

[Table Of Contents](#)

Acknowledgments

About the Authors

Introduction

Chapter 1: Fiberglass Overview

What is Fiberglass?

What is a Composite?

Choosing Your First Fiberglass Project

Restoring Classic Fiberglass Cars

Dune Buggies and Custom Fiberglass Cars

Replicas and Kit Cars

A Word about Boats and Planes

How Does Fiberglass Work?

Fiberglass Safety

Chapter 2: Safety Gear, Relevant Tools and Workshop

Safety Gear

Fire Safety

First-Aid Kit

Personal Safety

Fiberglassing Supplies

Tools

Hand Tools

Electric Power Tools

Using Air Tools

Creating a Good Fiberglassing Workshop

Chapter 3: Fiberglass Cloth, Mats, Resins and Composite Materials

Types of Fiberglass

Fiberglass Resins and Catalysts

Polyester Resins

Epoxy Resins

Casting Resins

Project: Basic Fiberglass Layup

Fiberglass Fillers, Pigments and Gel Coat

Composite Materials

Using Pre-Preg Carbon Fiber

Chapter 4: Basic and Advanced Repairs

Reinforcing Your Repairs

Cold Layup Composites

Fiberglass and Composite Repair Projects

Project: Making Simple Repairs to Gel Coat

Project: Making Simple Crack Repairs to Fiberglass

Project: Repair a Crack in a Corvette's Bodywork

Advanced Project: Fixing Holes in Fiberglass

Advanced Project: Making Fiberglass Seam Repairs

Making Repairs with HyperFiber

Project: Reinforce and Repair with HyperFiber

Chapter 5: Pattern and Mold Making

Patterns

Bucks

Molds

Captive Forms

Creating Fiberglass Molds

Project: Create a Buck/Mold and Make Several Cobra Cockpit Wedges

Project: Fabricate a Ford Model T Roadster Dashboard

Chapter 6: Professional Composite Operations

Beginning with an Idea

Creating the Buck

Making the Mold

Creating the Final Part

Patterning the Carbon Fiber

Matching the Carbon Fiber Weave

Adding the Supporting Core

Finishing the Layup

Baking the Carbon Fiber

Carbon Fiber Structural Parts & High-Stress Applications

The Fabrication Process

Testing the Parts

Safety and Stress

Chapter 7: Plastics and Composite Vehicle Repair

Vintage Plastic Cars

Modern Plastic Cars

Identifying Plastic Body Parts

Repairing Plastic Parts with Fiberglass

Project: Repair a Plastic Spoiler using Fiberglass

Repairing Plastic Parts with Welding

Types of Plastic Welding Rods

Practice: Basic Plastic Welding Technique

Plastic Tack Welding

Practice: One-Sided Plastic Welds

Practice: Two-Sided Welds

Plastic Welder Maintenance

Repairing Plastic Mounting Tabs

Repairing Plastic Parts with Glue

Project: Repair an Automotive Bumper

Working with Sheet Plastic

Project: Make a Set of Rally Mud Flaps out of HDPE

Plastic Aerodynamic Devices

Chapter 8: Prepping and Painting Fiberglass and Composite Materials

Equipment

Airbrush

Prep Work

Gel Coat

Paint

Painting Carbon Fiber

Glossary

Source Guide