Preface

The rise of the automobile industry and the socioeconomic impact of the road and the car are central to the history of the advanced capitalist countries in the twentieth century, and explain an especially large part of the history of the American people. A definitive exposition, analysis, and synthesis of this most important phenomenon to mankind has yet to be written, and many aspects of the topic are still generally misunderstood or shrouded in myth.

In this book I have drawn upon the automotive history scholarship of the past decade and have utilized the research strategies of comparative history and the new social history to revise significantly my earlier revisionist synthesis, *The Car Culture*, published by The MIT Press in 1975. Here the perspective is very different. Even in passages abstracted from my earlier books a number of factual errors have been corrected, new information has been added, and the evidence often has been reinterpreted substantially. I am far less polemical here, and I rely much more on statistical data, much less on the assessments of participant-observers in the interpretation of historical events and processes. Most important, this is a comparative history, not in the sense that equal attention has been given to the history of the automobile in the rest of the world, but in the more limited senses of providing perspectives on the American automobile culture and of explaining developments elsewhere that have affected it. Like *The Car Culture*, this book focuses on the United States. It could not be otherwise, for to understand the worldwide automobile revolution one must put center stage the world's foremost automobile culture.

Throughout the text I explore and interrelate six general themes. One is the technological evolution of the motor vehicle, particularly the passenger car. Another is the development of mass-production techniques,

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their progressive refinement, and their impact upon automobile workers and labor-management relations. A third is the dynamics of the development, business organization, and marketing strategies of the automobile industry. A fourth is the diffusion of the road and the car and the development of a mass market for automobiles. A fifth is the roles of economic and social conditions and public-policy decisions in the creation of our contemporary automobile culture, and in the concurrent decline of mass transit. Finally, there is the transformation of American lifeways and institutions by mass personal automobility.

Because I believe that history is the product of human choice, made by the decisions of men rather than the inevitable result of impersonal forces, cultural or otherwise, due attention is given to the contributions of individuals to the shaping of our automobile culture, particularly to automotive entrepreneurs and engineers. In doing this I have operated on the commonsense assumptions, for example, that the mass production of the Model T was a manifestation of Henry Ford's philosophy of industry and that to understand the annual model change and planned obsolescence of product, one must know Alfred P. Sloan, Jr.'s, conception of the mature corporation. So, unlike most of the new social history, this work deals with motives and personalities as well as with behavior and aggregate statistics.

Similarly, and as in *The Car Culture*, the text is discursive within the literature of automotive history, because I think that it is important for the general reader to be made aware of the contributions of my fellow automotive historians to my arguments. Scholarship is a cumulative process, and a comprehensive synthesis such as this necessarily is based in the main on the primary research on specialized topics of many other people. I have tried to credit in the text by name those who have most influenced my arguments, to point out their specific contributions to my understanding, and to quote them directly when what they said seems either especially significant or striking.

I have tried to keep the notes sparse and simple. My arguments and the evidence essential to support them are entirely presented in the text. The notes are used only to reference direct quotes and to point out significant sources, not to extend arguments or provide supplementary evidence. They are at the back of the book where they can safely be ignored unless the reader wishes to pursue a topic further. Because the reader interested in doing so can most conveniently work through the index, the citations in the text, and the notes, I have omitted a bibliography. Statistical data, unless otherwise referenced, are taken either from the various annual editions of the Motor Vehicle Manufacturers Association (MVMA)'s *Facts*

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and Figures and *World Motor Vehicle Data*, or from the *Statistical Abstract of the United States*.

A major problem in writing contemporary history with themes that continue to develop into the future is determination of the point in time at which to conclude the narrative. Obviously, one must stop short of tracing events up to yesterday's newspaper. In general, the text treats events through 1985, when the draft manuscript was submitted for publication. The most recent relevant statistical data then available were most often for 1982 or 1983, and in some cases for as early as 1977. I have updated the statistics where it has been possible and seemed essential. Otherwise, they remain as of 1985. I am unaware of any instance where more recent figures, or for that matter any new qualitative information, would alter my generalizations or add anything important to my conclusions.

This book is the culmination of twenty-eight years of research and writing on automotive history. Many people have contributed to it in one way or another.

Gerald T. White first awakened my interest in social and economic history in his undergraduate courses in history at San Francisco State. Thomas C. Cochran strengthened that interest in his seminars at the University of Pennsylvania and first suggested to me that the automobile revolution was an unexplored topic worthy of at least one doctoral dissertation. John B. Rae paved the way for further work in automotive history with his pioneering books and articles and was instrumental in getting my first book, *America Adopts the Automobile, 1895–1910*, published by The MIT Press in 1970. I am grateful for the continuing support for my work and the friendship over the years of Professors Cochran, Rae, and White.

I have also on occasion learned from my graduate students, particularly about the Japanese automobile industry from Alexander D. McLeod and about the triumph of the automobile over rail transit from Gregory Lee Thompson.

The present book grew out of a paper that I presented at the October 1, 1982, conference "The Automobile and American Culture," sponsored by the Detroit Historical Society. David L. Lewis organized the conference and invited me to participate. Another stimulus was the discovery, while doing research for the paper, of James M. Laux's definitive account of the early French automobile industry, *In First Gear* (1976), and the suggestive history of the worldwide automobile industry, *The Automobile Revolution* (first published in French in 1977, then brought out in English by the University of North Carolina Press in 1982), that Laux coauthored with Jean-Pierre Bardou, Jean-Jacques Chanaron, and Patrick Fridenson.

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I have drawn on both books for data on the European automobile industry to an extent not possible to acknowledge adequately in the notes. My interpretation of these data, however, is more often than not very different.

My research has been supported at critical points by funding from three sources within the University of California, Irvine: the departmental instruction and research budget of the Program in Comparative Culture, Academic Senate research and travel funds administered by the research committee of the School of Social Sciences, and intramural grants from the Institute of Transportation Studies. Individuals who deserve special thanks are Dickran L. Tashjian, Ross M. Quillian, Wilfred W. Recker, and Gordon J. "Pete" Fielding.

Librarians are the silent partners in research, and their critical role too often goes unacknowledged by scholars. Much of the present book is based on research that I did as long ago as the 1960s at the McKean Automobile Reference Collection of the Free Library of Philadelphia, and I remain indebted to Mary M. Cattie and Dolores B. Axam for many favors. Along with most other automotive historians, I also am indebted to the late James J. Bradley of the National Automobile Collection of the Detroit Public Library. My research was aided immensely by the expertise of Margaret A. Renton, Government Publications, John E. Smith Memorial Library, and of Lyn Long, Institute of Transportation Studies, both at the University of California, Irvine.

For the illustrations, I am indebted to American Motors; John Baeder; the California Department of Transportation; the Chrysler Historical Collection, particularly Karla Rosenbush; the Ford Motor Company, particularly Susan Page; the Free Library of Philadelphia, particularly Lou Helversen; General Motors, particularly Thomas F. Macan; the Henry Ford Museum and Greenfield Village, particularly Randy Mason and Cynthia Read-Miller; Holiday Inns, Incorporated; the Huntington Library; the Library of Congress; Mercedes-Benz of North America, particularly A. B. Shuman; the National Archives; the Smithsonian Institution, particularly Donald H. Berkebile and Roger B. White; and Volkswagen of America, Incorporated.

The manuscript was read and commented on by my fellow automotive historian George S. May, by my colleague Raul A. Fernandez, and by my neighbor Joseph L. Vuckovich. Their corrections and criticisms were invaluable. Joseph G. Jorgensen has patiently endured having his ear bent and provided encouragement and moral support on numerous occasions.

Edna L. Mejia not only typed several drafts of the manuscript but helped secure research materials and illustrations. Her dedication and effi-

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ciency in the preparation of the manuscript have been typical of her exemplary secretarial service to me over the past seventeen years.

Despite the help of all these good people, faults undoubtedly will be found in the text for which I must assume full responsibility. That is simply the nature of all scholarly endeavor. I know that Iona Rogers Flink, the love of my life for the past thirty-five years, to whom this book is dedicated, will understand that I have tried my best to make it perfect for her and forgive my inadvertent failings.

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The Automobile Age

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The Automotive Idea

1

The idea of the self-propelled road vehicle dates from at least as early as the speculations made by Roger Bacon and Leonardo da Vinci in the thirteenth and fifteenth centuries. Its development during the nineteenth century was multinational. Sociocultural differences reflected by national political boundaries were far less significant than the evolution of a modern urban-industrial social order in Western Europe and the United States. This involved a widely disseminated, shared state of scientific and technical knowledge. It was thus inevitable that a number of people on both sides of the Atlantic should perceive the possibility and social utility of the automotive idea—the combination of a light, sprung, wheeled vehicle; a compact, efficient power unit; and hard-surfaced roads.

The earliest experiments with cumbersome steam-powered vehicles did not get very far. We know next to nothing about two steam-powered, self-propelled vehicles reported to have been constructed in China about 1665 by the French Jesuit missionaries Ferdinand Verbeist and Philippe-Marie Grimaldi. A century later, between 1765 and 1770, Nicholas Joseph Cugnot, a Swiss engineer, was subsidized by the French government to experiment with steam tractors for pulling cannon. Cugnot's 1769 vehicle was less efficient than horses, and further development was halted when a change in government policy cut off his funds. Richard Trevithick, a Cornish engineer who pioneered the development of the high-pressure steam engine in England, built steam carriages in 1801 and 1803. Although his vehicle ran reliably at speeds up to 12 mph, Trevithick was unable to obtain financial backing to develop it further. Oliver Evans, an American inventor, obtained a patent from the Maryland legislature in 1787 giving him exclusive rights to operate steam-powered vehicles on the public roads. In 1805 a steam-powered dredge that he built for the city

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