COMFORT IN RIDING IS MAJOR PROBLEM

Engineers Studying New Methods For Easy Travelling.

Automotive engineers are giving serious scientific study to the riding qualities of automobiles with a determination to find out what makes a car comfortable or uncomfortable to ride in and to improve the riding characteristics. This is a complicated problem that involves physical effects, mental reactions and the physical properties of springs, tires, steering mechanisms and other parts of the vehicle, vibration and noise, and many other factors.

Spring action, as comprised of the springs, the tires and the seat cushions, has most to do with riding comfort. In a comprehensive paper on spring dynamics delivered at the semi-annual meeting of the Society of Automotive Engineers and printed in the July issue of the society's journal, O. C. Mock analyzed the action of simple single springs and of the combination of front and rear springs on automobiles.

Discomfort felt by the passenger he found, was due to force impressed on his person by upward movements of the car body and by the rate of change of the force. An upward force of more than 300 pounds was distinctly uncomfortable, but smaller forces, changing rapidly or repeatedly for a long time, also became uncomfortable and tiring.

The more flexible the spring the more efficient it is in decreasing the upward force agaainst the car body and the rate of increase of pressure against the passenger. The amount of force and its rate of application, are increased markedly by either stiffness or friction in the springs.

The best riding cars have a pitching period of around or below 100 per minute, while pitching motion between 120 and 160 per minute is distinctly disagreeable. The coupe or roadster, with most of the weight near the middle, pitches much faster than a long car with overhang at the rear, the easiest riding car being one with the engine well forward and luggage and spare tires mounted on the rear. Shock absorbers, said the speaker, should not resist the compression of the springs but should slow dow the return of the spring to and past its normal position, and they should not stiffen the springs.

HEAVY DUTY SPEED WAGON

Is Announced by the Reo. Motor Car Company

Considerable significance attaches to the announcement just made by the Reo Motor Car Company concerning the new Heavy Duty Speed Wagon, a vehicle designed to handle loads approximately two tons.

The purpose of the Heavy Duty Speed Wagon is to make available the factors of economy and fleetness for the hauling of loads which—by reason of bulk or weight—are not suited to the Speed Wagon qualifications. An increased wheelbase, stronger springs and a heavier frame better adapt the Heavy Duty Speed Wagon to such service as lumber hauling, furniture moving and other classes of carrying where added chassis length is desirable.

That the Heavy Duty Speed Wagon can maintain fast schedules with passenger car smoothness is due to the use of a 6-cylinder engine, pneumatic cord tires and a spiral bevel gear drive. The same speeds when returning empty, without undue shock or jar to the chassis parts—a feature decidedly not present in the average 2-ton truck. It is a seeming paradox that any vehicle can travel faster when loaded than when empty; the explanation is that without the retarding influence of the load, vibration is allowed full play, and vibration is one of the greatest destructive forces in commercial car operation. In the Heavy Duty Speed Wagon, vibration is largely absorbed by the tires and springs, and finally by the double-frame—a distinctive Reo feature.

Like all Reo products, the Heavy Duty Speed Wagon is designed and manufactured complete in the Reo shops—not merely assembled from parts supplied by different manufacturers. The stated advantages include; better balancing of relative strengths, a single standard of quality, closer inspections and centralization of responsibility.

The 6-cylinder engine is husky and powerful, and of time-proved efficiency. It has a 4-bearing crankshaft and a exceptionally large cooling area. A 13-plate clutch, large gears, smoothly operating spiral bevel gear drive, and a semi-floating axle—possessing the advantages of the full floating type without its disadvantages—are among the mechanical features deserving comment.

On examination, the combination stake and rack body shows the use of highest grade materials and careful workmanship, comfort for the driver being a pronounced feature.

SIGNAL NOT ENOUGH IN TURNING CORNERS

Judge Decides Motorist Must See That His Signal Is Observed.

According to recent judgment in an appeal case, it is not sufficient that a motorist signal that he is about to change the direction, slow down or stop, but he must also ascertain that the signal is observed by other users of the highway concerned. This was made clear by Mr. Justice Orde. Just how a driver is to ascertain this drivers will ask in vain. The adjutant in charge of Canadian Mechanical Transport during the war hazards the opinion: "I suppose every blinking vehicle will have to be equipped with a radio receiving and broadcasting set now."

Commenting on Mr. Justice Orde's declaration, Mr. Justice Middleton remarked: "That is the maritime law; a signal is never assumed to be heard until it is answered."

This comment was made in the appeal of Joseph Richechi from the decision of Judge Gauld, awarding F. C. Cooper $120 damages. One Sunday evening in August last, Richechi and family were driving from Beamsville to Hamilton. Mrs. Cooper was driving a family party in her husband's car from Hamilton to Beamsville. At a place where a private drive seemed an opportune place to turn, Mrs. Cooper cut in across the line of traffic. The Richechi car bumped the Cooper car and both cars were damaged.

Richechi sued for 120 damages. Cooper counter-claimed for a similar amount. The case was tried by Judge Gauld. The plaintiff's action was dismissed and judgment entered for Cooper at $120.

"Where automobile people go wrong," said Justice Middleton, during the hearing of the appeal, "is that they assume that they are lords of the highway."

"Where can a motorist turn if not as here?" asked G. C. M. German, for the defendant.

"It is dangerous on the Hamilton highway at any time, and the greatest care must be employed," said Chief Justice Latchford.

Justice Lennox of the opinion that the judgment was previously wrong.

The second divisional court allowed the appeal, entered judgment for the plaintiff for $120 and dismissed the defendant's counter-claim.

CAUTION AND CHAINS.

"If you are thinking of taking to the open highways in your automobile this summer, on an extended camping trip, be sure and provide yourself with plenty of chains" suggests the National Safety Council to motor tourists. The reason for such precaution is apparent to most automobile drivers.

"Country roads are in many ways more dangerous than city streets when they are wet and slippery. In the east most of the roads are paved so that tourists will find conditions about the same as in the city in which he lives. In the middle west fewer roads are paved. Improved roads and those consisting mainly of dirt, clay and sand are all dangerous in wet wether. Non-skic chains, although good preventatives of skidding on paved roads, are much more valuable on the dirt, clay or sand road, because they get better clinching contact with the road surface."

Another suggestion by the National Safety Council to tourists is daily inspection of the car after or before the day's run.