

## Wescott Fiberglass Manufacturing Process

*Wescott's creates quality fiberglass products by using:*

- **Quality materials**
- **Engineered and reinforced molds**
- **High quality black "sandable" gel coat**
- **Hand-laminated fiberglass**
- **Steel reinforced bodies, doors, deck lids, & hoods**

### Quality Materials

*Wescott's begins with good quality materials*

Wescott's uses a good quality isophthalic polyester resin, that has excellent shrinkage resistance, high impact strength, and a good balance between flexibility and rigidity. More importantly, this resin also has a temperature tolerance to 220 degrees F, very high for fiberglass resins. For firewalls we use a fire retardant resin; parts built with this resin will burn when flames are applied, but will not sustain a flame on their own.

### Reinforced and Engineered Molds

*Making a superior mold guarantees the successful fit of the part*

Most molds go through a process of engineering to make sure the part is as close to the original "look"— and original fit— as possible. A lot of time is spent checking and re-checking correct dimensions. Some parts require more engineering. For example, many fender molds are created in several pieces, in order to get proper full beads and flanges on the finished part. The mold is assembled to make the part and dis-assembled to release the finished, cured part. Most molds are reinforced with a steel framework to eliminate warping of the mold and insure reliable fit. The body molds have been extensively engineered and steel reinforced.



*1932 3-Window mold inside the lifting and rotating mechanism*

### Gel Coat

*The first step in the manufacturing process*

The outside surface of all Wescott parts is a "sandable" black gel coat. This is a preferred finish for parts to be painted because of a softer base resin for easier sanding, flexibility that prevents checking or cracking, and fillers that promote paint primer adhesion.

The gel coat is actually the first step in the manufacturing process. After the molds are cleaned, waxed, polished and prepared, the black gel coat is evenly sprayed into the mold. The gel coat will chemically bond with the fiberglass as it cures and will become the outer surface of the part.

### Hand Laminating

*The next step after gel coating is hand laminating*



*A laminator wetting out the mat with resin, then rolling out air pockets with a special roller.*

All Wescott fiberglass parts and bodies are hand laminated. A layer of fiberglass mat is placed in the mold and resin is rolled in with a serrated roller, removing air pockets and saturating the mat. Then the process is repeated until the desired thickness is reached. Hand lamination allows for an even thickness of fiberglass and a proper resin-to-fiber ratio. (Hand laminating is superior to cheaper and quicker "chopper gun" layups, where a mix of fiberglass fibers and resin are sprayed into the mold. Common problems with this method are thin or thick areas, or areas with too little or too much resin. This can cause weakness or warping, leading to fitting or appearance problems.) After parts cure and are released out of the molds, edges are rough sanded to the proper contour. Some finish sanding of beaded edges may be needed.



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### Steel Reinforcing Built In

*Steel frame built inside body shell*



Wescott bodies are designed with an internal steel structure for strength, safety, and rigidity. The doors, trunk lid, rumble lid, and 39-40 hoods also have an internal steel structure. Many bodies have steel side rail reinforcement to protect against side impact, as well as seat belt mounts to the steel frame. The steel structure includes mounting points for most hardware. The structure supports the fiberglass and keeps the bodies and parts dimensionally stable.

Bodies are laminated in one piece inside a large mold which is dimensionally correct, and extensively steel reinforced. The mold is carefully levelled. Most of the body steel support structure is built into the body while it is in the mold. The steel support structures are bonded at certain points to the fiberglass with a special glue, and parts of the steel framework are welded together during the assembly process.

The floor pan and firewall (on most models) are also installed in the body at this time, with fixtures to assist proper alignment. (Doors and deck lids are constructed separately, and mounted later.) The body is removed from the mold and ready for further assembly.

### Hardware Mounts to Steel

*Bodies are assembled so hardware mounts to steel framework*

The body shell is brought into the body assembly area. The body is then assembled with most hardware installed. (See the individual body style page in section B for details.) The steel support structures reinforces critical stress areas. Door hinge, latch, dovetail mounts, top and windshield post mounts, and many body-to-frame mounts are reinforced. These hardware parts bolt directly to the steel frame or “sandwich” the fiberglass between the part and the steel frame.

Doors and deck lids are constructed separately in special jigs, as an inner and outer fiberglass panel with a steel reinforcing structure inside. After construction they are fitted to the body and installed. The overall body steel



*Steel installation inside a '34 roadster door*

skeleton creates rigidity that helps with door and deck lid fit as well as opening and closing solidly.

Additional hardware and parts, such as window kits, may be installed. With a few more finishing touches, the body is complete.

### Attaching Steel to Fiberglass... Do's and Don'ts

*Steel structures have proven to be very effective when care is taken to use the proper attachment methods whether adhesive or mechanical. Proper adhesive selection is important, using a fiberglass layup directly to steel will usually fail. Attaching steel or other reinforcing to the middle of a panel will usually result in unwanted distortion.*

*On Wescott bodies, bonding reinforcing structures or other fiberglass panels to the middle of body panels is avoided whenever possible. A common incorrect installation method is to lay up fiberglass around, or “glass in” a reinforcing member in order to attach it to an outer body panel. This almost always warps the outer panel enough to be visible. Wood reinforcing is especially susceptible to this kind of problem because it does not handle tension stress well and is subject to warpage because of humidity changes. Instead, in a Wescott body, reinforcing is bonded to door jambs, under windshield post mounts, and other areas away from the middle of body panels. Bonds between fiberglass panels are usually on flanged edges, along reveal lines, or in other areas where a seam line will not show.*

*Stress problems in the Corvette, the mass production American fiberglass bodied car, were solved by using similar steel frameworks and attachment methods. The durability of Wescott bodies have proven these techniques to be a very durable..*

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## A History of Wescott's



• **1954:**

Dee Wescott started Wescott's Auto Restyling in 1954. The business at that time was largely body and fender repair and painting, but with a strong emphasis on Customs and Hot Rods (There were no "Street Rods" back then.)

• **The 50's:**

Wescott's quickly became THE name in the Pacific Northwest for high quality paint work or custom car work. Many cars painted or custom built by Wescott's were featured in various magazines during the mid and late 1950's. Dee was also active in drag racing and hardtop racing in the 1950's. He was the first president of the (Portland, Oregon) Multnomah Hot Rod Council, which helped move drag racing off the streets and onto designated drag strips (including one owned by the Council.) With the increasing popularity of the fiberglass bodied Chevrolet Corvette, in the mid-fifties Wescott's was one of the first body shops to learn how to repair this "new" fiberglass material. With knowledge of how to work with fiberglass, Wescott's began building a few fiberglass fenders and parts which soon found a market with Northwest drag racers hoping to lighten their cars, as well as some early restorers of Model A's and early V8's. Wescott's fenders were featured in the August 1958 edition of Hot Rod Magazine. From the beginning, Wescott's has always tried to manufacture the best fiberglass parts for early Fords.

• **The 60's:**

In the 1960's Wescott tackled many varied industrial and marine fiberglass jobs, including Coast Guard approved lifeboats and life rafts. Production of early Ford fenders and parts continued, with many improvements resulting from knowledge gained from the industrial and marine work. Fiberglass bodies were also being built for Indy type and ISCA race cars. High quality body repair and paint work continued, especially Corvette repair. About 1968, in the Heyday of T-Buckets, a discussion among several Portland area street rodders and restorers concluded that it was impossible to reproduce an early Ford

body with working doors using fiberglass. Accepting this as a challenge, in 1969 Wescott's introduced the 1931 Coupe body replica.

• **The 70's:**

Few sales resulted from the Coupe, but an interest was sparked among restorers for a replica 1931 roadster body, introduced about 1971.

With the rise in popularity of Street Rods and restoring early Fords in the mid 1970's, the demand for fiberglass



bodies and parts taxed the organization and physical plant. About 1977 the body repair and paint shop was closed, and industrial, marine, race car, and Corvette fiberglass molds were sold to other companies. About the same time, Karl Wescott, Dee's oldest son, joined Dee full time, and began developing a comprehensive reproduction parts catalog to complement the fiberglass line.

• **The 80's:**

Wescott began building exclusively for 1926-48 Fords and began stocking a large inventory of replacement parts for these cars. Big projects in the 80's included engineering and building molds for the '34 roadster body and '40 convertible. Wescott's also added and renovated buildings to enlarge the physical plant.

• **The 90's:**

In the early 90's Wescott's engineered and built molds for the 1932 3-window coupe and new molds for the 1931 5-window coupe. Dee continued with developing



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very high quality products, and in 1993 the extensively steel reinforced '32 3-window coupe body won the "Outstanding Safety Related Product" award from the Street Rod Equipment Alliance of the Specialty Equipment Manufacturer's Association. (Just the existence of these groups demonstrates the huge growth and popularity of the street rod industry over the decades.) Many new molds were developed to fill in "gaps" in the fiberglass line.



• **The 00's:**

Seeing a need for quality replacement and custom hardware, Karl learned how to make patterns for cast metal parts. Wescott's began making most door hinges for 1926-40 cars and pickups, and most top hardware for 1932-48 convertibles. DuVal style windshields cast in silicone bronze for 1932-36 roadsters were introduced in 2000. Dee passed away in 2009.

• **The 10's**

Currently Karl and his wife Mary are operating Wescotts in 16,000 square feet in 5 buildings (including the original building built in 1954)



### Why buy Wescott Fiberglass?

**1. The best of Fiberglass.**

*No rust. No dents. Ease of prep for paint.*

**2. The best Fiberglass.**

*Tough, durable, warp resistant, and crack resistant.*

**3. For bodies, real structure support.**

*Full inner steel support structures. Stress points are anchored to the chassis frame. Structural deficiencies in original bodies which cause tears and cracks have been engineered out.*

**4. No structural wood**

*Wood rots. Wood warps and swells with moisture changes. Mounting holes in wood deteriorate with vibration.*

**5. Real shape, very close to original.**

*Accurate patternmaking and knowledge of original design keeps details of the original body. Any changes are intentional, no claims of "exactly like Henry's" when there are substantial differences.*

**6. Cost effective.**

*Details that cost a lot to engineer in the field are included in most bodies. Door handle mounts, deck handle mounts, windshield mounts, steering column mount points, seat belt hard mounts. Window glass channel mounts on convertibles and coupes. Details, Details Details...*

#### Available replica bodies

- |           |   |                     |
|-----------|---|---------------------|
| • 1926-27 | <b>Roadster</b>   | <b>B-6 to B-7</b>   |
| • 1928-29 | <b>Roadster<br/>Phaeton<br/>Roadster Pickup Cab</b>                               | <b>B-8 to B-10</b>  |
| • 1930-31 | <b>Roadster<br/>Phaeton<br/>Roadster Pickup Cab</b>                               | <b>B-11 to B-13</b> |
| • 1930-31 | <b>5-Window Coupe</b>   | <b>B-14 to B-15</b> |
| • 1932    | <b>Roadster<br/>Phaeton</b>   | <b>B-16 to B-19</b> |
| • 1932    | <b>3-Window Coupe</b>   | <b>B-20 to B-23</b> |
| • 1933-34 | <b>Roadster</b>   | <b>B-24 to B-25</b> |
| • 1939-40 | <b>Convertible<br/>1939 Rumble<br/>1939 or 1940 Trunk<br/>1939 or 1940 Custom</b> | <b>B-26 to B-29</b> |

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