

BACKGROUNDS OF POWER

*The Human Story of
Mass Production*

by

ROGER BURLINGAME

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Related Works

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MARCH OF THE IRON MEN
ENGINES OF DEMOCRACY

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A



TO
MY WIFE

PREFACE

THIS BOOK is intended for those who are more interested in people than in machines. There is an alarming increase in the number of contrary-minded folk who may become, without meaning to be, a menace to society. The fascination of mechanical processes and sequences, of the new applications of chemistry and electronics, is so great that these things are becoming ends in themselves rather than means to human happiness in the minds of too many men and women. The intense focus leaves a vast area of darkness round a small circle of light; in the dark area people flounder and are afraid. They fear the unknown: it has progressed so far beyond the likelihood of their instruction that they believe it unknowable like God or demon. In this region of fear men and women are easily exploitable. All over the world they will be exploited simply because the appearance of power is shifting from them who are the world, to devices which were designed for their prosperity.

If such devices are developed for their own sake beyond human needs they will subordinate people to science, and the long effort of man to use natural law for his own good will be scrapped. All through the nineteenth century there was constant talk of man's "conquest" of the physical forces, his "chaining" or "harnessing" of extra-human power. Is it our destiny in the twentieth century to reverse this; to find ways for the forces to conquer man?

I have tried to examine one phase of man's relation to applied science in this history of production by automatic machinery. The late trend I have found is toward anonymity of the individual human being. His adjustment to the machinery which is presumably working for his good has lost him status in society. It has standardized his thinking to group thinking. It has absorbed his talent or his skill; made these superfluous. It has merged his

name in a group name. It has tended to collectivize his incentive. It has divorced him from the quality of what he produces. The product is the machine's, and he is becoming the machine's slave. These efforts are not confined to factory workers but tend to spread out through society through standardized communication.

The appearances are formidable. Yet I have seen no grounds for acceptance of defeat. The conflict is still strong, as I have tried to show in the chapter on "resistances." In late years some of the world's best minds have concentrated on amelioration of dangerous effects, and the attention of many statesmen and teachers has turned to the basic human factor. The study of man has gained ground. The anthropologists, psychologists and other "social scientists" have found ways of impressing even the masters of industrial production. Most hopeful of all, economic considerations are affecting these masters, and the suspicion is growing that a more sensible balance between men and machines may have a money value.

In my work I have been greatly aided by several institutions and persons. I have had substantial help from the Library of Congress and its officers, David C. Mearns and Donald Patterson; the Sterling Memorial Library of Yale has offered me continuous aid and my friend Allan Nevins has made the facilities of Columbia University Library accessible to me. As always, the New York Public Library and the Engineering Societies Library have offered their indispensable services and I have frequently asked the help of Mr. Theodore Bolton, librarian of the Century Club. Special thanks go to the Harris Foundation of the University of Chicago, and to Dr. William F. Ogburn who invited me to the Foundation's conference on "Technology and International Relations" in 1948. I was able there to discuss a series of important papers with scientists, teachers, experts in government and economics, historians and engineers from various parts of the world and the experience was of great value to me.

The automotive scene was presented to me anew by Delmar G. Roos at the Willys-Overland plant in Toledo, and there, too, I saw aspects of mass production in the electrical equipment industry at the Auto-Lite Company's plants. Glen W. Cole and

Doctor Eugene Sullivan of the Corning Glass Works, to whom I have been so indebted in the past, gave me continuing help and Messrs. Robert Clause and Robert Miller made it possible for me to see the beautiful continuous process of the Pittsburgh Plate Glass Company. Through Doctor W. A. Hamor I saw again the Mellon Institute and was introduced to the mysteries of silicones there by Doctor R. R. McGregor.

During the Second World War, I had the opportunity of seeing many air and ground operations as correspondent with the American Army Air Forces. I wish to express my gratitude to all of the public relations officers who made this tour so valuable to me, especially Lieutenant Colonel Harold B. Rorke and Major Cecil F. Holland, both A.A.F., who were my constant guides.

I want to thank Doctor Edwin Sharp Burdell of Cooper Union for valuable help in many directions and specifically for introducing my publishers to Doctor Norman Woldman, consultant engineer, who has undertaken a detailed examination of my manuscript from the technicological view. I owe gratitude to my very special friends Thomas Robins, the distinguished inventor and engineer who has devoted so much of his thought to that vital factor of modern mass production, the belt conveyor, and Karl Vogel, as expert in horology as in his profession of medicine, who introduced me to his fine collection of timepieces and to several important sources in this realm.

My research was ably assisted by Paul Oren, Jr., student of sociology in the Yale Graduate School. I have had help and encouragement from my neighbor Stuart Chase whose research has been long and abundant in the general field of this book, and I have had useful suggestions from Oswald and Victor Knauth.

I can never forget the careful, personal attention of the publishers of this book. My particular thanks go to Charles Scribner, Jr.; his sympathy and understanding have gone far to make up for the loss of Maxwell Perkins, who worked with me for so long. I am grateful also to Joseph G. E. Hopkins, whose editorial help has been vital and, of course, to my old friend Whitney Darrow.

To Ann Watkins, a pioneer author's representative, I owe (as in the instances of my other books) most of all. In quality of criticism she has given me no more than she has given her other authors. Being my wife, however, and my constant companion, I have burdened her excessively. She has responded with inexhaustible patience and with what seems to me astonishing objectivity.

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