

## “PEAKING” IN THE REARVIEW MIRROR

By Ken Peak, RCC Historian

### WHAT DID CORVETTE AND THE STUDEBAKER AVANTI HAVE IN COMMON?

Recently a nationally televised auto auction commentator remarked, when a Studebaker Avanti crossed the auction block, that Studebaker made a number of fiberglass car bodies for Corvette in the 1950s. That statement does not appear to be true (at least, such could not be found in the related literature); however, there is some crossover between the two vehicles.

In 1953, the Chevrolet Corvette became the first production automobile with a molded fiberglass reinforced plastic body. However, that almost did not happen. Previous to that, Robert Morrison, founder of the Molded Fiberglass Glass Company (MFG) of Ashtabula, Ohio, had visited GM executives in Detroit to discuss what fiberglass could offer them; however, he found that GM was dedicated to using steel bodies. In fact, as he departed the meeting on the elevator, a purchasing director informed him of the official decision: the Corvette would be made of steel, and GM anticipated a demand of 10,000 units because no sufficient fiberglass capacity existed. Morrison assured him that MFG and Owens Corning *could* provide the units. The following day Morrison returned to his home, where he would learn that GM had reversed its decision! It would go with a Corvette body that was made of Morrison’s Fiberglass Reinforced Plastic (FRP), otherwise known as fiberglass.

Morrison immediately initiated all of the financing, production facilities, engineering support, tooling, and production personnel to fulfill his promise. He and his team had to resolve concerns about a production site, equipment, and scheduling. The basement of Morrison’s home became the design center for the Corvette’s fiberglass parts, with MFG and GM employees working side by side on a ping-pong table.

Of course, the Corvette hasn’t seen an actual fiberglass car since 1973, when the composition changed from conventional fiberglass to a lighter sheet-molded compound (SMC), composed of fiberglass, resin, and a catalyst formed under high heat and pressure. This new material produced panels that were smoother right out of the mold, required less surface finishing prior to painting, and created a better final paint finish. But Corvette continues this legacy of non-traditional, lightweight bodywork that began in 1953.

### THE STUDEBAKER AVANTI

Seeing GM’s success with the Corvette, Studebaker president Sherwood Egbert (who took over the company in 1961) and chief engineer Gene Hardig agreed that its new 1962 Avanti should

have a fiberglass body as well - that it would work well with the Avanti body as it sat on the Studebaker Lark convertible's X-frame. In eight days a clay model was developed, and the complete design only took 40 days. Egbert and Hardig knew the cost of each body would be greater with fiberglass, but tooling costs would be less. **Avanti's fiberglass body, like the Corvette's, was made by MFG** and delivered in ten months. Tooling costs were less than one million dollars; with steel, the same result would have required 15 months and \$17 to \$20 million. Fiberglass also allowed a production schedule of 1,000 units per month - substantially below the 1,700 to 2,000 units considered economical for steel.

An MFG Avanti body consisted of 100 molded parts and 36 pieces punched or sheared from a fiberglass sheet. MFG assembled, finished, and painted Avanti bodies for Studebaker and also shipped parts that Studebaker assembled into bodies at their plant in South Bend, Indiana. The completed body weighed 510 pounds, 355 of which were fiberglass parts that were molded and/or riveted into the body to give reinforcement.



## FINAL THOUGHTS

Comparisons have been made between the original, 1963 Avanti model (its last production year) and Corvettes of that same year. While Corvette's 1963 Rochester fuel-injected models (327 cu, variable hp) were only available with four-speed manual transmissions, the Avanti (289 cu, 240 hp) came with a 3- and 4-speed manual and a 3-speed automatic. Other than that, they shared several similarities: both Avanti and Corvette trannies were built by Borg-Warner. Both of their fiberglass bodies rested atop full-frame construction. Both rode on 15-inch tires and had power brakes. Neither car had air conditioning (AC became available later that year for the Corvette, however, but only 278 buyers chose that \$421.80 option), and both had almost identical rear end ratios (3.73 for the Avanti, 3.70 for the Corvette). Finally, both cars weighed within 180 pounds of each other.

Sadly, with sales sagging, in 1964 the Studebaker Avanti name, tooling, and plant space were sold to two Indiana Studebaker dealers who re-introduced a slightly modified, hand-built

version of the original Avanti (often termed Avanti II), using leftover Studebaker chassis and engines from General Motors. The Studebaker name was dropped. From that point, a succession of people bought the Avanti II, the last of which was made in Cancun, Mexico, in March 1986.

Looking at today's Corvette, the C8 is the fourth generation of Corvette continues to use a three-layer, multi-material body structure for the frame, body structure, and body panels. A website, Composite World, says "This layered hybrid structure not only provides affordable lightweighting in high production volumes but also permits multiple vehicle variants to be produced at low tooling investment."

For those wishing to read more about the composites used in the C8, Composites World recently had a two-part article on that subject, available at:

<https://www.compositesworld.com/articles/composites-intensive-masterwork-2020-corvette-part-1>.



T. H. Keating, Chevrolet's top man, takes "cornering" demonstration in the *Corvette*, first mass-produced plastic-body car. Designer Harley Earl is at the wheel.

Chevrolet Gen. Mgr. Tom Keating is passenger as engineer Harley Earl drives the mass-produced plastic-body Corvette.