

REJUVENATING WAR CARS NEAR THE FRENCH FRONT

Hospital Behind the Lines Utilizes All Parts for Practical Purposes and Sends Many War Worn Cars Back Into Service Again.

By W. F. BRADLEY, of "The Automobile."

There must be a tremendous amount of automobile junk piled up behind the lines in France. Doubtless this is a surplus shared by many who have reaped the fruits of the destructiveness of war but have had no opportunity of examining the methods employed to repair the inevitable loss of equipment.

This opportunity to examine the methods adopted in order to prevent the wastage of automobile material and keep the mechanical transportation service of the army working on the most economical lines came with an invitation of the French War Department to visit its huge centralized repair depot. First aid in automobile breakdowns is given by the traveling workshops attached to each convoy or group. More serious cases are dealt with by the general repair shops—a few miles behind the lines. The first aid given is dealt with only a limited amount of work of a comparatively simple nature. Theoretically, the army workshop can tackle any kind of a job, but when these shops have to be established in barns, under canvas covers on some market place, when they are in danger of being shelled by the enemy, and when they are obliged to maintain a certain degree of mobility, they are apt to be submerged and incapable of carrying out the work entrusted to them either rapidly or economically.

Thus back of the army workshops the French War Department has established its general clearing hospital. This unique establishment receives the whole of the overflow from the repair shops in the field. Cars and trucks which have been battered by shell fire, vehicles which can no longer be efficiently kept in repair, old models for which spare parts are not easily obtainable, the whole of the automobile wreckage of the battlefield, flows into this central establishment. This organization may be compared to the big hospitals which receive all the human wreckage of warfare. The automobile hospital, however, does not admit of a crematorium in the background, for under the wonderfully efficient system evolved by the French, no vehicle, nor any wreckage of a vehicle, can ever be considered valueless.

Along the French front there may be some sound automobiles of all kinds. This there does not claim to be accurate, but it is sufficiently near the truth to give an impression of the vast organization dealt with. The overflow and the hopelessly inoperable from this vast army are brought in by rail to the central repair depot at the rate of about seventy or eighty per week, and about 60 per cent. of these are capable of being brought into perfect condition for service in the field.

When this organization was decided on the war had already been in progress a considerable period and there had been accumulated several thousand battered remains of motor vehicles of all makes, from all countries, of all ages—having only one feature in common, their inability to run. The law of the survival of the fittest decreed that these that wrecks should be the least valuable of the automobiles of France. They consisted of old models which had been doing useful if not very efficient work in various corners of France when the net of the regulation came down on them and they were thrown pell mell into the army, and the army a few months later threw out their cracked and rusty bones.

The officers placed in charge of the central repair depot had to decide what should be done with this Old World wreckage and also with the more modern material which came in from day to day with only slightly varying regularity. It is an invariable rule in the French automobile service that no war worn cars shall be thrown on the market, and that

not an ounce of metal nor a plank of wood shall pass into civilian hands. This rule has been strictly adhered to, and will continue to be adhered to, to the disappointment of those bargain hunters who are hoping to secure war worn vehicles for an old song and to the flogging of the man who habitually presides over the junk heaps. Speculators covet the money out of this branch of the French army.

As each batch of wrecked vehicles comes in a group of expert officers examines them and decides whether the vehicle shall undergo repairs or whether it shall be dismembered. In the former case it is towed or carried away to the repair shops to be dealt with in a manner which will be described later. If dismemberment is the order, the vehicle is broken into the temporary receptacles and dealt with in proper order. These French officers have developed automatic dissection into a fine art; there is not an ounce of material on an automobile which is incapable of being used in some efficient manner. First of all the car-buriers and magnets—if these two auxiliaries still remain—are taken off and sent to the stores. A special gang strips off the body, and while one man puts the horseshair real and another takes the cloth or the leather, another rips off the sheet metal panels and still another pounces on all the woodwork. The man who is interested in seat stuffings knows the difference between horseshair and the many substitutes which pass under that general term—and he has a special receptacle for the imitation. The same with upholstery and leathers. Real leather from a \$100 touring car is not stored with the imitation from a \$500 runabout. It takes no longer to classify them than to group them, and the saving on quantities is enormous.

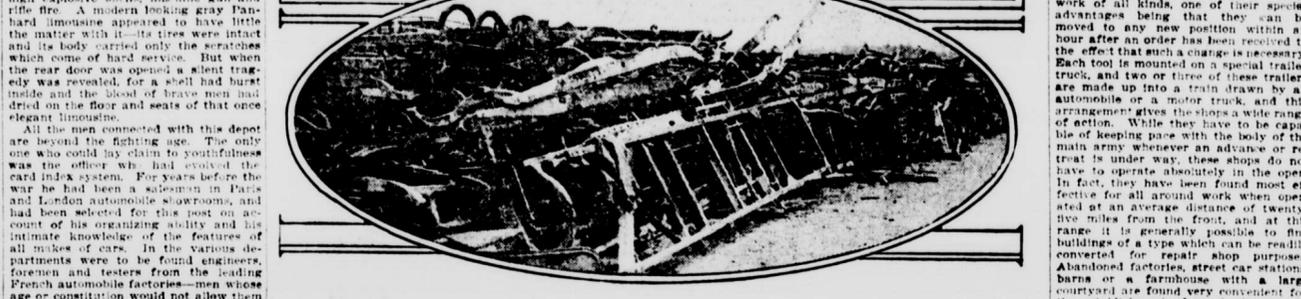
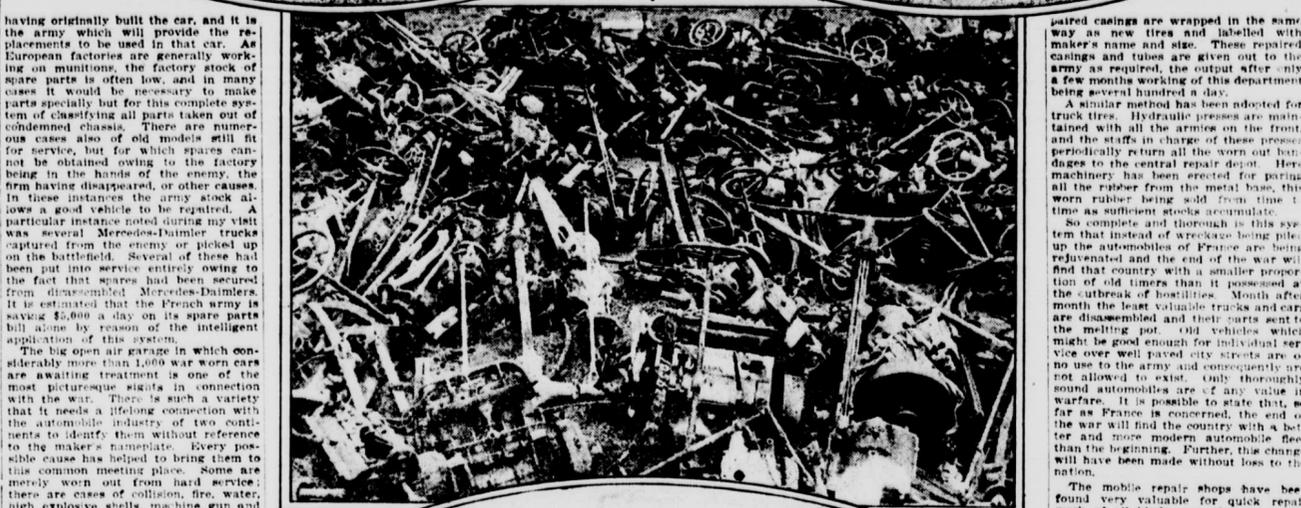
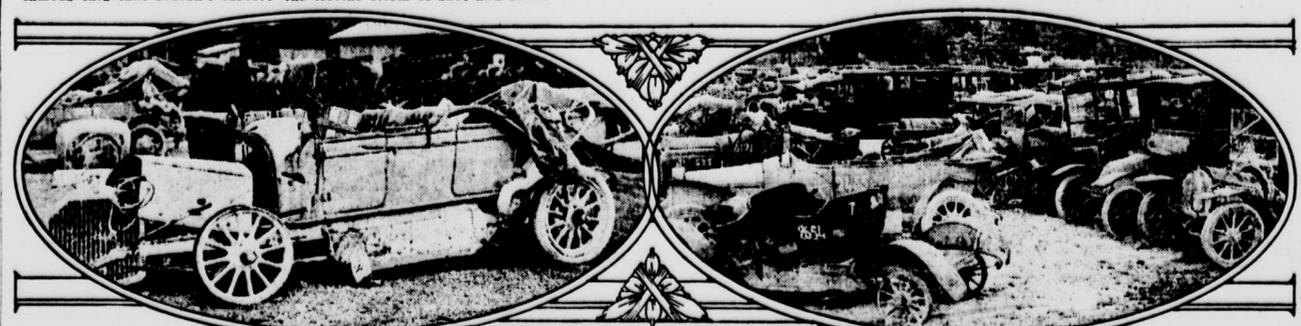
The same system applies to the chassis. When the motor is taken out of the frame it is carried across to the clearing shops. It may be found that this unit is in perfect condition, in which case it is cleaned and sent to the stores. It may be that the wreckage is so complete that one connecting rod is all that is left, in which case that single rod goes into the stores. The gearbox, the rear axle, the steering mechanism, the brakes, all pass under the same examination. If a gearbox, for instance, is unfit for further service, it is not thrown into the junk heap and allowed to be there. Its shafts are taken out, its ball bearings are separated, its gears, if of B. N. D., or other high grade steel, are not thrown into the heap with cheap mild steels, the aluminum casting is not flung in with the cast iron.

The card index system has been applied to this work in a very systematic manner. When a vehicle comes in it is given a number and classified according to its make, model and year. All the parts saved out of this vehicle are sent to the stores for possible future service are noted on the back of the card. These notes vary considerably; they may be a complete motor, a complete transmission, a complete rear axle, or only a crankshaft, a set of connecting rods, or a couple of cylinders. But whatever they may be they are recorded.

An example of how this system works, let us suppose the repair depot receives a Peugeot NX model, 1912 type, in good condition with the exception of a few holes in the cylinder water-jacket. The officer in charge of records looks up his docket of Peugeot NX 1912 models and finds that he has in the storehouse a set of cylinders saved from a previous wreck. He makes out an order for these to be delivered to the repair shop and records their departure from the store. From time to time repairs will be given out to the factory

When Big Shells Demolish War Cars Expert Hands Promptly Rebuild Them and Send Them to the Front Again.

In the upper left hand picture is shown a car which was "hit squarely in the nose," but will soon have another motor and be on its way again. In the upper right hand picture we have a lot of faithful cripples, who will be all right again when the motor doctors are through with them. The large center picture shows mottos and steering columns that eventually will be sorted out and put in order. Below are shown motor car frames—the twisted and distorted skeletons of once famous cars that couldn't survive the terrific storm of shot and shell.



having originally built the car, and it is the army which will provide the replacements to be used in that car. As European factories are generally working on munitions, the factory stock of spare parts is often low, and in many cases it would be necessary to make parts specially but for this complete system of classifying all parts taken out of condemned chassis. There are numerous cases also of old models still fit for service, but for which spares cannot be obtained owing to the factory being in the hands of the enemy, the firm having disappeared, or other causes. In these instances the army stock allows good vehicles to be repaired. A particular instance noted during my visit was several Mercedes-Daimler trucks captured from the enemy or picked up on the battlefield. Several of these had been put into service entirely owing to the fact that spares had been secured from disassembled Mercedes-Daimlers. It is estimated that the French army is saving \$5,000 a day on its spare parts bill alone by reason of the intelligent application of this system.

The big open air garage in which considerably more than 1,000 war worn cars are awaiting treatment is one of the most picturesque sights in connection with the war. There is such a variety that it needs a lifelong connection with the automobile industry of two continents to identify them without reference to the maker's nameplate. Every possible cause has helped to bring them to this common meeting place. Some are merely worn out from hard service; there are cases of collision, fire, water, high explosive shells, machine gun and rifle fire. A modern looking gray Panhard limousine appeared to have little the matter with it, its tires were intact and its body carried only the scratches which come of hard service. But when the rear door was opened a silent tragedy was revealed, for a shell had burst inside and the blood of brave men had dried on the floor and seats of that once elegant limousine.

All the men connected with this depot are beyond the fighting age. The only one who could lay claim to youthfulness was the officer who had evolved the card index system. For years before the war he had been a salesman in Paris and London automobile showrooms, and had been selected for this post on account of his organizing ability and his intimate knowledge of the features of all makes of cars. In the various departments were to be found engineers, foremen and testers from the leading French automobile factories—men whose age or constitution would not allow them to undertake the rough work of the trenches, but who were capable of a honest day's labor.

The system of economy was spread to the tools with which the men worked. Tubular chassis built by Renault about 1900 constituted excellent floats for moving material about the yard when stripped of all their organs but the steering gear. Wheelbarrows with a ball-bearing motorcycle wheel and a body made out of a truck's side panels cost practically nothing to produce and were more satisfactory than the usual article delivered by the stores. The round sheds which serve as offices and will have to be pulled down when the war is over had windows taken from derelict hotel omnibuses. Chain driven truck rear axles and springs, of which scores could

be saved from the wreckage, were almost ideal for field kitchens.

With this system in proper working order, a considerable amount of material is accumulated which cannot be used again in the rebuilding of automobiles. This comprises stocks of aluminum, copper, brass, sheet steel, high grade steels, mild steel, etc., all of which are sold to the foundries working exclusively for the War Department. The State monopolizes metals and eliminates private speculation.

In conjunction with the central receiving and dissecting department is a central repair shop. When this work was begun the repair shop officers were given a wholesale war merchant's storeshouse and yards and told to make the most of them. A few months later those empty buildings and deserted yards had been transformed into well equipped shops filled with all kinds of automobile underparts or waiting repair. Technically this central repair department only differs from civilian repair shops by reason of its size and the variety of work undertaken. Thus in addition to the usual divisions dealing with motors, gearsets, rear axles, etc., each of these is subdivided according to make. Men who have had experience of American motors, for instance, are kept on that class of work as much as possible, while Knight motor specialists are kept busy on sleeve valve engines. The range of work covers everything from a heavy 60-horsepower four-wheel drive tractor to a lightweight motorcycle, while the individual repairs may be the changing of a steering gear or the complete reconstruction of chassis and body. Under such conditions a cast iron system is not possible of application, yet the general arrangement is wonderfully orderly and economical. At one end of the building the chassis are dismantled and frame, sheet metal and radiator repairs are carried out. The various units are passed into the engine, gearbox and rear axle departments and assembly carried out on the usual factory lines. Spares are obtainable from the stock of dismembered cars by an order on the central supply stores from the home factory, or in exceptional cases the parts may be made in the shop.

The road test department is similar to that of the big factories, for every chassis after assembly must go in the road to be passed by the tester. The authorities have at their disposal a remarkably good class of men for this work (several racing mechanics who had

been through the whole series of Gordon Bennett events were noted among them), and the officers pointed out testers from such factories as Brasier, Panhard and Delaunay-Belleville. After the road tests the chassis pass to the body shops, where they are completed, given a final road test and then returned to the receiving yard, from which they are redistributed to the army as required.

In the early stages of the war tire economy was considered a matter of no importance. Drivers of touring cars, having neither time nor means of repair, left their punctured tires and casings by the roadside and put in a claim for new ones, which claim was never refused. Now all that is changed. Every worn casing and every punctured tube must be returned to the depot from which the driver works. This depot sends its damaged tires to the central repair department, and here, in a specially equipped shop, tubes and casings are made almost as good as new. Repaired and tested tubes are packed in boxes marked in big figures with their dimensions, and re-

turned to the depot from which they were issued.

There is more repair work to handle under war conditions as found on the frontier in the north of France than in this case in the civil service. But on some parts of the front the percentage of straggled automobiles and trucks is only slightly higher than in times of peace. The more dangerous conditions, however, and the fact that drivers' cars are not selected with as great care in such circumstances, go a long way toward making up the increase in repair

ANATOMY

If you want to give your car "legs" lubricate it with **POLARINE** Friction-proof, Carbon-proof. Sold wherever you see the Socony Sign.

LOOK for THIS SIGN

STANDARD OIL CO. OF N.Y.

work over normal conditions which are found at the shops. Still, it is surprising how hard it is to put a motor vehicle entirely out of running order by bullet and shell fire. The bodies of the machines are frequently wrecked by shells, but it requires a direct hit of very heavy shells to render a chassis unit for further service. It is a simple matter to replace the body work and even trucks which have been under direct fire, in an extent that they had to be abandoned have been towed to a repair shop and put into serviceable condition once more.

The Rim King

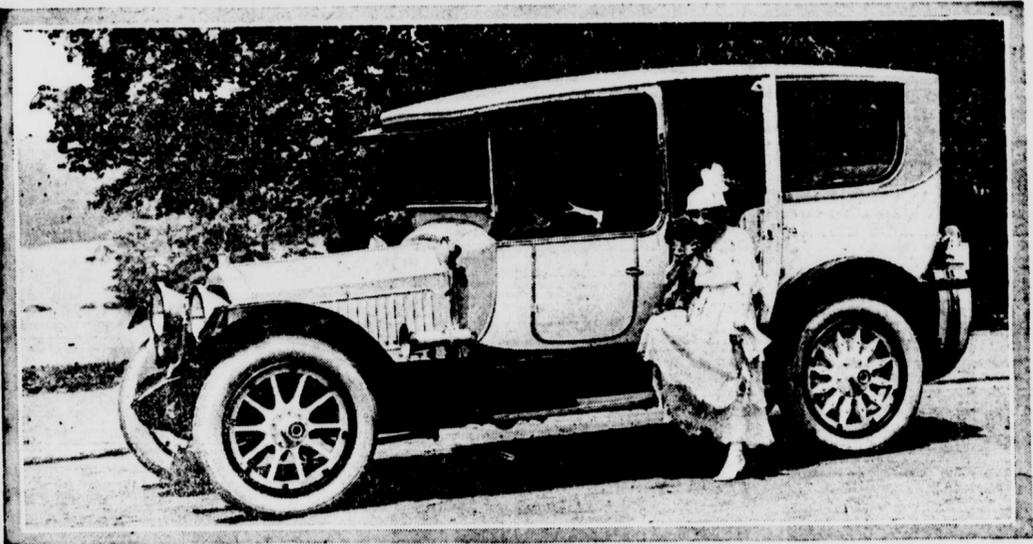
Louis H. Perlman.

A notable figure in the automobile world to-day is Louis H. Perlman, who recently established the validity of a demountable rim patent after a hard year's legal battle. The outcome of the decision has resulted in the organization of the Perlman Rim Corporation.

Its officers are W. C. Durant of the Chevrolet Motor Car Company; Louis Kaufman, president of the Chatham and Phoenix National Bank; and Mr. Perlman. Two factories owned by the Perlman Rim Corporation are now in operation at Jackson, Mich., and the other at Utica, N. Y. They are installing 4,000 sets of demountable rims daily at a total of 1,000,000 sets a year.

It is Mr. Perlman's intention to devote the whole of his time to the manufacture of demountable rims, and his efforts in this direction will be limited between the two factories and the New York office. The establishment of the rim company is the realization of Mr. Perlman's great endeavor and comes after a series of years of waiting, his trials and struggles, disappointments and his lavish expenditures of time and money.

Anna Held Always Finds Her Packard Twin Six Ready.



This beautiful limousine has been admired by many and represents about all anybody could ask for in luxury, comfort and utility in a motor car.

Meeting Motor Truck Needs

UNITED 1 1/2 to 6 TON TRUCKS TRIANGLE MOTOR SALES CO.

1872 Broadway. Phone 4336 Columbus

"Unite with the United"

ONC ADJUSTED NEV. R CHANGED

JEFFREY 4 WHEEL DRIVE 2 TON QUAD POERTNER MOTOR CAR CO.

1759 Broadway. Phone 1186 Circle

"Adopted by U. S. Army"

BURFORD 1 TO 5 TON TRUCKS

BURFORD CO., Ltd., 1874 Broadway

Phone 1191 Columbus. Service Station.

Also agents in New York, New Jersey, Pennsylvania and New England States.

72,000 MILES OF FABRIC.

"To give the public an adequate idea of the vast scope of our business we have reduced some of the facts concerning it to everyday terms," says J. N. Gunn, president of the United States Tire Company.

"For example, it is interesting to know that if all the fabric used by the United States Rubber Company in a year were made into a flat wide band that band would be 72,000 miles long. Last year our company produced 206,000,000 pounds of manufactured rubber goods that would fill a freight train 112 miles long."

ACCESSORY LEADERS

JOSEPH A. EVAN, Manager, 100 Broadway, 10th Floor, New York City.

1 door west of B-way. Open day and night.

We save you money on Standard makes Tires and Tubes.

PHILLIPS RUBBER WORKS, 1800 Broadway.

New and used Tires—Tubes. All makes. Also accessories.

I. GOLDBERG, 1800 Broadway, 10th Floor, New York City.

PHILLIPS TIRE CO., INC., 1800-1808 Broadway, Tires and Tubes, 10th Floor, Branch Store, 44 Broad St., Fortchester, N. Y.

Use Delivery Car Sensation **\$510** (As Illustrated)

1915 models; cost \$1,085 F. O. B. Detroit about year ago. They have been carefully used by prominent commercial houses, and are in excellent operating condition. 1,000 to 1,500 lbs. capacity.

Specifications—4-cylinder, Wagner electric lighting and starting system, full floating rear axle, Timken bearings, demountable rims, 33x3 tires, 14-horsepower Studebaker panel and open express bodies, WILLARD STORAGE BATTERIES. Only equalled in value by the NEW STUDEBAKER. REPAINTED ANY COLOR YOU SELECT. TIME PAYMENTS ARRANGED.

STUDEBAKER CORPORATION OF AMERICA

BROADWAY, at 50TH ST.

C. A. ACKERMAN, Manager, 1884 Bedford Ave., Brooklyn, Phone Circle 1401.

BROOKLYN BRANCH, 299 Central Ave., Newark, Phone Decatur 1484.

OPEN EVENINGS.

\$1295 CHANDLER

the Six with the marvelous motor

A Known Motor

In the midst of extravagant claims for new theories and untried ideas, the Chandler motor stands free from any hint of experimentation. From coast to coast men know what this motor does, men know they can depend on it, men know its service quality is enhanced by the fact that it is a proven mechanism, perfected through three years of conscientious refinement.

And Chandler bodies, the new big seven-passenger touring car body and the new four-passenger roadster, are the most beautiful motor car bodies of the year.

BRADY-MURRAY MOTORS CORPORATION

New York's Most Complete Motor Car Institution

1884 Broadway, at 62nd Street Telephone, 9175 Columbus

FARRELL AUTO CO. W. C. D. MOTOR CAR CO. C. T. BECKMAN & SON
1884 Bedford Ave., Brooklyn 299 Central Ave., Newark 351 Boulevard, Jersey City
CHANDLER MOTOR CAR CO., CLEVELAND, OHIO