

### OVERSEA MECHANICAL TRANSPORT COUNCIL.

The work of the Oversea Mechanical Transport Council deserves special mention in this report, and the Transport Department welcomes the opportunity to record its appreciation of the significance of the practical tests now being undertaken in England with the ultimate object of producing a vehicle, or a combination of vehicles, that would be economically sound and in every way suitable for the carriage of relatively heavy loads over our unmetalled rural and back country roads.

My report of last year mentioned that the Directing Committee of the Council was then experimenting with—

- (a) A specially constructed caterpillar type of track as part of a proposed combination tractor-trailer unit to carry a load of 40 tons; and
- (b) An all-wheeled tractor-trailer unit on pneumatic tires for a pay-load of 15 tons.

Since the series of tests was more satisfactory in the case of the latter unit, and as it also held out better prospects, the Committee has suspended work on the design of the large "tracked" unit, and has concentrated its energy upon the 15-ton unit.

The tractor has four axles and eight wheels fitted with large section pneumatic tires: all the road wheels are driven, steered, and braked. It is designed to carry a pay-load of 3 tons and to haul two eight-wheeled trailers each carrying a pay-load of 6 tons, and is fitted with a petrol-engine. As no axle-weight exceeds  $2\frac{3}{4}$  tons with the 15-ton pay-load, the pressure on the surface of the road is less than 40 lb. per square inch—i.e., less than that of a normally loaded 30 cwt. motor-lorry. In addition, the speed of the unit is governed to twenty miles per hour, so as not to cause undue damage to earth roads.

During the first five months of 1932 this vehicle travelled 2,000 miles under various trial conditions, including road tests with a pay-load of 21 tons. The Directing Committee has recently reported that the unit is "very satisfactory," and further experimental tests are in hand. It is intended to build a second 15-ton unit embodying improvements which will increase the efficiency and reduce the cost of the tractor, which will be fitted with a heavy-oil (Diesel) engine.

The Directing Committee recently reported a well-founded belief that "the cost of haulage with a 30-ton all-wheeled unit would be considerably below that of the smaller 15-ton vehicle, and they would much regret curtailment of their work, however convinced they may be of the utility of the latter unit."

### THE HEAVY-OIL ENGINE.

In the field of commercial transport the contest for supremacy is still "on" between the heavy oil engine and the petrol-engine, but as yet even the most enthusiastic supporter of the former type of engine would hesitate to predict the final result.

It is recognized that the preliminary trials have shown that the all-round performance of a vehicle equipped with a heavy-oil engine is at least equal to that of a similar vehicle with a petrol-engine. However, there is a considerable diversity of opinion regarding certain peculiarities of the heavy-oil engine, but good progress is being made toward the elimination of these. The manufacturer of this type of engine—formerly popularly known as a "Diesel," but now more correctly referred to as a "compression ignition (C.I.) engine"—is striving for less weight per unit of horse-power, a lower first cost, less smoke in the exhaust, and less noise when the engine is "on light load." He is confident of success, partially, if not entirely, and is being encouraged to persevere by sundry experienced owners of both large and small fleets of petrol-engined trucks, buses, and tractors.

At a meeting of the Royal Society of Arts in London last December, Mr. H. R. Ricardo, who has a world-wide reputation as an expert in matters pertaining to the internal-combustion engine, said, "The present time marks the serious entry of the C.I. engine into the transport field; hitherto, the vehicles thus equipped have been principally in the hands of enthusiasts who have been somewhat apt to gloss over defects and extol virtues." He also expressed the conviction that the British engine was in advance of its foreign contemporary.

At the Commercial-vehicle Show held in London in November last no less than ten manufacturers exhibited heavy-oil engines suitable for use in commercial vehicles.

As an indication of the growing confidence in the C.I. engine, it is perhaps appropriate to mention that during the year some operators in England have placed relatively large orders for C.I. engines, one of these was for 127 engines, no less than ninety-one of which are intended for the conversion of a portion of the company's existing petrol-engined fleet; the balance are for new chassis.

The omnibus with a "Diesel" engine that was put into service at Auckland about a year ago has, I understand, proved satisfactory, and the operating company has since converted another bus from a petrol to a heavy-oil engined unit, while some other operators are also considering conversions to C.I. engines.