

human engineering guide

FOR
equipment designers

second edition

by

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and

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PREFACE TO THE SECOND EDITION

For those readers who are familiar with the original Guide, it should be noted that this new edition has been expanded considerably. It is hoped that this change has been an improvement, since the additions reflect many of the recommendations submitted by former readers and colleagues over the past ten years.

In addition, it has been the good fortune of the authors to have participated over the past decade in a wide range of human factors problems in industry, the essence of which we have attempted to pass on to you, the reader.

The greatest expansion in this new revision has occurred in the first parts of the Guide. The first chapter, on Design Philosophy, is entirely new, having replaced the former Introductory Section. Chapter 2 is a considerably expanded version of the original material; however, an attempt has been made to retain the original direct format, which seems to have been appreciated by most designers.

The chapter on Body Measurement has been revised appreciably and made more practical from the designer's point of view. This change is a reflection of the application experience of the writers in working very closely with aerospace and weapon system designers since the beginning of the Jet Age. Revisions in the remaining parts of the book are less extensive, but reflect many of the changes brought about by more recent research — especially in the area of man-in-space and in industrial applications.

The authors wish to express their personal appreciation to the many persons who have provided comments, criticism, and encouragement over the past ten years with reference to Guide content and format. Special appreciation must be expressed to the University of California Press for encouraging the senior author to undertake this present revision. Finally, we wish to give special thanks to Dr. John Coyne, of the California Western University, for his contribution on Bionics, Cybernetics, and Neuroengineering Concepts, and to Mr. Clark Hackler, of the NASA, Manned Spacecraft Center, for his critical review and assistance in preparing the section on the Human Transfer Function.

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PREFACE TO THE FIRST EDITION

The information in this book was originally compiled at the request of the Sonar Systems Branch of the Electronics Design and Development Division, Bureau of Ships, which has sponsored the work. It was felt that such a compilation would materially aid engineers in designing their equipment from the human-operator standpoint and thus improve the resultant man-machine operation. It is to this end that this book is dedicated.

Grateful appreciation is hereby expressed to the many persons at the U.S. Navy Electronics Laboratory, San Diego; the Medical Research Laboratory, New London; the Aeronautical Medical Equipment Laboratory, Philadelphia; the Aero Medical Equipment Laboratory; Wright-Patterson Air Force Base, and the numerous university and industrial representatives who contributed to the final revision of this book by their constructive comments and criticisms. Special mention is also made of Dr. Paul Fitts, Dr. Douglas Ellson, LCDR Dean Farnsworth, Dr. Arnold Small, and Dr. Max Lund for their personal assistance and critical review of the manuscript.

My sincere thanks also to the NEL publication personnel who so ably prepared in final form for publication the material submitted to them, and to the University of California Press for the care taken in producing this book.

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