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READING AND REFERENCE

Although there are a great many publications dealing with computers, few are of interest to the amateur, for whom the IEEE Transactions on Electronic Computers are too sophisticated, and the occasional computer in Electronics World, too simple.

Let's look at a few magazines that lie between these two extremes, and then at the indexes and abstract journals that consist of items from these magazines. The publishers' addresses that follow are handy for getting tearsheets or reprints of referenced articles.

First, there are some publications that are worth reading to keep up with the news of the world of computers and, to some extent, the state of the art. In order of preference (my own, that is), they are:

- A1. Electronic News
- A2. EDP Weekly
- A3. Computers & Automation
- A4. Data Processing Digest
- A5. Datamation
- A6. Data Processing
- A7. Business Automation
- A8. Automation

For circuits and technical information, these publications are useful, in this order:

- B1. EEE
- B2. Electronic Design
- B3. Electronics
- B4. EDN
- B5. Electro-Technology
- B6. Control Engineering
- B7. The Electronic Engineer
- B8. Computer Design

These British technical publications, all of which are available in the U.S., are of interest to the amateur, in this order:

- C1. Electronic Engineering
- C2. Radio and Electronic Engineer
- C3. Wireless World
- C4. Industrial Electronics
- C5. Plessey Communications Journal
- C6. Control

Most of these three groups of publications are known to many ACS members. However, there are indexes and abstract journals that aren't nearly as well known, but which can be very useful to amateurs, in this order of preference:

- D1. Information Processing Journal
- D2. Electrical and Electronic Abstracts
- D3. Computer Abstracts
- D4. IEEE Computer Group News
- D5. Engineering Index
- D6. ACM Computing Reviews
- D7. Monthly U.S. Government Publications
- D8. U.S. Government Research & Development Reports
- D9. Government-Wide Index to Federal R&D Reports
- D10. STAR-NASA
- D11. Applied Science & Technology Index
- D12. Union Serials
- D13. Technical Translations

For those who aren't familiar with the publications listed in these four groups, here's a listing of publishers, addresses and subscription information. But first, a word about readers' service, which can be a great help.

## READERS' SERVICE

Most technical magazines provide tearsheets (pages taken from issues) or reprints, through a Readers' Service Department. Tearsheets are usually available for two or three years back; reprints are often available for five or more years back.

Tearsheets and reprints are usually free, although there is often a charge when a reprint contains many pages. Some magazines will provide Xerox copies of articles no longer available in tearsheets, for as little as 10¢ a page.

A few magazines that do not have a tearsheet service will send you the entire issue free, if available, or will sell it to you.

## PUBLISHERS AND PRICES

### A1. Electronic News

Fairchild Publications  
7 East 12th Street  
New York, N.Y. 10003

Weekly, \$3 for 1 year, \$5 for two years, \$6 for three.

News tabloid with several pages on computers. Late news, some technical articles on new developments.

### A2. EDP Weekly

Industry Reports, Inc.  
514 Tenth St., N.W.  
Washington, D.C. 20004

Weekly, \$60 a year. \$45 to educational and non-profit institutions, Federal, State, County and City governments.

Contains a good amount of inside information.

### A3. Computers & Automation

Berkeley Enterprises, Inc.  
815 Washington St.  
Newtonville, Mass. 02160

Monthly, \$15 a year.

Good for new-product photos and new-development items.

### A4. Data Processing Digest 1140 S. Robertson Blvd. Los Angeles, Calif.

Monthly, \$24 a year.

Excerpts from articles on data processing.

### A5. Datamation 1830 West Olympic Blvd. Los Angeles, Calif. 90006

Monthly, \$15 a year. Free to certain qualified individuals employed by companies involved with automatic information handling equipment.

Highly regarded, many good articles.

### A6. Data Processing American Data Processing, Inc. 22nd Floor, Book Tower Detroit, Michigan

Monthly, \$8.50 a year.

### A7. Business Automation 288 Park Avenue West Elmhurst, Illinois 60126

Monthly, \$5 a year, \$8 for two.

### A8. Automation Penton Publishing Co. 1213 W. Third St. Cleveland, Ohio 44113

Monthly, \$10 a year. Free to those involved with automatic production equipment and components.

### B1. EEE Mactier Publishing Corp. 820 Second Avenue New York, N.Y. 10017

Monthly, free to engineers en-

gaged in the electronic circuit design engineering function. Others write for prices.

Circuit Design Award Program, with 4 to 6 circuits in each issue, such as "Pulse Generator with Variable Rate and Width" (Feb. 1967). Frequent specifying guides for devices such as unijunction transistors (Feb. 1967).

- B2. Electronic Design  
Hayden Publishing Co., Inc.  
850 Third Avenue  
New York, N.Y. 10022

Every two weeks, free to qualified subscribers.

Good design articles, such as "IC Bidirectional Counters Cost Less" (Jan. 18, 1967). Also good circuits in "Ideas for Design" section.

- B3. Electronics  
McGraw-Hill Publishing Co.  
330 West 42 St  
New York, N.Y. 10036

Every two weeks, \$8 a year to those actively engaged in the field of the publication.

Four to six pages of good circuit ideas in the "Circuit Design" section, some good technical articles and tutorials.

- B4. EDN  
Cahners Publishing Co., Inc.  
3375 S. Bannock St  
Englewood, Colorado 80110

Monthly, \$10 a year, free to electronic/electrical designers and engineers in the electronic original equipment manufacturing market, consulting firms, and government research and development labs.

Good design articles, such as "Bidirectional Counting, A

Snap for ICs" (Feb. 1967).

- B5. Electro-Technology  
Conover-Mast Publications, Inc.  
205 East 42 St  
New York, N.Y. 10017

Monthly, free to qualified personnel engaged in development or design of electrical/electronic equipment; to others, \$15 a year.

Some good tutorials.

- B6. Control Engineering  
R.H. Donnelley Corp.  
466 Lexington Avenue  
New York, N.Y. 10017

Monthly. Free to qualified U.S.-based individuals. Non-qualified rate, \$10 a year.

Mostly about automatic control systems, occasionally items of interest, usually low-frequency circuits.

- B7. The Electronic Engineer  
(Was Electronic Industries)  
Chilton Co.  
Chestnut & 56 Sts.  
Philadelphia, Pa. 19139

Monthly, \$12 a year.

Occasionally a good article, such as "Applications of Collector Logic" (Aug. 1965).

- B8. Computer Design  
Professional Bldg.  
Baker Avenue  
West Concord, Mass.

Monthly. Free to qualified individuals, \$15 a year to the non-qualified.

Some interesting technical articles, such as "Magnetic Drum Clock Track Writer" (Mar. 1966). Lists government reports in the computer field, has a good new-products section of interest.

C1. Electronic Engineering  
Morgan Brothers (Publishers)  
28 Essex Street Ltd.  
Strand  
London, W.C. 2, England

Monthly, \$8 a year in USA.

Excellent system articles, such as "A Small Transistorized Digital Computer -- Arithmetic and Control Sections" (June 1965).

C2. Radio and Electronic Engineer  
Institute of Electronic and  
Radio Engineers  
8-9 Bedford Square  
London, W.S. 1, England

Monthly, \$20 a year to members in the USA.

Fine system articles, such as "A Technique for the Transmission of Digital Information over Short Distances using Infra-Red Radiation" (June 1965).

C3. Wireless World  
Iliffe Electrical Publications  
Dorset House Ltd.  
Stamford St  
London, S.E. 1, England

Monthly, \$8 a year in USA.

Some good articles, such as "Data Transmission Demonstrations" (January 1967).

C4. Industrial Electronics  
Iliffe Electrical Publications  
Dorset House Ltd.  
Stamford St  
London, S.E. 1, England

Monthly, \$10 a year in USA.

Interesting automatic control articles, such as "The Evolution of TTL Integrated Circuits," describing Texas Instruments circuits (Feb. 1967).

C5. Plessey Communications Journal  
(Was A.T.E. Journal)  
Automatic Telephone & Electric  
Co., Ltd.  
Strowger Works  
Liverpool 7, England

Monthly. Distributed free to organizations and companies, no individuals except in their capacity as senior officials of an organization.

Good system and circuit articles, such as "A Universal Binary Pulse Counter" (Oct. 1964).

C6. Control  
Morgan Brothers (Publishers)  
28 Essex Street Ltd.  
Strand  
London, W.C. 2, England

Monthly, \$6 a year in USA.

D1. Information Processing Journal  
Cambridge Communications Corp.  
238 Main Street  
Cambridge, Mass. 02142

\$60 a year, appearance very irregular, often several monthly issues combined into one.

Excellent abstracts of U.S. and foreign (mainly U.S.) journal articles, patents, research reports, and dissertations.

D2. Electrical & Electronic Abstracts  
The Institute of Electrical  
Engineers  
Savoy Place  
London, W.C. 2, England

Monthly, £30 a year, £10 10s to members.

Worldwide abstracts (22,000 annually), including Communist-bloc publications. Look under the headings Electronic Cir-

uits & Devices (Pulse Circuits) and under Computers.

D3. Computer Abstracts

Technical Information Co.  
Martins Bank Chambers  
P.O. Box 59, St. Helier  
Jersey, British Channel Islands

Monthly, \$96 a year.

Excellent abstracts, patent digests, book reviews, covering a large part of the Western world.

D4. IEEE Computer Group News

IEEE Order Dept.  
345 East 47 St  
New York, N.Y. 10017

Free to members of IEEE Computer Group and to non-member subscribers to that group's transactions. To non-members of the IEEE, \$12 a year.

Each issue contains a dozen pages of abstracts of papers not usually indexed elsewhere, and a permuted title index to current computer literature. Copies of the abstracted papers are available at reasonable prices from the Computer Group Repository, at IEEE Headquarters.

A permuted title index means that the key words in the titles are lined up in a vertical column. The March 1967 News contains a listing of 500 titles from 20 journals and magazines published from April to December, 1966.

D5. Engineering Index

345 East 47 St  
New York, N.Y. 10017

Monthly, \$350 a year; \$250 a year to educational and non-profit organizations.

Indexes U.S. and foreign magazines and journals. Look under Computers, where you'll find a list of other headings under which to look. See also Memory Devices.

D6. ACM Computing Reviews

211 East 43 St  
New York, N.Y. 10017

Twice a month, subscription included in \$18 annual dues. To non-members, \$15.

Reviews and abstracts of magazine articles, books, newspaper articles. Excellent reviews. Mostly software, but has a section on Design & Construction.

D7. Monthly Catalog of U.S. Govt. Publications.

Supt. of Documents  
U.S. Govt. Printing Office  
Washington, D.C. 20402

Monthly, \$4.50 a year.

Few items of interest to amateurs, nearly all of them publications of the National Bureau of Standards and the Bureau of Naval Personnel.

Contains over 20,000 items a year, listed according to the issuing governmental agency and in an alphabetic index. Most items are for sale by the Supt. of Documents, some are for sale by the Clearinghouse. Others are for official use only, and not available to the public. Still others are sent to depository libraries, which are public and university libraries all over the country. Most are partial depositories, meaning that they receive only selected items. The full depositories get all items. Among the full depositories are:

New York - Public Library, Main  
Chicago - Public Library  
John Crerar Library

Boston - Public Library  
State Library

Los Angeles - Public Library  
Each September issue of the Catalog contains a full list of all the depository libraries.

Many of the depository items, including all these for official use, are on microfiche cards and must be viewed with a special enlarging viewer, which is not very bright and is therefore a strain on the eyes. A full depository will also have many non-depository items, on microfiche or in hard copy.

(A microfiche is a card on which a great many pages of a book have been printed in highly reduced size. Fiche is the French word for a small card.)

If you find a government publication that looks interesting in a catalog, you may wish to take a look at it before ordering. The depository files are the only way of looking at many items.

The December issue of the Monthly Catalog includes a complete index for the whole year, so for 1966 and earlier, you need go through only one index per year. For computers, look under Electronic Computer, Electronic Data Processing, Electronic Circuits, Logic, and Computers.

D8. U.S. Government Research & Development Reports  
Clearinghouse for Federal Scientific and Technical Information  
Springfield, Virginia 22151

Twice a month, \$30 a year.

Occasionally contains items of interest. Computers are under category 9B, in the current volumes. An example is "Digital Computer User's Manual for EE Students and Faculty," \$3 in hard copy,

56 pages, AD-638-023.

Starting in 1967, the volume number is the same as the year. Effective 1-1-67, the Clearinghouse changed its pricing policy for document sales from a sliding price scale based on the number of pages, to a single price. The new price is \$3.00 for a paper copy (hard copy - HC); 65¢ per document for microfiche (MF). The single price does not apply to multiple copy orders of a single document. These prices also apply to documents announced before 1-1-67.

D9. Government-Wide Index to Federal R&D Reports  
Clearinghouse

Twice a month, \$22 a year.

Produced by computer from records generated by four Federal agencies that announce R&D reports: AEC (Atomic Energy Commission), NASA, DDC (Defense Documentation Center), and CFSTI (Clearinghouse). GWI indexes all the reports announced in the U.S. Government R&D Reports.

Alphabetical; look under Computer, Data Processing, Logical Design, Memory. Example: "Memory Storage Unit, Theory and Design Techniques for Magnetic-Core Memories," Vol. II, HC \$3 MF \$0.65

D10. STAR-NASA  
(Scientific and Technical Aerospace Reports, published by NASA)  
Supt. of Documents, USGPO

Twice a month, \$33 a year.

Look under Category 8, Computers. Inside the back cover is a list of the 10 university libraries and 35 public libraries in 24 states, where

NASA documents may be studied.

as 1950-1960, in 2 volumes.

**D11. Applied Science & Technology Index**

The H.W. Wilson Co.  
950 University Avenue  
Bronx, New York 10452

Monthly (except August), \$25 a year.

Contains abstracts of articles from a great many U.S. publications and a few British ones. Look under Computers, Electronic Data Processing, etc.

**D12. Union List of Serials in Libraries of the United States and Canada**

The H.W. Wilson Co.  
950 University Avenue  
Bronx, New York 10452

Third Edition, \$120.

Lists, by publication, the libraries in the USA and Canada that have the listed magazines, both US and foreign. The third edition goes up to Dec. 31, 1949, includes 956 cooperating libraries.

Handy place to find out where you can look at a magazine. For example, the Digital Computer Newsletter can be seen at 41 libraries in the USA and 3 in Canada.

**D12A. New Serial Titles**

Card Division  
Library of Congress  
Washington 25, D.C.

Monthly issues and cumulative annual volume, \$75 a year.

Updating supplements to the Union List of Serials. The annual cumulative volumes are in turn cumulated over 5- or 10-year periods, such

**D13. Technical Translations Clearinghouse**

Twice a month, \$12 a year.

Mostly translations of Soviet and Communist Chinese publications. Very few items of interest. Computers are under category 9B in these abstracts.

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**CURRENT PUBLICATIONS**

M.E.L. Teaching Computer. If any of you have had trouble getting from Amperex the M.E.L. booklet described in ACS Newsletter 5, page 3, write to Al Cerne in the Components Division of Amperex.

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Design of a Low-Cost Character Generator for Remote Computer Displays, by T.B. Cheek, Project MAC, at MIT. Ask for AD-631-269, from the Clearinghouse for Federal Scientific and Technical Information, Springfield, Virginia 22151, \$3.00.

Uses a 5-by-7 dot matrix raster and a resistor-array read-only character memory for 96 symbols.

Drawback is that a standard CRT is not used, as regeneration would be necessary, requiring a high-speed memory. A storage CRT is used; in this case, a Tektronix 564 Storage Oscilloscope.

Parts costs are estimated to be under \$200. Parts include Fairchild Micrologic ICs (923 JK flip-flop, 914 dual NOR, 900 driver), 2N2923 and 2N3569 transistors.

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Jim Sutherland's ECHO-4 computer is described on page 36 of the March issue of EE (The Electronic Engineer). Jim's computer, 7 feet long, 2 feet deep and 6 feet high,

The Amateur Computer Society is open to all who are interested in building and operating a digital computer that can at least perform automatic multiplication and division, or is of comparable complexity.

For membership in the ACS, and a subscription of at least eight issues of the Newsletter, send \$3 (or a check made out to me):

Stephen B. Gray  
Amateur Computer Society  
219 West 81 St  
New York, N.Y. 10024

The Newsletter will appear about every two months.

took a year to build and will take 10 years to program.

#### LOGIC TEMPLATE

At the last IEEE Show in New York, the Semiconductor Division of Sprague Electric Company (Worcester, Mass.) gave away a logic template containing MIL Standard 806 logic symbols. The template may be available from Sprague even without a letterhead. Worth a try. Has 18 symbols, from AND to read/write head.

#### TAPE, ANYBODY?

Computer tape, made by Scotch, Ampex and Memorex, 250' to 3000' spools,  $\frac{1}{8}$ " ,  $\frac{3}{4}$ " and 1" widths, from Autometics and North American, and priced at \$3 and up, will be sent to you COD by

Pat Killmer  
3442 Montair Avenue  
Long Beach, Calif. 90808  
if you let him know your needs.

#### INCIDENTAL INFORMATION

One estimate of IBM's manufacturing costs for the 360: 12-15% of sales price. The same source guesses

RCA's costs to be 30-35%. (From Datamation, Dec. 1966, page 113.)

#### HOW FAR ALONG IS YOUR COMPUTER?

Jim Haynes notes that my mention, in the first Newsletter, about some ACS members being halfway or two-thirds of the way toward completing their computers, is incorrect. He says, "I believe it is in the 1956 or maybe the 1955 WJCC (Western Joint Computer Conference) Proceedings that you will find that all computers which are not completed are 80% complete." Therefore, the computers of all ACS members are officially 80% complete.

#### CHEAP PUSHBUTTON SWITCH

Most pushbuttons are too expensive to be bought new. However, Centralab has been licensed by Isostat of France to produce a new line of pushbutton switches that are simple enough to be cheap enough for the amateur, if bought in quantity.

A DPDT switch costs \$2.68 for one, 75¢ in quantities of 100. An 8PDT switch is about \$4.50 for one, about \$1.22 in quantities of 100.

Write Centralab, P.O. Box 591, Milwaukee, Wisc. 53201.

#### NUTZ TO HERTZ

As of Newsletter #4, I've gone back to Kc and family, leaving Hz in the lurch, where he belongs.

NEXT ISSUE will be about mounting circuit boards and ICs, and about interconnections. If you have any experience with these and haven't written in yet, please send details.

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