

It should be remembered that the Convoy was not operated solely for the purpose of securing engineering data, with the result that the reports from drivers and mechanics were frequently only approximations, and the money value of the part that was worn, damaged, lost, or had failed entirely, was never definitely established; nor, was the time spent in making repairs, and the time the vehicle was not in operation, due to the repairs being made, taken into consideration.

b. GENERAL CONCLUSIONS: In general, very few serious automotive troubles developed, but the experience gained on the trip and the information secured from an examination of each vehicle after arrival at San Francisco would seem to warrant the following statements.

(a) cooling Systems. The vertical tubular type of radiator, with bolted-on upper and lower tanks in the most satisfactory on military vehicles, because of the facility with which it may be cleaned and repaired. The addition of a temperature regulator in the water line, which would restrict the flow of water until the motor had warmed up, and such as is now standard equipment on many commercial trucks, would be most desirable. Such a device would be simpler and less expensive to install than radiator shutters, less liable to damage, and is automatic in its operation.

An endless flat fan belt, of leather or rubberized fabric, is most desirable for military motor vehicles, and an effort should be made to standardize the width and length of these belts. An extra engine belt should be carried in each vehicle at all times. The "V" fan belts are not desirable, but on the older trucks now in service, some form of a dust pan should be placed in front of the lower fan belt pulley to protect the "V" belt.

(b) Motors. Because of the high percentage of failures experienced with the valve tappet rollers and guides and the valve springs of the Class B motors, prompt attention should be paid to the development of a more durable valve lifter assembly, which will be interchangeable with that now in use. It is suggested that steel be used in the construction of the guides, instead of cast iron as at present, and that the valve springs be heat treated more carefully.

The governors of all trucks in the Convoy were rendered useless during the first few days of the trip, resulting later in many burned-out connecting rod bearings, due to speeding the vehicles. Some means should be provided to protect the governors against tampering on the part of drivers and mechanics.

A simplified carburetor would be advantageous on the Cadillac motor cars used by the Army, as the present sensitive automatic throttle and auxiliary air valve are not thoroughly understood by the average mechanic. Stewart, Mayfield and Bell & Hall carburetors appear to be unsuitable for military purposes.