

CRIPPLED WARRIORS CHOOSE AUTO TRADE

Returned Soldiers Studying Motor Mechanics.

CLASSES PROVING POPULAR

United States, Canada, England, India and Germany Teaching Work to Disabled Men.

"Motor mechanics have proved a most popular subject of instruction for crippled soldiers who are being retrained to become self-supporting, self-respecting workers," says Douglas C. McMurtrie, director of the Red Cross Institute for Crippled and Disabled Men, New York.

"In fact, the trade is almost too popular, say directors of Canadian schools in which hundreds of disabled soldiers are today being trained in new occupations. Practically every Canadian soldier who is asked to choose from among the various trades in which classes are operated selects automobile mechanics.

Repair Shops Equipped.

"In British Columbia gasoline engine classes were organized soon after the wounded began returning from overseas, Vancouver, Victoria, Esquimalt and Westhaven provide instruction in motor mechanics in Victoria the military hospitals commission and the Board of Education together operate a fully equipped motor repair shop, in which men who wish to become chauffeurs are taught. Men trained in this course conduct a well-patronized jitney stand in the town. Those who wish a thorough course preparing them as motor mechanics are sent to Vancouver and later to the new workshops at Esquimalt and Westhaven.

"There is a big field for workmen in this trade in Saskatchewan, as through all the West, and thorough courses are given for war cripples by the University of Saskatchewan. Another course is at the Provincial Institute of Technology and Art at Calgary. Disabled men so trained compete successfully with the average sound mechanic. One soldier, who lost his right arm, is preparing with his chum to have a small four and grist mill in one of the centers of the Peace River district. His course in automobile mechanics is a side line. His chum will attend to the milling proper.

"While the English soldiers and sailors are heaping at Queen Mary's Convalescent Hospital at Brighton and Southampton they are afforded the opportunity of learning motor mechanics. The workshop at Southampton is fitted up as a model garage in charge of disabled men who, besides being skilled instructors, understand the special problems of the war cripple. A "Briton" motor chassis, working models of engines, three center drilling and turning machines, a drilling machine and benches fitted with the vises and tools needed in repair work are included in the equipment. An electric motor gives power for the machines. The class has a 15-horsepower Barracoe motor car for instruction purposes.

"Germany, too, has excellent training courses for war cripples who take up motor mechanics. At Dusseldorf on the Rhine, by the co-operation of the provincial and city administrations and local welfare societies, war cripples are being trained in many skilled trades. Here the course in automobile mechanics was established at the request of the motor repair shop owners, who needed workmen and could not obtain able-bodied men. Within very few months the pupils of the first class had successfully repaired 14 different types of motors whose mechanisms they understood thoroughly.

"Even in far-off India the trade of automobile mechanics has held the imaginations of the natives. It must be a curious sight indeed to see India's disabled sons repairing an automobile or studying the intricacies of mechanics in the shops that are operated at Queen Mary's Technical School in Bombay. These classes, headed by olive-skinned warriors will not be left to the highways to beg after they have served their country, but will be trained for useful trades in which their physical handicaps do not prevent them from competing with able-bodied men."

ROADS TO BE KEPT CLEAR

EASTERN STATES WILL INSURE WINTER TRAVEL.

Highways Will Be Kept Free of Snow to Facilitate Truck Freight, Mail and Express Traffic.

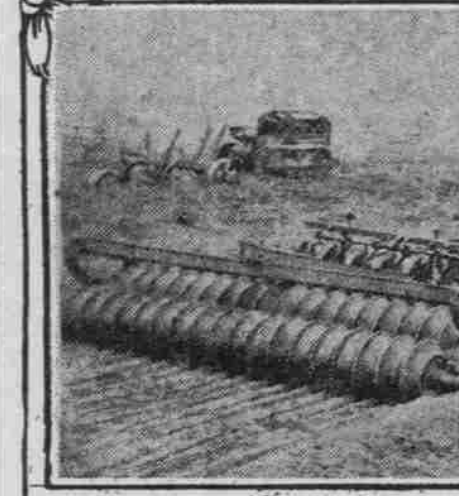
Concerted action to keep highways open following snow storms during the coming Winter is being taken by the Highway Commissioners of the Eastern states and some of the Central states. The importance of transportation by motor truck and the overland delivery of thousands of Army trucks to Atlantic ports last Winter emphasized the need of keeping the main highways open for travel through the Winter, and Eastern State Highway Commissioners believe that with the establishment of many rural motor express lines and parcel post routes there will be continued heavy truck traffic during the coming Winter. Highway Commissioners, or their representatives, from New York, Connecticut, Massachusetts, Pennsylvania and Delaware recently met with the High-

way Traffic Association of the state of New York and reported that plans had been made to keep the most traveled roads open every day this Winter. Of an appropriation of \$1,000,000 made by New York State for maintenance of the routes used by Army transport trucks, \$50,000 is available for snow removal. In Connecticut the cost of snow removal on 1000 miles of highway aggregated about \$50,000 last Winter, or approximately \$50 a mile.

"The establishment of rural routes and the increasing use of trucks and passenger cars for essential business command the attention of highway engineers," said Charles J. Bennett, Highway Commissioner of Connecticut, "and the snow removal problem becomes a vital issue to be solved at once."

Pennsylvania last Winter set an example in keeping the mountain routes open for Army and commercial traffic. "It should no longer be an optional matter with the road officials in charge of our highways," said George H. Bliss, Deputy Highway Commissioner for the state, "for when we consider the enormous Winter traffic on some of our roads, argument is unnecessary. An actual traffic census taken on one of our highways when the temperature was 25 degrees below zero showed that more than 2000 vehicles passed over the road in 12 hours."

The United States Weather Bureau has made plans to furnish daily reports of the depth of snow or ice on the roads and their general condition to the automobile clubs in Pennsylvania this Winter for the benefit of truck and



TRACTOR DOES YEOMAN SERVICE ON FARM NEAR GRESHAM. This Cleveland Tractor, Sold by the McNeff Tractor & Auto Co., Pittock Building, Was Snapped in the Act of Pulling a Six-Foot Tandem Cut-Away Disk and Six-Foot Tandem Packer.

passenger car drivers. Forecasts of approaching storms will also be supplied daily to the superintendent of highways at Harrisburg, who will instruct his snow-fighting forces accordingly.

FUTURE UP TO TRUCKS

THEY MUST GUARD AGAINST TRAFFIC CONGESTION.

Official of Federal Motor Truck Company Points Out Duty of Business Men.

Preparations in America for the traffic difficulties that are bound to arise in the summer months are being made by the Federal Motor Truck Company. Mr. Rowley was for 30 years general freight agent for the Michigan Central Railroad, and is a thorough student and authority on railroad traffic conditions. Mr. Rowley points out that when American ships now being built begin operations the strain upon the railroads will be far greater than it is now and that some definite means of relief must be devised. This means, obviously, is the motor truck. The performance of American motor trucks throughout the war, and particularly the work they did last Winter during the serious railroad traffic tie-up, show positively that trucks are the agency to settle this problem.

Agricultural production such as never has been dreamed of in this country is demanded for 1919. Ships to be built and launched the coming summer will carry greater cargoes of American products abroad to soldiers in France, and the people of England and France particularly, than ever before. This means that the railroads will have to carry more goods to the Atlantic seaboard and that they will be overwhelmed with work. The motor truck must come to the rescue and the American public must make preparations to meet the great transportation demand. The trucks have proved conclusively that they can relieve the railroads of much of the short-haul traffic and that many kinds of freight can be transported on long hauls with great success and at a reasonable cost.

"The Federal Motor Truck Company is now turning out the heaviest production in its history," says Mr. Rowley. "Federal distributors in all parts of the country are impressing purchasers and prospective purchasers with the necessity for them to rely upon trucks rather than upon railroads, particularly for short-haul work and deliveries."

"The railroad tie-up of last Winter was not merely a temporary affair. The volume of goods to be moved will not grow less—there is every reason to believe that it will greatly increase. It is not so likely that there will be a serious fuel shortage the coming Winter, inasmuch as the American people learned a very serious lesson.

MANY DODGE CARS REQUIRED "OVER THERE."



ONE DRIVEAWAY OF CARS FOR THE ARMY LEAVING DODGE BROS. FACTORY AT DETROIT. The photograph gives a faint idea of the number of motor cars required by the Army for service in the United States and in France. It represents one convoy of 125 Dodge motor cars about to leave Detroit for the Atlantic Seaboard. Cars at the right are business cars, with special fittings for the Quartermaster Corps. The remainder are the regulation touring cars. This was one of many such driveaways.

AIR COOLING LIKED BY EXPERTS ABROAD

War Gives Impetus to Demand for Lighter Weight.

BIG FUTURE AFTER THE WAR

European Automobile Engineers Interested in Features of Franklin Car, Cooled With Air.

Otto Kahrs, a prominent importer and automobile dealer of Kristiania, Norway, on a recent visit to the United States, gave some rather illuminating ideas as to what war is uncovering in the matter of automobile efficiency. Mr. Kahrs says that in European

countries, the direct air cooling system for automobiles is arousing considerable interest, and that it is quite freely predicted that after the war there will be a goodly number of firms manufacturing air-cooled cars.

For a long time European papers have reflected the growing tendency toward air cooling. People over there who are interested in automobile development, being in close proximity to actual military operations have had splendid opportunity to observe the present types of cars under the hardest conditions. From the observations thus made, it is quite clear that future developments must be along the lines of lighter weight, greater flexibility and more economical operation. The fact that direct air cooling is particularly adapted to these requirements undoubtedly accounts for its growing popularity among European automobile engineers.

"There are many features about the system of direct air cooling that have tremendous appeal," says Mr. Kahrs, "but none are of more importance than the greater simplicity and lighter weight possible with this type of engine. In view of the difficulties encountered in getting sufficiently large quantities of gasoline and tires to Europe, it is imperative that cars be used which make the most of what can be had. And the air-cooled type gives splendid results in this respect, as can be shown right here in America with the Franklin air-cooled car, a number of which are in operation in my country."

"War has also disclosed how impervious are air-cooled cars to the effects of extreme temperatures, both hot and cold, because with the elimination of water, is also removed the danger of freezing or overheating. That freezing is a very serious condition will be recognized by the fact that there is a rule in the French army which goes into effect each Winter, demanding that all water be drawn from the radiators when cars are to stand idle for any length of time.

"When one considers the time necessary to refill a radiator, the difficulties the car driver must contend with in the face of a quick call can readily be seen."

Fan Belt and Dust. In fan assemblies that have V-shaped pulleys for the belt, it is well to examine this location for accumulations of dirt, and any such deposits should be carefully cleaned out. Further, it is good practice to give the belt a brushing with a stiff brush and then wipe it off with a cloth dipped in neatfoot oil.

Thin Enamel With Alcohol. Ordinary turpentine is a satisfactory medium for thinning enamel or varnish, as most motorists know. Some varnish manufacturers supply a special thinning liquid, which should be used in this instance. When it is desired to produce a quick-drying enamel, try using alcohol for thinning.

Insert new piston rings every 12 months.

SOLID TIRES NEED CARE

EVEN LARGEST ONES REQUIRE SOME ATTENTION.

TRUCK TIRE EXPERT OF GOODYEAR TIRE & RUBBER COMPANY GIVES ADVICE TO TRUCK DRIVERS.

"How can I care for a truck tire?" This question is seldom asked by truck drivers these days, according to R. R. Wilson, manager of the truck tire department of the Goodyear Tire & Rubber Company, of Akron, O.

"To hosts of truck drivers," says Mr. Wilson, "solid tires are apparently nothing more than chunks of rubber fastened to the wheels—what can hurt them? They will wear out in course of time anyway, so why bother to look after them?"

"It is true that these big tires look so sturdy and rugged that they do not appear to need any special care. But ideas like this have cost the motor truck users of the country a vast sum of money in the aggregate. The severity of the performance demand of a non-pneumatic tire usually more than makes up for its lack of delicacy—so that reasonable care with a truck tire is just as essential as with an automobile tire."

"Overloading is one of the great abuses visited upon truck tires. In many cases overloading is intentional, but in the majority of instances the practice is carried on unknowingly or carelessly. But the result is the same in either case. The overstrain soon

breaks down the tire before its appointed time. "The sturdiest machine, of whatever character, has its limitations. A flywheel can run so fast and no faster. It has a critical speed which, if exceeded, will tear it to pieces. A locomotive can pull so much and no more. Likewise a solid truck tire will endure a certain strain and not a bit more. When rubber is compressed to a certain point, its compressibility ceases, and any pressure beyond that point causes the rubber particles to crack and separate from each other, and the tire is weakened so that it becomes more susceptible to common injuries. The life is crushed out of the tire and it will never resume its former resiliency."

"Overloading, of course, is only one of the abuses to which truck tires are commonly subjected, but it is the most prevalent, and this is why we are emphasizing care in loading trucks only to recommended capacity.

"Overloading is bound to increase the cost of operation greatly, and while the tires are wearing away abnormally, the truck itself is depreciating at an unreasonable rate. So our advice, based on experience, is if you must overload your truck, equip it with oversize tires when your old ones wear out. They will be far more economical in the end."

FORD AXLES QUICKLY BUILT Progressive System of Assembly Is Shown at Ford Plant.

One of the best places to observe the Ford system of progressive manufacture and assembly is the rear axle department of the Ford factory at Detroit.

Here the rear axle housings are started in the process of manufacture at one end of the department, which covers 20 bays, and are finally brought together with other parts to make the finished rear axle assembly at the other end.

At the extreme east end of the department is an immense pile of "bells," as they are called. These bells, two in number on the car, are bolted together, joining the right and left-hand sections of the rear axle housing. They inclose the bevel drive gears, through which power is transmitted to the rear wheels.

When the bells are taken from the big pile they pass through a few operations before going to powerful machines that force the housing tubes into the ends of the bell. At this point the assembled bell and tube are placed on a conveyor which passes between double rows of lathes set back to back. The lathes operators take these assemblies from the conveyors as needed and perform several operations, after which the assemblies are placed on the conveyor, where they pass to another point where the brake shoes assembly, and other parts are added in turn. The assemblies, for the most part, pass in quick succession from one machine to another as different parts are needed and operations performed. At about two-thirds of the way down

the line the practically completed housings are met by the axle shaft assembly, which comes via conveyor from the fifth floor of the building. This assembly is then installed in the housings and the assembled drive shaft and housing, radius rods, hub brake pull rods, etc., are duly added as the assembly steadily progresses on a conveyor. During these various processes the assembly has progressed to a department, where it is given the finishing touches and then the finished rear axle assembly is swung onto another conveyor which carries it to the side of the building and thence down a craneaway to the loading docks, where it is placed in cars for shipment.

VESTA SPARKLETS, NO. 2 By "Doctor Spark"

The patented Impregnated Wood Mats in VESTA BATTERIES prevent "freezing." The fiber of the wood is impregnated with a chemical that positively prevents the passage of metallic lead through it; acting as a preservative and prevention of "shorts."

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Model 37 Sedan or Coupe	\$2100.00
EIGHTS	
Model 45A Touring Car	\$1900.00
Model 45A Pacemaker	\$1900.00

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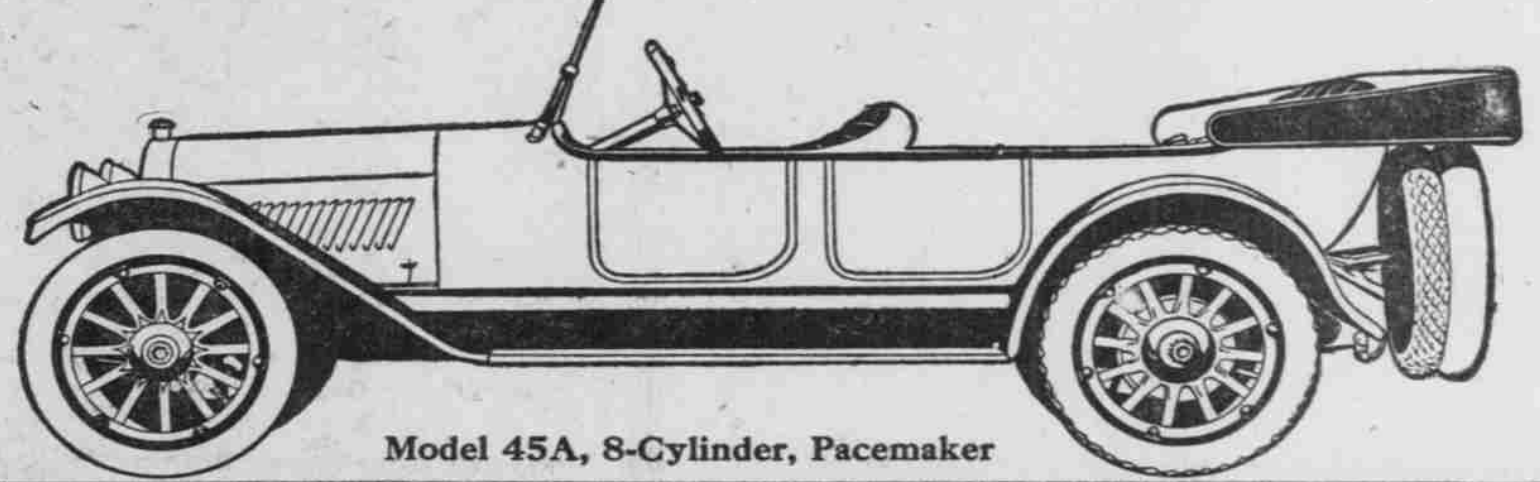
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