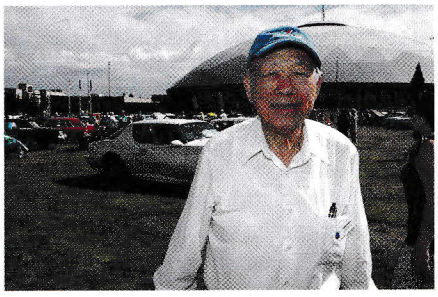

Odds N' Ends

By Pete Yuen
AOAI British Columbia member

Brakes

There are two important essentials that every car must possess if it is to be driven. The first is that it must go, and then it must be able to stop when needed during a time that it is going.

Cars on the road these days are driven (forward or backward) by mode selected by the driver. The energy from an engine or from electric motors propels the vehicle. The energy to slow or stop the car is by friction in the braking system when the brakes are utilized. The braking system can be activated by the driver by pressing downward on the brake pedal or, since 2009, when the computerized braking system was introduced and used in some cars, the computer could also apply the desired pressure to the braking system to either slow or to stop the car from going forward or backwards.

2009 - Computer controlled braking was introduced-

Autonomous Emergency Braking (AEB) is defined as a system that constantly keeps track of the road ahead and will automatically halt the vehicle if the driver fails to take action. This technology was first introduced in 2009 to prevent car crashes or at least reduce the seriousness of the impact of an unavoidable one. The AEB system is optional on some new cars while it is included on the higher priced vehicles.

Prior to the 1954 Studebaker vehicles, the braking system was somewhat less than acceptable to me. In having owned a 1947 Studebaker, I would go as far as to say the Studebaker competitors had better braking systems in their vehicles. I was unhappy enough with the braking system that I added a brake booster. Braking became acceptable then. The brake booster was from a Cadillac, found in an auto wrecking yard. Power brakes were available in the higher end cars like the Lincolns and Cadillacs prior to 1955, when power brakes were an option for Studebakers. Brakes from 1954 in Studebakers were an improvement over the preceding system.

In the pre-1954 Studebaker vehicles, braking systems can be improved by adapting the braking system from Studebaker cars of the '60's. Braking systems from V8 equipped Studebakers can be adapted to the standard, 6-cylinder models for improvement over the originals from the factory.

Power brakes were developed, circa 1921. Duesenberg cars were among the first to use them.

Disc brakes:

The 1949 Crosley was the first U.S. production car to be equipped with modern disc brakes. But it wasn't a success, and so its actual impact on the auto industry was more or less negligible. Then, in 1963, Avanti claimed that it was the first American production car to have disc brakes. The Avanti had disc brakes on the front and drum brakes on the rear. Some European cars already had the disc brakes at the time.

A proper functioning brake system is essential for the safety of the driver and others on the road or anywhere else that the car has to be brought to a stop. Still, a driver must be aware of the road conditions. A car with a braking system that is in proper working order does not guarantee that the car will be able to stop as planned in an icy road. If the roads are icy, stay off them if you can.

Brake problems do, from time to time, arise. It could be from usage or non-usage. Brake problems with usage is caused from normal wear. Brake problems arising from no-usage is rusting and deterioration. As far as the braking system is concerned, it is better to be in use than be in a vehicle that is stored for long periods.

The ABS brake system:

The first fully-electronic anti-lock braking system was developed in the late-1960s for the Concorde aircraft. The modern ABS system was invented in 1971 by Mario Palazzetti (known as 'Mister ABS') in the Fiat Research Center and is now standard in almost every car.

Brake Fluids are categorized into four main classifications by the U.S. Department of Transportation (DOT): DOT 3, DOT 4, DOT 5 and DOT 5.1. Most fluids fall into the DOT 3, DOT 4 or DOT 5.1 classification. These fluids are all hygroscopic, which means they absorb moisture from the air. Then there is the silicone brake fluid that is identified/classified by the Department of Transportation as DOT 5. The silicone brake fluid does not absorb moisture. Most cars on the road use DOT 3 in Canada and most likely in America too. Not sure if the Studebaker Avanti used DOT 5 brake fluid or not. Apparently, some of the non-Studebaker Avantis did have silicone brake fluid installed at the factory.

There are Pro's and Con's to using silicone brake fluid that may be discussed at another time.

Since the common brake fluid absorbs moisture, the brake fluid should be changed every 2 years on the average.

Water in the brake lines lowers the boiling point of the fluid, so stopping ability can diminish in hard stops as heat in the system increases. Braking will go back to normal after the fluid has cooled.

Moisture, over time will cause internal corrosion in the brake

See ODDS 'N ENDS, page 26