



Bicycle Design: An Illustrated History (MIT Press)

By Tony Hadland, Hans-Erhard Lessing

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The bicycle ranks as one of the most enduring, most widely used vehicles in the world, with more than a billion produced during almost two hundred years of cycling history. This book offers an authoritative and comprehensive account of the bicycle's technical and historical evolution, from the earliest velocipedes (invented to fill the need for horseless transport during a shortage of oats) to modern racing bikes, mountain bikes, and recumbents. It traces the bicycle's development in terms of materials, ergonomics, and vehicle physics, as carried out by inventors, entrepreneurs, and manufacturers.

Written by two leading bicycle historians and generously illustrated with historic drawings, designs, and photographs, *Bicycle Design* describes the key stages in the evolution of the bicycle, beginning with the counterintuitive idea of balancing on two wheels in line, through the development of tension-spoked wheels, indirect drives (employing levers, pulleys, chains, and chainwheels), and pneumatic tires. The authors examine the further development of the bicycle for such specific purposes as racing, portability, and all-terrain use; and they describe the evolution of bicycle components including seats, transmission, brakes, lights (at first candle-based), and carriers (racks, panniers, saddlebags, child seats, and sidecars). They consider not only commercially successful designs but also commercial failures that pointed the way to future technological developments. And they debunk some myths about bicycles -- for example, the mistaken but often-cited idea that Leonardo sketched a chain-drive bike in his notebooks. Despite the bicycle's long history and mass appeal, its technological history has been neglected. This volume, with its engaging and wide-ranging coverage, fills that gap. It will be the starting point for all future histories of the bicycle.

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Editorial Review

Review

The serendipitous pairing up of two of the world's leading experts on the history of cycling technology has resulted in this definitive book on bicycle design. This is a remarkably complete account of the numerous technical problems encountered over the past two centuries, and of the ways different generations of mechanics and constructors have chosen to solve these problems.

(Glen Norcliffe, Professor Emeritus and Senior Scholar at York University, author of *The Ride to Modernity: The Bicycle in Canada, 1869-1900*)

The authors have given a far fuller and far more authoritative history of bicycles than has been accomplished previously. They have also laid to rest the many myths that have grown up in many so-called histories. The book is more comprehensive and more accurate than the several good histories of bicycles that have been produced in the last forty years.

(David Gordon Wilson, Professor Emeritus of Mechanical Engineering at MIT, author of *Bicycling Science*)

This is a uniquely comprehensive and carefully researched history of bicycle design written from an international perspective and abundantly illustrated. It stretches from the bicycle's pre-industrial origins to present innovations, covering features from brakes to the child seat. The seeming simplicity of the bicycle turns out to be the result of a long and complex history, which continues today. The bicycle -- presented in this book as the high-tech of the 19th century -- is now on the way to becoming the pioneer vehicle of the environmental age. In *Bicycle Design*, the development of this small human-powered machine is becoming big history.

(Joachim Radkau, Professor of Modern History, Bielefeld University)

Working from a simple but clever design, a bicycle is a machine that is altogether light and steady, singular and versatile. It is introduced in a masterly way through this scholarly and exhaustive work. Hold on tight to the handlebars, as *Bicycle Design* provides a ride through the Wheel of Time.

(André Guillerme, Professeur de l'Histoire des Techniques, Conservatoire National des Arts et Métiers)

... a winning tour of bike design.

(*The Wall Street Journal*)

... visually engaging.

(*The Los Angeles Times*)

... definitive book on the subject.

(*London Review of Books*)

Bicycle Design is the authoritative one-volume reference on cycling history and cannot be recommended highly enough.

(Carlton Reid *BikeBiz*)

Destined to become the definitive record of our wonderful wheels.

(Mike Burrows *Cycle*)

About the Author

Tony Hadland is the author of *Raleigh: Past and Presence of an Iconic Brand* and other books. He is based in Oxfordshire, U.K. Hans-Erhard Lessing, formerly Professor of Physics at the University of Ulm and curator at Technoseum Mannheim and ZKM Karlsruhe, has written biographies of Karl Drais and Robert Bosch as well as books on bicycle history books published in Germany.

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Vivian Bennett:

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