

# WHATEVER HAPPENED TO TRANSAXLES

**W**ITH ITS "Wide Track" corporate image fairly well established, Pontiac, in the late '50s, decided it was time for something different in engineering. Perhaps a compact car with broad utility, good performance, adequate room and comfort for six people, and plenty of luggage space would tempt the buying public.

Transmission housings, for one, always had been space-eaters in the front passenger compartment and, if this could be eliminated, there certainly would be more legroom and overall space, Pontiac reasoned. Previous studies showed that elimination of the transmission hump increased front seat footroom by 50% and provided a remarkable improvement in comfort.

Under former Pontiac General Manager Semon "Bunky" Knudsen, the division took the plunge in 1961

with such a car—the rear-transmission Tempest. An in-line 4-cyl. engine, made from one bank of the Pontiac V-8, was planted up front and a new transmission was fitted into the otherwise wasted space between the rear seat back and the rear axle. Front and rear drive units were connected by a propeller shaft and steel backbone. A long, thin torsion bar bent in an arc transmitted the drive from the engine to the transmission (this unit was later dubbed the "rope"). The engine, backbone and transaxle arrangement was a new chassis concept.

The transmission was unique in two respects. The drive was "split" in high range and the overhang converter ran in the open. The drive from the engine passed entirely through the gearbox and axle to the air-cooled torque converter at the rear. The rear transmis-

sion dictated the need for an independent rear suspension.

The Tempest, which later was offered with a V-8, provided nearly ideal 50/50 weight distribution. A 4-door sedan equipped with an L-4 engine and carrying five passengers, for example, demonstrated front/rear weight percentages of 49.4/50.6.

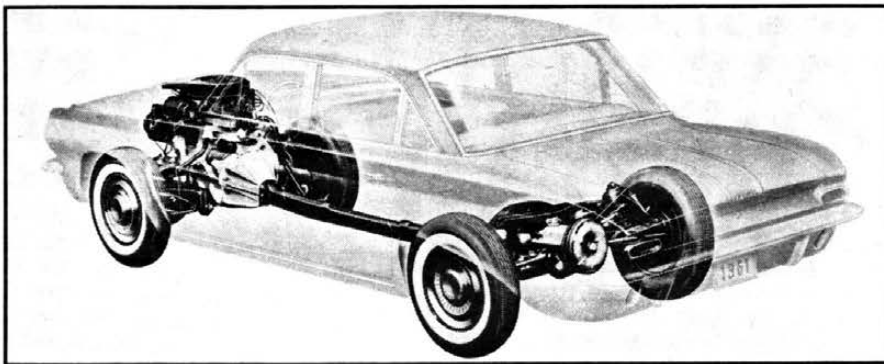
The design of the Tempest enabled Pontiac to build the car on the same assembly line with the larger Pontiac models.

While there was nothing wrong with the Tempest, the transaxle setup proved overly expensive from a manufacturing standpoint. In addition, though the "rope" drive-train worked satisfactorily, it tended to vibrate under certain conditions. Some automen questioned the benefits the ultimate buyer received from the transaxle. Engineers point out that many things attained with the "rope" can now be accomplished with two constant velocity joints. The entire driveline can be dropped by simply tilting the engine downward at the rear and lowering the rear axle nose toward the front, thus producing a "radical" angle—accommodated only by the constant velocity universal joints.

The transaxle Tempest lasted three years. Sales totaled 100,783 in 1961, 143,193 in 1962 and 131,490 in 1963.

—Ed Janicki

**ENGINE FORWARD, "rope" driveshaft, gearbox and torque converter to the rear eliminated transmission hump, but proved expensive to manufacture.**



**TRANSAXLE CONFIGURATION** permitted adequate luggage and passenger space in the Tempest. More than 375,000 were built in 1961, 1962 and 1963.



**TEMPEST, compact and standard foot space is shown, from top.**

