven.

After a long consultation by the ten magistrates (who included Sir Frederick Banbury, M.P., and several farmers and sportsmen), the chairman, Major Goddard, said there was a difference of opinion among them, but by a majority they had decided that Mr. Craven was guilty, and there would be a small fine of one guinea.

Caring for Tires.

It is always best to remove the tries from the wheels, as this gives an opportunity for a thorough examination of them.

If tires are needed it is better to have them made at once.

If tires need no repairs, the casings should be washed off with gasoline to remove all traces of oil, then wrapped in burlap or light muslin and placed in a dark, dry place where a cool, even temperature is maintained.

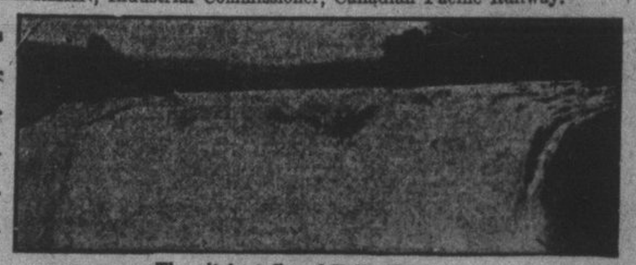
Tubes should be taken from the casings and laid out flat on shelves where no heavy weight will by any chance be put upon them.

If the tires are not taken from the wheels the car should be jacked up and the tires partially deflated, leaving only sufficient air in them to keep the tubes from folding and cracking.

CANADIAN WATER POWERS

By H. P. TIMMERMAN, Industrial Commissioner, Canadian Pacific Railway.

The following estimate is given by the Dominion Water Power Branch of the water power available in each province, showing to what extent this already has been developed.



The pitch at Grand Falls, N.B.

Provinces	Power Available	Power Developed: Electrical Energy	Paper and Pulp	Other Industries	Total
Ontario	5,800,000	682,083	83,375	74,008	789,466
Quebec	6,000,000	370,000	100,000	50,000	520,000
Nova Scotia	100,000	3,062	12,650	5,700	21,413
New Brunswick	300,000	5,890	3,050	4,450	13,390
Prince Edward Island	3,000	50		450	500
Manitoba	3,500,000	76,200		50	76,250
Saskatchewan				100	100
Alberta		32,860			32,860
British Columbia	3,000,000	216,345	49,000	4,275	269,620
Yukon	100,000	12,000			12,000
Total	18,803,000	1,348,490	248,075	139,033	1,735,598

It will be seen from the above that of some eighteen million horse-power available, and which further exploration will enlarge, less than ten per cent has so far been developed. Nevertheless, with but few exceptions all our principal cities, and by far the greater number of our towns and villages are supplied with hydro-electric energy, and the surplus production permits of the exportation of considerable power from New Brunswick to the State of Maine, from Quebec to New York, from Ontario to New York and Minnesota, and from British Columbia to Washington. The bearing which this exportation of power has upon the imports of coal, especially into the provinces of Ontario and Quebec, the source of two-thirds of the available current, may be surmised. Since the war resulted in a scarcity of vessels for transportation of Nova Scotia coal up the St. Lawrence River to the industries of Montreal, there have been converted to the use of electrical energy in that vicinity no less than one hundred and fifty private steam plants, with a demand load of about as many thousand horse-power; while many others are considering a like transformation.

Having mentioned Montreal, it may further be said that with a population approximating three-quarters of a million, that city and vicinity, according to one of the principal power companies, was supplied by it alone last year with slightly under a billion kw-hrs., the equivalent of the amount available to the city of New York, with a population of five millions, and to have got all lit up on one-fifth or less, providing also for traction purposes, indicates that the manufacturing enterprises of that great city must have gone somewhat shy on power, excepting such as may have been produced from coals that would otherwise have been available for heating.

A similar comparison doubtless might be made between Toronto and Chicago, or any other Canadian and American city of relative position, a comparison sure to become more striking as time passes and the upward tendency in the cost of coal is contrasted with the lowering cost of hydro-power.

The relative cost of steam and hydro-power being subject in the case of coal to labor, transportation and other variable expense is at present rather difficult to estimate, but admittedly the advantage in economy is with the latter source of energy, while in many cases for the mere ease of distribution and control, the electric current is secondarily made use of, being first generated by steam produced from coal. Hydro-power being the one necessary commodity which paradoxically decreases in cost in inverse ratio to the demand for it, this clearly is to be the manufacturing force of the future, and as coal is not at all likely ever to revert to pre-war prices, many industries supplying the world's markets will take advantage of this fact by locating in Canada where also raw materials are plentiful, and whence the same are now to some extent imported. In fact, some of the larger users of heat and power, such as the electro-chemical and metallurgical plants, already have divined the coming situation and are flocking to the vicinity of potential sources capable of providing adequately for not only their present needs but for all possible future development. In this they are not forestalled nor inconvenienced by the enormous expansion of the pulp and paper industry, which finds its requisite timberlands themselves to be the means of the conservation of immense supplies of water, affording adequate floatage as well as such mechanical force as it necessary to their development as other favorable conditions arise.

The same current of water having turned the wheels of one industry, in many cases passes along to drive still another, and on its further course to the sea bears the burden its own restless energy has helped to produce. No natural resource useful to the future or to any other purpose is sacrificed and no accretion of human toil destroyed.

Canada is gifted by providence in almost every form of the basic elements of manufacture and the natural powers by which these may be developed, having at the same time the lands suited to diversified agriculture, by which a greatly increased industrial population may be sustained. Her products already are in demand wherever known around the world, and geographically she is on the trade routes of the world.