

Designing Motion

Markus Caspers

Designing Motion

Automotive Designers 1890–1990

Birkhäuser
Basel

Concept and layout: Markus Caspers
Typesetting: LVD GmbH, Berlin
Project management: Silke Martini
Translation: Hartwin Busch
Copy editing: Julia Dawson
Production: Heike Stempel
Cover design: Res Eichenberger Design, Zurich

Paper: 135 g/m² Magno volume
Printing: BELTZ Bad Langensalza GmbH

Library of Congress Cataloging-in-Publication data
A CIP catalog record for this book has been applied for at the Library of Congress.

Bibliographic information published by the German National Library
The German National Library lists this publication in the Deutsche Nationalbibliografie;
detailed bibliographic data are available on the Internet at <http://dnb.dnb.de>.

This work is subject to copyright. All rights are reserved, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, re-use of illustrations, recitation, broadcasting, reproduction on microfilms or in other ways, and storage in databases. For any kind of use, permission of the copyright owner must be obtained.

This publication is also available as an e-book (ISBN PDF 978-3-0356-0784-0; ISBN EPUB 978-3-0356-0773-4) and in a German language edition (ISBN 978-3-0356-0981-3).

© 2016 Birkhäuser Verlag GmbH, Basel
P.O. Box 44, 4009 Basel, Switzerland
Part of Walter de Gruyter GmbH, Berlin/Boston

Printed on acid-free paper produced from chlorine-free pulp. TCF ∞

Printed in Germany

ISBN 978-3-0356-0982-0

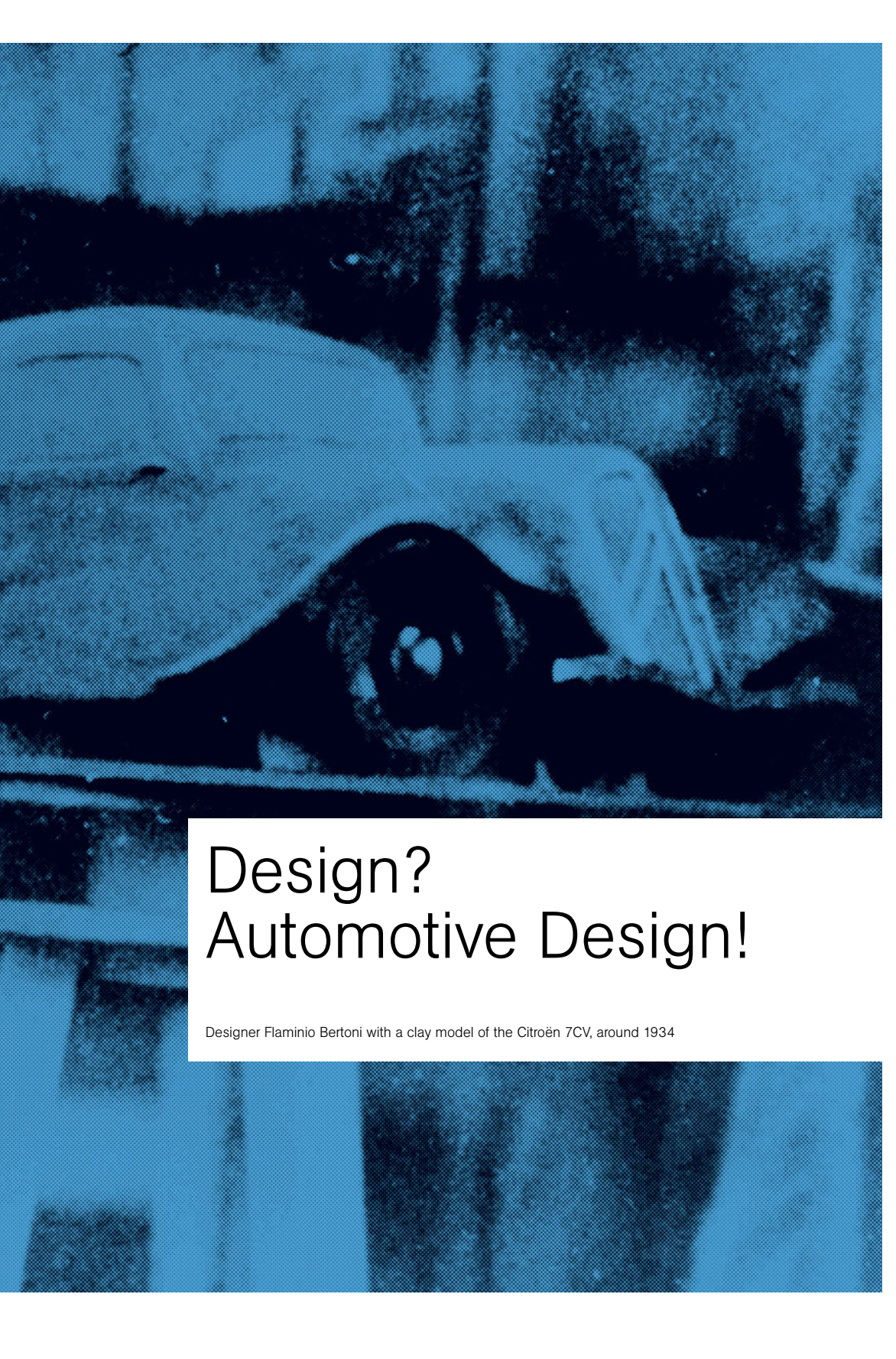
9 8 7 6 5 4 3 2 1

www.birkhauser.com

Contents

Design? Automotive Design!	6
Designing Motor Vehicles	14
Processes and Training	38
Phenography of the Automotive Form	48
Automotive Designers A–Z	62
Editorial Note	190
Overview Map	192
Index of Designers	194
Index of Models	196
References	198
Internet Sources	199
List of Illustrations	199





Design? Automotive Design!

Designer Flaminio Bertoni with a clay model of the Citroën 7CV, around 1934

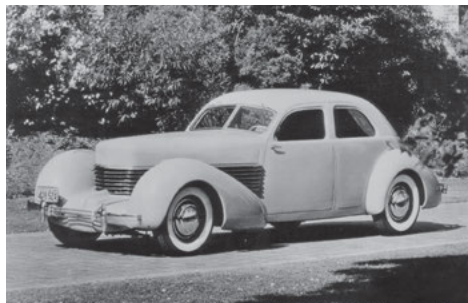
Design? Automotive Design!

Irrespective of which everyday item you can think of, there is always a “design” version. Obviously, every hairdryer has been designed by somebody, a team of professionals has thought about the shape and function of the exterior shell—but in addition, there are the special, usually high-quality and expensive “design” products. While there is a canon of designed objects, some of which have been raised to a status that warrants their inclusion in a museum, it is noteworthy that the word “Design” as used in a German-speaking context primarily refers to furniture, fittings, work tools, household goods, fashion, and much more—but, in most cases, one object is not covered: the automobile. And that, in spite of the fact that this “key technical object of the modern times” as it was called by the philosopher Peter Sloterdijk at the beginning of the 1990s, can be found in front of every house, occupies the streets of towns and cities, is the blessing and curse of the industrial world, still holds the promise of individualization and mobility, and has given people in the twentieth century unimagined freedom of choice.

Automotive design developed alongside industrial design, something that is not really surprising considering it is a specialized form of this discipline. In spite of the fact that industrial styling was able to apply itself to the automobile as a mass product much earlier than to many other objects, styling of the automotive mode of transport has not gone beyond the perception of a niche existence. The creators of prototypes or small series of furniture enjoy artist or cult status; they rise to fame, with their names becoming brand names. By comparison, the creators of automobiles produced in their millions remain largely unknown. While it is now expected that people are able to identify “Bauhaus” objects, or “Eames” furniture, nobody talks about a “Buehrig” or an “Opron” that they drive or would like to drive. In common perception, automobiles are differentiated by brands, not by designers.

This is also reflected in literature. Works on the subject of automotive design are a rarity worldwide. While in recent decades, in the European—particularly the German-speaking—cultural sphere, a lively

A “Buehrig”: Cord 810, 1935.
Chief Designer: Gordon Buehrig



discussion on design theory and history has erupted, the design of automobiles has largely remained a marginal issue in the more important contributions. In the phase of design theory between 1950 and 1980 which was characterized by ideological and social critique, automotive design was referred to as “Styling” in German, thereby implying a somewhat lower form of product design which was solely focused on improving the product’s exchange value. The Briton Reyner Banham was the first—and for a long time the only—European design theorist who included the automobile in his discourse and the canon. From 1955, he wrote in his essays, such as “Machine Aesthetic” and “Design by Choice,” about the product aesthetic, new at the time, and included the automobile as a matter of course.

An exception to the above situation can be found in the USA. Here, the history of automotive design is inseparably linked with the idea of self-realization via automobility. Starting from the 1930s, individual ideas and those of society as a whole made their way into the pattern language of the industrial production of consumer articles. Terms such as “streamline,” “rocket age,” and “hot rodding” served as a blueprint for design that, not least, reflected social status. The styling departments of American automobile manufacturers had enormous influence and advanced to the status of creators of collective projections. Consequently, the attention of industrial designers was never just focused on the professional public, but also reached the front pages of popular magazines and the reporting on socially relevant aesthetics. As early as the end of the 1970s, both professional insiders and scientists began work on the history of automotive design. The University of Michigan project is a case in point in which, under the leadership of David Gartman, researchers carried out interviews with the designers of the “big three,” General Motors (GM), Ford, and Chrysler, and thereby—from the late 1980s—recorded the history of a profession.

Following the classic automobile boom of the last twenty years, the interest in automotive design has also grown—be it as a characteristic



An “Opron”: the Citroën SM from 1970.
Chief Designer: Robert Opron

of distinction between variants of valuable, small-series models, or as an attempt at a stylistic classification of types, product cycles, and the zeitgeist. In parallel, one can observe a strong trend towards retro and nostalgia, which is focused on the design of mid-century modernism, but combined with objects and furniture items of the 1960s and 1970s. In this lifestyle context, automotive design is also receiving more attention, because the “bread and butter cars” of the respective era are integrated; interest in design (even if only as a criterion for social distinction) does not exclude automotive design.

For decades, design has been a vital factor in production and marketing processes, and has been accepted in society’s perception as an aesthetic variable of social differentiation. In the cultural and intellectual debate, the design of industrial products is frequently even elevated to the status of art and is used as an analysis of social sensitivities. But beyond numerous publications on automobile brands and manufacturers, there is hardly any work that focuses on the core of automotive design—its origins, its theoretical development in contrast and in parallel to industrial design, and its social history. With its focus on the people who, for over a hundred years, have dedicated their professional efforts to the design of land-based vehicles, the automobile designers, this book sets out to make a contribution that closes the gap in the publications on automotive design.

The book traces the history of an industry, from the beginning of automotive design around 1890 to the point in time, in the 1990s, when a new brand strategy brought about a paradigm shift. Because from that time onwards, designers were asked, even more than before, to focus on the creation of a brand image, a fleet design, a brand identity; this did not lower the quality of the design process or make it less exciting, but it did reduce the opportunities for individual influence in favor of a collective design process. While the main design line is established by a head of design or a Design Director, the departments deal primarily with the adaptation of the main design line to all products in order to make the

The AMC design department around 1960—Chief Designer Dick Macadam examining a clay model of the AMC Rambler



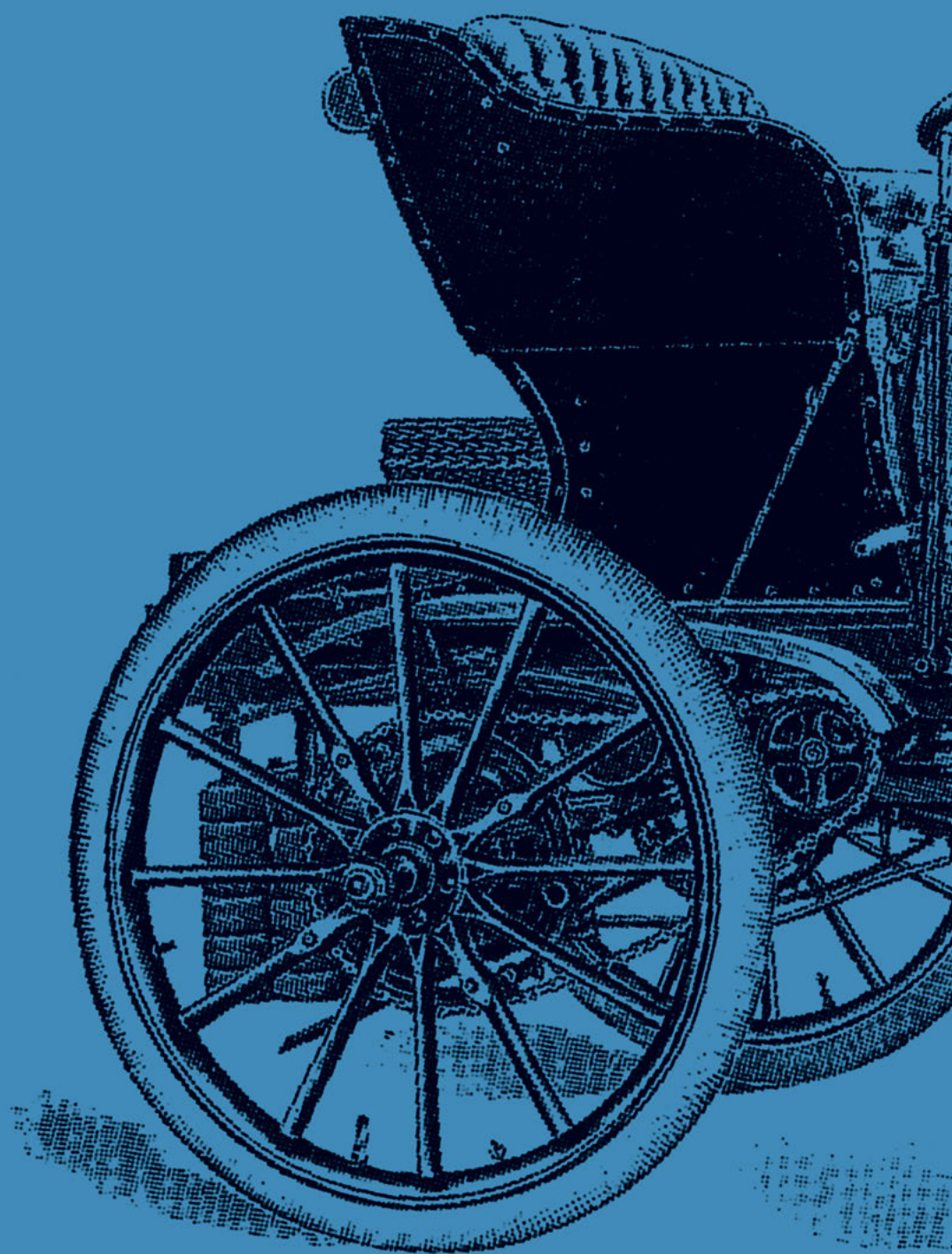
range of models immediately identifiable as brand products. This probably marks the biggest difference to the previous era between 1960 and 1990. In that period, the designs of many manufacturers, above all the Italian design studios, were virtually random and exchangeable; one could refer to this as the *carrozzeria* principle, whereby a basic design was sold to a number of manufacturers. Beyond the front grille, with the brand emblem, brand identity as it is known today was rather the exception. The resulting exchangeability and multiplicity in the appearance of automobiles of the same period inspires our fantasy and manifests in memories to this day. Design can be seen as an aesthetic manifestation of ideas generated by a society and relating to its habits and rituals during a certain period; in short: aesthetics as the expression of social imprint. Social variables change, and with them the design. Those who find the forms created in decades gone by “more beautiful” than contemporary design, attach the feeling of a period experienced or dreamt of by them as beautiful to those forms which represent or evoke that period.

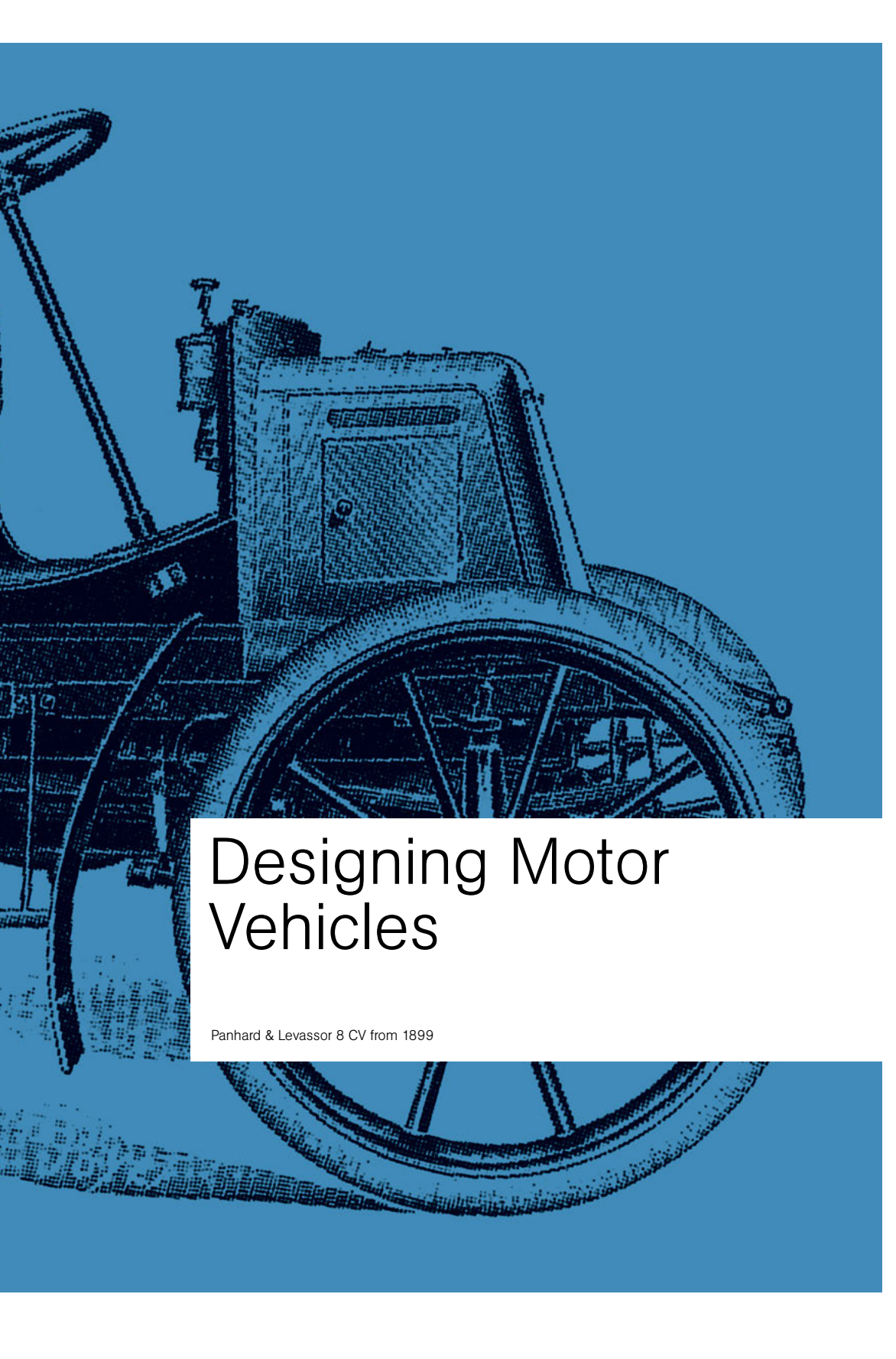
The ideas we associate with mobility have been reflected in the forms of automobiles since about 1920. The big dream of linking topographic with social mobility has become an everyday occurrence, although in some places it has not yet become reality. Design as “cultural technology” will not show us how we will drive in the future—as a society, we have to develop ideas for a future which will then take shape in ways that reflect our society. The last era able to do this was the 1970s; consequently, design during those years was correspondingly risqué and naive. Today, it is with a sense of nostalgia that we look back on that period, which radiates important stimuli for the design of automobiles, furnishings, clothes, and buildings. While today retro design takes its cue from old forms which, a long time ago, were associated with the future, designers from earlier decades tried to express in a consistent form what was perceived as contemporary and what was anticipated for the future. The history of automotive design is the story of the tenacious

battle with the old forms of mobility, such as the coach, of the battle with the focus on large forms that have nothing to do with land-based mobility (shipping, aviation, aerospace), and of the attempt to give the automobile its own form which, by and large, still persists today.

Driving in 1980—a vision of 1961: the two-wheeled Ford Gyron, designed by Alex Tremulis and Syd Mead







Designing Motor Vehicles

Panhard & Levassor 8 CV from 1899

Designing Motor Vehicles

A Sociohistorical Account

In day-to-day discourse, the word “design” is used in the context of everyday objects. In a more specific sense, the term is employed together with the attribute “industrial,” which refers, in the industrial design process, to the professional design of products and objects for the purpose of serial production. Here, the term “Design” as used in a German-speaking context refers to shaping the exterior appearance of objects, which may be produced in infinite numbers.

In the European, non-English-speaking arena, “design” has some special connotations. Often, the word is used as an attribute to characterize the exterior form of goods or products as of particularly high value, and aesthetically important. Until a few years ago, the theory of science held that the term “design” involved a special characteristic relating to the exterior form or shape of an object, which was determined by an equally special historical understanding and ideological implications. Design often referred to items that were not produced in serial production and did not have an everyday purpose, but were prototypes or mini-series of high-quality, and hence expensive, products designed by designer artists.

So-called “heroic” European design—during the heyday of the Weimar Bauhaus and the Ulm School of Design (HfG: Hochschule für Gestaltung), roughly between 1920 and 1970—was often far removed from mass production. This was because many of the designed objects, although apparently focused purely on functionality, usefulness, usability, and logical application, were so complex and hence expensive in production that they only became available to a small, affluent section of the public. This applies equally to the first steel tube furniture emerging from the Bauhaus and the sound equipment produced by Braun, part of the design of which was developed at the HfG. Furthermore, it was more common in Europe for designers to be designer artists working on their own, and only in exceptional cases (such as Peter Behrens at AEG) did they work with colleagues in a larger design department.

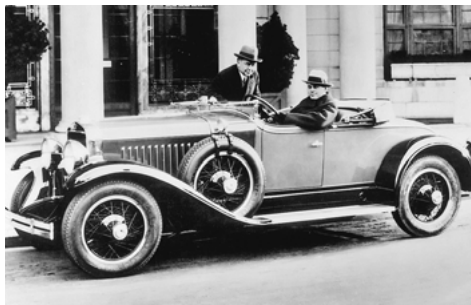
Mercedes Landaulet from 1913—Passenger compartment, driver compartment, and bonnet are separate units.



The economic situation in Europe prior to 1950 favored design efforts that were primarily focused on basic needs, that is, useful items absolutely necessary to daily life; the keyword—sometimes used as a battle cry—of “Existenzminimum” (the bare minimum) was used in the context of the home and mobility. While Europe between the wars concentrated primarily on the creation of acceptable living conditions for the majority, the USA had a much broader layer of blue- and white-collar workers who were able to afford things which in Europe were the preserve of the wealthy, such as electrical appliances, comfortable sanitary installations, and cars. While by and large European design focused on necessities, American design—also referred to as styling—dealt with what was technically and aesthetically possible.

Industrial Design, Automotive Design—the Birth of an Industry

When industrial design began to be established in the United States as a new industry, it adopted the organizational patterns that already existed in offices and departments, creating smaller agencies and studios through to the large style departments of the brand manufacturers. Harley Earl and Raymond Loewy, originators of this new field of design almost at the same time, exemplified the type of organizational structures; Earl moved from his native Hollywood to Detroit in 1927 in order to design a new body for the Cadillac marque, LaSalle (part of General Motors). Shortly afterwards, Earl decided to work for GM on a permanent basis, and the corporation initiated the creation of the first automotive design department worldwide—the Art & Colour Section. Right from the start, this was firmly integrated in GM's processes. Some years later, the Art & Colour Section developed into a network of various studios for the different GM marques and was renamed the Styling Section which, from 1937, with hundreds of employees, was the largest design department worldwide, and has remained so. In 1940, Earl was promoted to



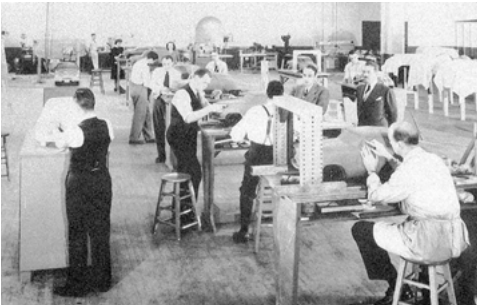
Harley Earl at the wheel of the 1927 LaSalle designed by him

Vice President in order to emphasize to company-internal critics the importance of design for success in the market, and to enable him to assert design decisions as decisions of the corporation.

Raymond Loewy founded the Raymond Loewy Associates (RLA) studio in New York in 1930; it expanded quickly and opened branches in the North American industrial centers, at the locations of his clients. In South Bend (Indiana), the seat of the Studebaker automobile manufacturer, Loewy worked exclusively on automotive design. His organizational model, with studio directors, chief designers and the network of agencies established worldwide after 1945 for the benefit of global brands, can still be found today in consultancy and design companies. Loewy was also one of the founder members of the first American professional association of industrial designers (IDSA), which from 1944 (with precursors from 1934) introduced design in the planning and marketing process.

In most cases, design is a team effort; this is especially true of automotive design. There have always been individual designers who, as consultants or independent designers, designed cars on their own, but the serial models made by the big manufacturers have almost all been designed by teams. This makes it confusing and unclear as to who are the originators of certain designs. Sometimes, designs are credited to the heads of departments (Design Director, Head of Styling/Design), sometimes to the chief designer of the studio, and sometimes to individual designers; presumably, all the honor goes to them. In the European cultural arena in particular, the concept of originality and the “artist as a genius” was so dominant that it penetrated through to the areas of what is referred to as applied art. Designers were viewed as creative geniuses whose ideas came from nowhere. The idea of this solitary creative genius, which is an excellent marketing ploy and contributes to the creation of a myth, would only be diluted if the design was assigned to a rather nondescript team environment. But irrespective of the aforementioned, Giovanni Michelotti, the most productive Italian auto-

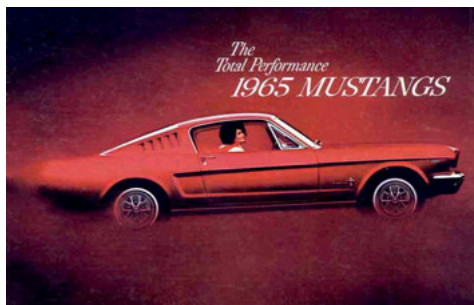
Raymond Loewy's studio in South Bend, Indiana, around 1942: designers and model makers at work on new Studebaker models in a former factory building



mobile designer next to Giorgetto Giugiaro, could never have produced his oeuvre, estimated at 1,200 designs, on his own—he too maintained a team of employees, which at times included Pietro Frua, the young Giugiaro, and Paolo Martin.

GM introduced the strategy of competing internal designs; in this process, various teams work on the same project and compete to be chosen for the implementation of their design. It is even possible that the design of a team favored in the first round is completely revised in a second and third round by another team. In this way, the creation of just one single model might easily involve twenty designers. For example, the development of the Chevrolet Corvette started at GM in 1951 as a secret project (“Project Opel”) and was then carried on to full production readiness by a number of different teams—since then, at least two-dozen designers have claimed to have been involved in the creation of the first American sports car.

Ford worked with in-house designers and also, from the late 1930s, with external consultants. It was not until the late 1950s that the Ford design department had the appropriate personnel to enable the company to do without ideas from outside agencies. The shape of the famous first Ford Mustang of 1965 was the result of a competition between all three Ford design departments (Advanced Design, Lincoln-Mercury, and Ford). In the wake of the market success of this model and the fact that today it enjoys cult status, the list of its creators is long, ranging from the then Vice President of Styling, Eugene Bordinat, via the studio director, L. David Ash, through to the designers Gale Halderman, Joe Oros, and John Najjar. For this reason, some of the models will be listed in several places in the register of people in this book—under the chief designer, who has initiated it and given his final approval; the head of the respective design studio, who is responsible for the work of his team or teams; and finally the individual designers, whose contribution to the respective design work is sufficient to allow the design to be called “their” work.



The design of the Ford Mustang 1 from 1965 emanated from an intercompany competition

Self-Image—Craftsman or Visionary?

The discipline of automotive design has its roots partly in shipbuilding and coachbuilding/the wheelwright trade, and partly in graphic design, illustration, and commercial art. Coachbuilding and the wheelwright trade have been respected and flourishing trades in Europe since the seventeenth century. With the beginning of industrialization around 1800, some enterprises in the administrative and industrial centers of Europe and North America specialized in the manufacture of prestigious coaches for general transport and for wealthy customers. The centers of coachbuilding were London, Brussels, Turin, Paris, New York, and Philadelphia. From 1900, some of these enterprises recognized the potential of a new mode of transport, the automobile, and began with the design and manufacture of bodies; examples include Brewster, Farina, Erdmann & Rossi, Kellner, Franay, Gurney Nutting, and Mulliner. At the beginning, most units were one-off models tailored to the needs and ideas of customers. Specialized schools existed for coachbuilders, such as the École DuPont in Paris, at which the method of applying ‘strakes’ (continuous courses of planks or plates on a ship forming, for example, a hull shell or a deck) was taught. From the technical point of view, the problem of freeform surfaces was well known in shipbuilding, and the method of dealing with it was adopted in coachbuilding from the late nineteenth century. The method made it possible to capture irregularly curved surfaces in a drawing using marking points, threads, and curve templates, and to use this drawing at a later date again or transfer it to another object (for example, from a model to a workpiece).

From 1920, aircraft construction also needed methods to shape and represent in drawn form the fuselage and wings of aircraft in a manner both suitable for the function of the aircraft, and aerodynamically appropriate. Models in wood or clay, and from 1950 in plasticine, offered the opportunity to scan the surfaces and translate the data into technical drawings using a coordinate measuring device, which in turn made

Coachbuilding functioning as a role model for early automobile design engineers: Peugeot Vis-à-Vis, 1892

