COMPUTER DICTIONARY AND HANDBOOK

by

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With a specially written chapter for the guidance of the English reader by W. Oliver (G3XT)

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COMPUTER DICTIONARY

AND HANDBOOK

"Dictionary" and "handbook" are terms that hardly do full justice to the scope of this work. It is so comprehensive that it might be more fairly described as an encyclopaedia on computers and most things connected with them.

To start with, the dictionary section is far more than a mere collection of definitions. A dictionary, no matter how useful it may be for reference when the need arises, is not usually a book that any normal person would willingly sit down to read.

But this dictionary is an exception. Anyone who is at all interested in the fascinating subject of modern computers could easily spend a good many hours dipping into the dictionary section of this book.

So many new technical terms have been coined to cope with the needs of computer technology that the passage of a few years has seen the volume of computer terms grow to the size of a whole new language.

In fact, the advent of the computer seems to have given rise to more new technical terms, phrases, acronyms and abbreviations than that of any other single invention, ancient or modern.

A glance through the formidable array of terms, definitions and explanations given in the dictionary section and the list of acronyms and abbreviations will support this statement.

Any non-technical reader who picks up a fairly advanced technical handbook on electronic computers will get the impression, on delving into its pages, that it is written in a language which looks like English but is strangely unintelligible to the layman.

The value of a technical dictionary which will interpret these quaint pseudo-English words and phrases (such as "dynamic-storage allocation," "Chinese binary," "drop-dead halt," "external interrupt status word," "dump, post-mortem," "housekeeping routine," "crippled leap-frog test," and "loading routine [bootstrap]" to name but a few) is immediately obvious.

The present book meets this need by supplying the reader with such interpretations, written as far as possible in simple language that is easy to grasp.

In this respect the present book is free from the drawback too often associated with technical dictionaries and similar works—namely, defining one technicality in terms of others which, to the novice, may be equally puzzling.

Where it is necessary to use other technical terms in the course of a definition or explanation, the meanings of these other terms are invariably to be found on referring to their appropriate place (alphabetically) elsewhere in the book. This means that the dictionary section is truly a one-step reference source which gives the required information without recourse to other books.

In certain cases, however, one may have to spend a little time in familiarizing oneself with the classification of the material in the book. Whenever the required definition or explanation is not to be found in the first half of the book (i.e., between pages 9 and 347 inclusive), one should try the various appendices.

Take, for example, the term TYPOUT. A glance at p.337 shows that it is not to be found in its expected place among the definitions. But on referring to Appendix T which deals with Acronyms and Abbreviations, one finds it on p.638: "TYPOUT — Typewriter output routine."

The preliminary note on "How To Use This Book" states: "Extensive cross-referencing has been used as an aid in locating terms which you might look for in more than one place."

It is advisable, however, to check any possible variations of a term, even if a definition is found at the first attempt; when a term occurs in more than one location, the explanations or definitions are not necessarily identical, nor equally full, in each of the several references.

The development and production of computers has been so closely associated with the United States that it is only natural to turn to American technical literature for much of the information required on the subject. The present book is of American

origin, so in using it one must of course remember to make due allowances for any differences between British and American technique, terminology and so on.

A rather confusing thing about some of the technical terms used in connection with computers is that they have two or three different meanings and are therefore apt to be rather inexplicit.

One can understand this situation arising in the case of a language which has gradually evolved over the course of centuries; but there seems to be little justification for such ambiguity in a newly-formed vocabulary which has been created in such a short and recent span of time.

Take, for example, the word "Operator" and the various terms or phrases associated with it in computer terminology. A study of the definitions will show what a confusing variety of interpretations can be implied by it. This is only one instance of many computer terms with multiple meanings. But a commendable feature of this book is the fact that it does give the different meanings where there are several.

If one regards this book as being divided into two unequal halves, the smaller half comprises the actual dictionary while the larger half consists of appendices, and these contain a vast amount of interesting, informative and practical information about computers. Much of this data is applicable to British computer technology as well as to American.

Specific references to British aspects of the subject occur in various parts of the book; for example, on pp. 358-9, 410, 464-5, 656-660, etc. A number of British publications on computer work are listed in the relevant section (Appendix U).

Contents

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Preface

Students, teachers, businessmen, scientists, industrialists, and alert individuals in practically all vocations and endeavors are suddenly very amazed to learn of the range and depth of utility of man's newest and most awesome servant, the computer. The eager student, the worried worker, the questing scientist, the efficiency-minded manager—all seek earnestly to know what the computer is. But, even more powerful and relentless is their drive to discover, for themselves, in clear, down-to-earth language what the computer can really do.

Perhaps the greatest impact of computer science and information technology, besides in education, medicine, and engineering, is in the business management field. Several of the appendices of this book relate specifically to the implications of the coming upheaval in command and control "total systems," often referred to as management information systems (MIS) or integrated data processing (IDP). At the present time, management is in the midst of a sweeping organizational, cultural, and methodological change due to the advances of computer science and the systems approach to organization and problem solving. The impact of the new science cuts across many previously unrelated disciplines.

The literature of management, production, inventory control, office equipment and systems, purchasing, and operations research is filled with evidence of expanding technological advances of the computer information cycle. The manager of today can wait no longer. Everywhere about him—in his trade journal reading, in the news of his competitors, in the offerings of new equipment—he is becoming aware of new instant data acquisition and retrieval techniques that use visual, audio, or mechanical devices. These include cathode-ray tube (CRT) output displays, some in color, some in 3 dimension, and many with world-wide communications inquiry and retrievability.

The dollar-saving efficiency of the applications of this equipment (discussed in the appendices of this text) should serve to implant in the minds of middle management and top executives everywhere the firmness of the current in-force "information revolution." There is thus an urgency for taking action now to examine, judge, and evaluate the new systems and procedures, tools, and techniques that alert leaders must use to adjust to the truly comprehensive changes in the crucial areas of "exception reporting" and control. The velocity of change is so great and the areas concerned so encompassing that a simple truth must be acknowledged—that in the computing and information field, tomorrow is already here! Clear, analytical thinking then suggests that a "back to school" movement ("corporate retreading") must involve not only an ever-increasing percent of career-minded men, but such a movement must assuredly include members of the highest levels of management. Many of these men might be forewarned that those who refuse to accept the new

challenges will quickly become victims of "technological senility." They have been, in many cases, already abolished from the inner circles and relegated to inconsequential or at least less demanding (and less rewarding) tasks. The *Wall Street Journal* and other business periodicals have reported numerous cases of new systems procedures and computer people who have won over the derision, protest, and determined objections of the "old guard."

It has been reliably reported that in 1965 American business put half a million executives back in the classroom for retraining, exposure, and "new learning" of computer systems and new, fast-changing administrative and management methods and procedures. Seasoned, professional managers have become quickly enlightened (and some thoroughly alarmed) on new, rather astounding management information systems, computer-controlled sales analyses, decision-making, forecasting, simulation, and other operations research techniques in marketing and systems procedures. They have discovered that in most cases not only does the computer *not* replace the manager, but instead, it greatly increases his responsibilities and offers new potential for true creativity in both the lower and higher echelons of executives in almost every type of enterprise. But, these opportunities and important challenges most definitely require the willingness, knowledge, insight, and perserverance of alert industrial and business leaders to become "enlightened" management; this requires the drive and stamina to re-educate—to come to grips NOW with the rapid advances of technology which have so quickly outmoded the "traditional way."

Hundreds of thousands of people are concerned with the engineering and development of computing instruments, the indoctrination and education of students of many disciplines (engineering, mathematics, business, education, management, etc.) and the use and applications of computers in an almost endless variety of enterprise and research. All of these people and untold numbers to follow must be prepared to cope with a new and distinct language, which has developed in this *Age of the Computer*. This new language takes strange forms because it is part mathematics, part logic, part English, part electronics, and part machine nomenclature; and it is constantly changing and growing. Many teachers, students, and especially computer users have stated with considerable emphasis that one of the most difficult aspects of computer training and understanding is the area of communication.

This dictionary and handbook is designed to aid in identifying, classifying, and interpreting terms and concepts concerned with electronic data processing, information technology, computer science, and the many types of automation. The purpose is to inform and explain—not to standardize. Several governmental and professional groups have the standardization of terms as their task. This text presents the terms and definitions as they are presently being used; however, the author is pleased to cooperate and aid in standardization efforts relating to terms, symbols, languages, and standards. The basic guiding objective has been to make the text useful to all people who have any type of contact with the computer in data processing, information retrieval, scientific research, production automation, or in utilization of computer skills in scores of other computer applications. The finished product is neither an encyclopedia nor a mere word dictionary. The reader will note, using perhaps only a quick glance, that the definitions are not just synonyms or curt expressions.

They are, instead, "full concept explanations" and tested, correlated condensations developed in layman's language. The amateur and the specialist alike, and even the general reader, will find the work to be a time-saving authoritative reference source to aid in understanding concepts which he has forgotten or about which he has not yet been informed.

CHARLES J. SIPPL

How To Use This Book

The dictionary section of this book follows the standards accepted by modern lexicographers. All terms of more than one word are treated as one word. For example, "check digit" appears between "check, diagnostic" and "check, dump." Abbreviations are also treated alphabetically; the letters "I/O" follow "inverter" rather than appearing at the beginning of the I's.

For ease in quickly locating a specific term, the first and last entries on each page appear as catch words at the top of the pages.

Extensive cross-referencing has been used as an aid in locating terms which you might look for in more than one place. For example, "transverse check" may also be located in "check, transverse." If you are not sure whether you want "memory" or "storage," check both.

Contents