

2009 Corvettes hit the roads of Colorado SEPTEMBER/OCTOBER 2008 \$2.95

# america's sports car

A PUBLICATION OF THE NATIONAL CORVETTE MUSEUM

**A Corvette Celebration with  
Family and Friends**



# **What's in Your Museum?**

## **Corvette's Unique Body**

by Rick Montgomery

Many things make the Corvette a unique automobile -- innovative styling, sports car heritage, always a two-seater, a racing winner, and the flagship for GM's performance and technological image. One of its most unique features, however, is its fiberglass/composite body.

The Corvette wasn't the first fiberglass bodied vehicle to exist, but it was the first mass produced car to utilize the material for its body panels.

Harley Earl was one of the first designers to consider using fiberglass for automobile bodies. He saw the U.S. Rubber Company's concept car, Alembic I, in the early 1950's (See ASC Jan/Feb 2006), and was impressed with the quality and shapes that could be achieved with the plastic material. At the time GM's Project Opel vehicle was being considered and a very short development and build schedule was anticipated. A major concern with the short build schedule was whether the futuristic, sleek, low body design could realistically be fabricated in steel. Steel dies of the day lacked the forming capability they offer today. The fiberglass "lay-up" process didn't present those problems; a fiberglass panel could be made over whatever mold was created and could be made in a matter of a few days. Fiberglass became the material of choice for the new concept car.

The story of how fiberglass came to the Corvette is highlighted in two displays at the National Corvette Museum. The first, showing GM's Parts Fabrication Operation where the body panel molds were made and the lay-up process refined and perfected, is a documentary on the early days of fiberglass development. The second, honoring Robert Morrison of Molded Fiber Glass Company (MFG), highlights the company which was given the first Corvette body contract in April, 1953. Both displays provide a fascinating insight into the creativity and risk taking employed by both organizations at a time when plastic body technology was in its infancy.

GM's Part Fabrication Operation was the perfect organization to take on the fiberglass development process. Parts Fab, as it's known, is located directly across from the GM Technical Center entrance on 12 Mile Road in Warren, Michigan. For years its main customer has been the GM Design Staff, so it was no surprise that it would get the assignment for Project Opel. While Parts Fab may not have had all the expertise necessary at the time, it had the skilled technicians and materials experts to figure out how best to make fiberglass panels. Many questions had

to be answered: What proportion of plastic resin and hardener was best? How many layers of fiberglass were necessary? How large can the panels be? How long do they need to cure for maximum strength? How do you surface the panel to aid in final finishing? Is it better to make a single large panel or multiple smaller ones? All of these questions, and hundreds of others, needed to be asked and answered before fiberglass could go into production.

The Parts Fab video showing at the NCM reflects the process used for making the first Corvette bodies. A small number of technicians, using paint brushes, liquid resin, cut glass mat and cloth, worked together to fabricate the various body panels over mahogany molds formed for each individual body section. After curing, the panels were removed, trimmed, and glued together into one complete Corvette body. This was the assembled body that was installed on the Corvette chassis at the Flint Manufacturing plant.

Parts Fab was not created to be a large volume manufacturer. The quantity of bodies needed for the new Corvette could not be met using the Parts Fab facility. Thus, a high volume producer had to be found. Ed Cole was aware that a small company in Ashtabula, Ohio, was using fiberglass to make bread trays for bread delivery trucks. The trays were molded, fairly large and similar to a small auto body panel. Bob Morrison, the owner of the company called MFG, was invited to Detroit to determine if MFG could meet Chevy's needs. Morrison really had no idea how he was going to do this job, but he knew he'd make



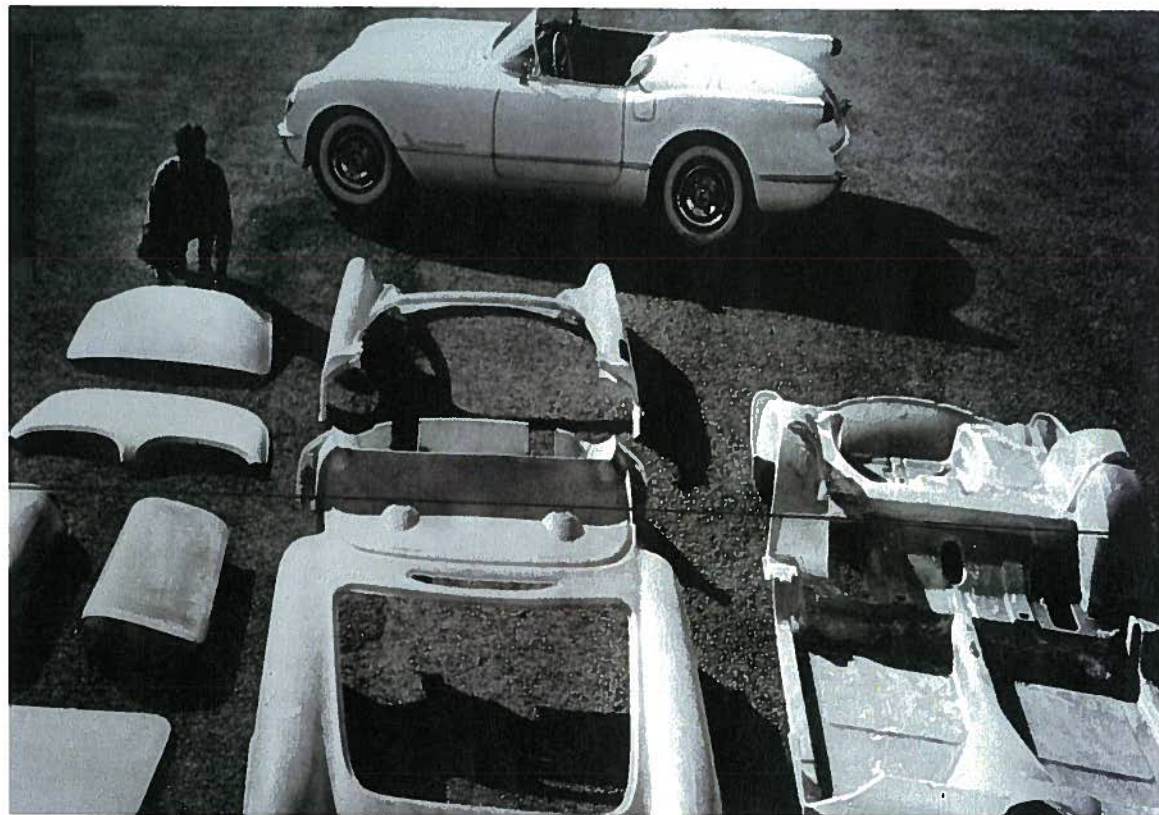
**Robert S. Morrison, 2003 NCM  
Corvette Hall of Fame Inductee**

it happen if he received the contract. After the meeting it didn't seem Morrison was going to be selected. He returned home disappointed. Later that evening, however, he received a call asking if he could make the first run of bodies by the June, 1953, start date. He said he could, his confidence exceeding his knowledge of how to do it.

One of Morrison's suppliers was a company called Owens-Corning Fiberglas (OCF). It was a leader in fiberglass manufacturing, making fiberglass cloth, mat and building insulation. Being aware of the challenges facing Morrison, OCF provided some technical and financial help to get MFG started in automotive body work. OCF knew that success by Morrison could result in more business for OCF in selling fiberglass materials.

Needless to say MFG was a success. Morrison found the way forward to make the first 300 Corvette bodies and continued supplying Corvette parts for many years.

Owens-Corning's involvement with the Corvette also grew over the years, but in a totally different venue. As Corvette's

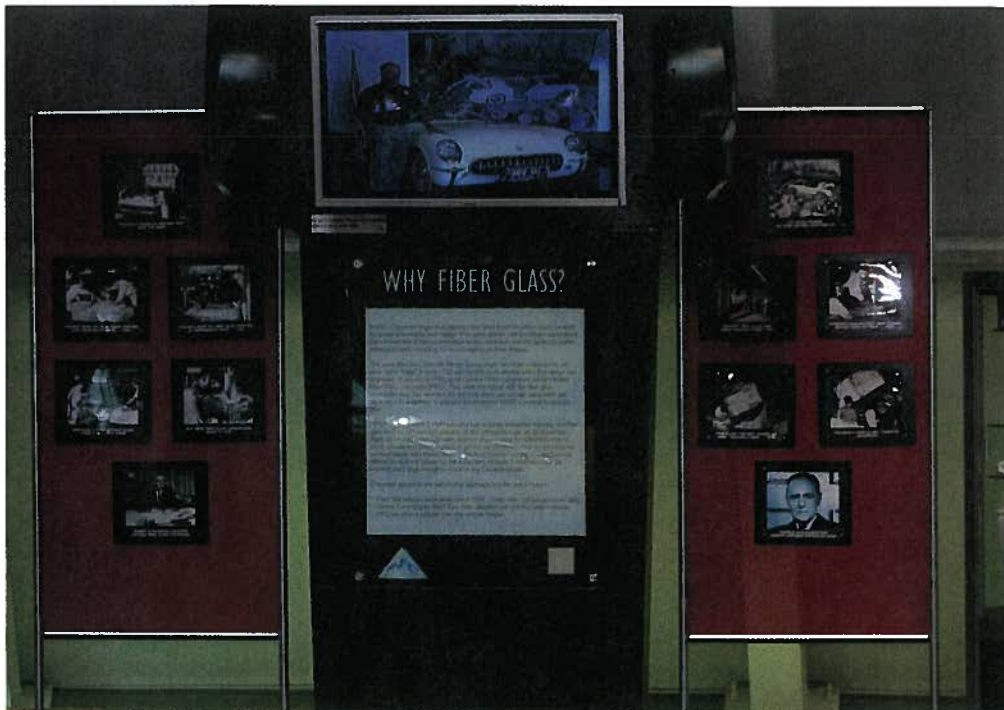


A mural on one of the NCM walls shows fiberglass body panels produced for Corvette.

reputation as the "fiberglass sports car" expanded, OCF saw a public relations opportunity to associate the company with Corvette racing. Two young racers from Detroit, Tony DeLorenzo and Jerry Thompson, had been successful Corvette pilots for a number of years. Even on their shoe-string budget the two racers were able to win many SCCA events. With a little assistance from Curtis LeMay, an OCF Board Member at the time, and Dollie Cole, wife of Ed Cole, in 1968 OCF became the main sponsor for the two-Corvette race team of DeLorenzo/Thompson.

Corvette racing history was enhanced greatly by the exploits of the Owens-Corning Fiberglas Corvette race team. During the years from 1968 to 1971 the DeLorenzo/Thompson OCF Team won nearly every race they entered, usually with one OCF car finishing first while the other came in second. DeLorenzo and Thompson gave many up and coming Corvette racers the confidence to try their luck in competitive racing. The success of the OCF team was the harbinger of today's C-5R and C-6R racing efforts.

Although the specific fiberglass composition has changed over time, Corvettes and fiberglass have been closely associated for the past 55 years. The combo will likely continue for many years to come, not only because they work so well together, but because, like a V8 engine, it's just part of what a Corvette is all about.



An exhibit in the NCM Skydome answers the question, "Why fiber glass?"