

Fig. 23

Fuel and Exhaust System

The fuel tank is located in the front directly behind the rigid front crossmember and ahead of the passenger compartment front bulkhead (Fig. 23). The location of this tank between such rigid structures makes it virtually immune to front, rear or side collisions. Another advantage of this location is that it is completely removed from the exhaust system.

From the forward fuel tank to the rear mounted engine, the fuel line is enclosed practically throughout its length by the shielded underbody control passage.

The engine location in the rear has made possible an extremely compact exhaust system, a single unit which includes the exhaust

pipes, muffler and tail pipe. The exhaust pipes are packing-flange connected to the exhaust manifolds. Both pipes turn toward the right side of the vehicle, combine into a single pipe and then into the muffler. The cylindrical muffler is of the reverse flow type and is attached by means of a bracket to the right side of the engine. Proximity to the engine helps reduce condensation problems and contributes to longer muffler life.

Brakes

Since the Corvair carries approximately 60% of its weight on the rear wheels, the distribution becomes very favorable during braking action. Advantages which stem

from the Corvair weight distribution include an effective weight transfer forward, which permits nearly equal distribution of braking effort.

In actual practice it is desirable to calibrate the braking effort distribution so that the rear wheels slide first in a panic stop. As known from experience, a sliding wheel can take no direction, but if only the rear wheels are sliding a car can still be directionally controlled by the front wheels which is especially important for emergency conditions. Therefore, wheel cylinders are 7/8 inch diameter front, and 15/16 inch diameter rear to provide effort distribution of 46% front and 54% rear.

Corvair brakes are of duo-servo type with bonded facings. Total lining area is 120.8 square inches, divided equally front to rear with 1-3/4 inch wide shoes and 9 inch diameter drums.

Comparison of a 1960 Chevrolet and a Corvair during braking are shown in Figure 24.

Weight transfer during braking is a function of the deceleration rate, height of center of gravity, length of wheelbase and the total weight. The percent of weight transfer then can be expressed as:

Percent weight transfer equals

$$\frac{dh}{l} \times 100$$

where:

d = Deceleration rate, expressed in fractional part of gravity

h = Height of the center of gravity above ground in inches

l = Length of wheelbase in inches

Comparing data for the 1960 Chevrolet and Corvair, we have the following for a 1/2 G deceleration:

	1960	
	Chevrolet	Corvair
h	22.0"	19.4"
l	119"	108"
weight transfer	9.2%	9.0%

The remarkable thing to note from these figures is that the percent weight transfer to the front during braking is actually less

BRAKING WEIGHT TRANSFER

1960 CHEVROLET BISCAYNE

CORVAIR

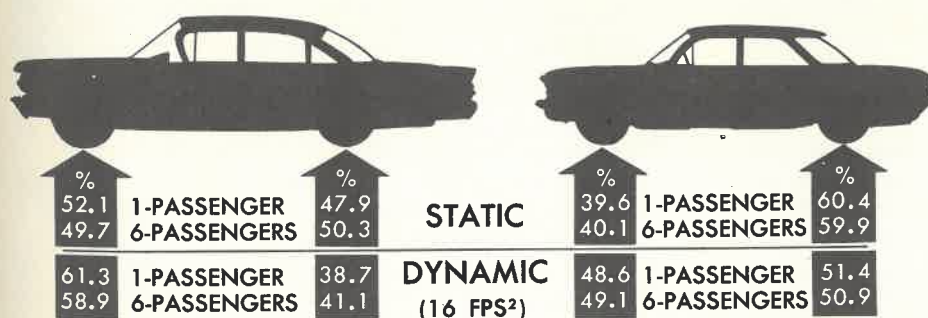


Fig. 24