REMark®

$2.50

Volume 6, Issue 1 • January 1985

P/N 885-2060 Issue 60

Official magazine for users of HEATH ZENITH computer equipment.

Policy & Reference Issue

Heath/Zenith Users' Group

REMark®

Welcome to the Heath/Zenith Users' Group 8

Heath/Zenith Data Systems Software Consultation Information Bulletin Board 13

Public Domain Anyone? 14

Operating System Emulators

Pat Swayne 16

Current Local HUG Clubs 18

The Z-100 PC Personal Computer Not Just Another PC-Compatible

Mark J. Foster 28

Staff

Manager ..... Bob Ellerton
(616) 982-3867

Software Engineer ..... Pat Swayne
(616) 982-3463

Bulletin Board and
Software Developer ..... Jim Buszkiewicz
(616) 982-3463

Software Coordinator ..... Nancy Strunk
(616) 982-3838

Secretary ..... Margaret Bacon
(616) 982-3463

REMark

Editor ..... Walt Gillespie
(616) 982-3789

Editorial and Advertising
Assistant ..... Lori Latham
(616) 982-3794

Printers ..... Imperial Printing
St. Joseph, MI

	U.S. Domestic	APO/FPO & All Others
Initial	$20.00	$35.00*
Renewal	$17.00	$30.00*

* U.S. Funds

Limited back issues are available at $2.50, plus 10% shipping and handling. Check HUG Product List for availability of bound volumes of past issues. Requests for magazines mailed to foreign countries should specify mailing method and appropriate added cost.

Send Payment to: Heath/Zenith Users' Group
Hilltop Road
St. Joseph, MI 49085

(616) 982-3463

Although it is a policy to check material placed in REMark for accuracy, HUG offers no warranty, either expressed or implied, and is not responsible for any losses due to the use of any material in this magazine.

Articles submitted by users and published in REMark, which describe hardware modifications, are not supported by Heathkit Electronic Centers or Heath Technical Consultation.

HUG is provided as a service to its members for the purpose of fostering the exchange of ideas to enhance their usage of Heath equipment. As such, little or no evaluation of the programs or products advertised in REMark, the Software Catalog, or other HUG publications is performed by Heath Company, in general and HUG, in particular. The prospective user is hereby put on notice that the programs may contain faults, the consequence of which Heath Company, in general, and HUG, in particular, cannot be held responsible. The prospective user is, by virtue of obtaining and using these programs, assuming full risk for all consequences.

REMark is a registered trademark of the Heath/Zenith Users' Group, St. Joseph, Michigan.

Copyright © 1984, Heath/Zenith Users' Group

Official magazine for users of HEATH ZENITH computer equipment.

Volume 6, Issue 1 January 1985

HUG Price List 35

Heath/Zenith Users' Group Program Submittal and Agreement Form 37

HUG Software Catalog Update

1984 HUG Releases 38

1983 HUG Releases 50

1984 REMark Cross Index of Articles 66

Related Heath/Zenith Vendors 73

Index of Advertisers

This index is provided as an additional service. The publisher does not assume any liability for errors or omissions.

ACT Marketing 6,7
Analytical Products 79
Bersearch Information Services 75
William N. Campbell, MD 32
Dysan Corporation 99
Generic Computer Products, Inc. 87
Guardian 25 15
H.M. Technologies 83
Home Management Enterprises, Inc. 87
Headware 79,83
Hilgraeve, Inc. 17
IOMEGA 3
Inner Access Corporation 91
Mako Data Products 79
Microservices 87
Mullen Computer Products 49
Northwest Computer Algorithms 32
OWI, Inc. 36
Michael E. Pittman 75
Robosoft 83
Secured Computer Systems, Inc. 32
Sigma Soft 65
Soft Wright Systems 91
Software Toolworks, The 75,98
Software Wizardry 100
Studio Computers 2
Technical Micro Systems Inc. 34
UCI Corporation 33
VariousWare 87
Veritechnology Electronics Corporation 15
Westcomp 91
Wizard Software House 36
ZPAY Payroll Systems 91

On The Cover: *Computers are everywhere. Now even into 'pop' art. This months cover shows one computer's rendition of the Heath-/Zenith Family of Computers surrounding the HUG logo.*

REMark®

Volume 6, Issue 2 • February 1985
P/N 885-2061 Issue 61

Official magazine for users of HEATH ZENITH computer equipment.

SUPER SPREADSHEET ISSUE -- INCOME TAX 1984, PAGE 7

$2.50

Heath/Zenith Users' Group

REMark®

Buggin' HUG 6

Spreadsheet Corner - Part 6

H.W. Bauman 7

Spreadsheet Corner - Part 7

H.W. Bauman 17

High Resolution Graphics With CP/M-85

Robert B. Owens 26

Making Z-100 WordStar Faster (And Other Fast Hints)

Pat Swayne 32

HUG New Products 34

HUG Price List 36

A Tour Through The Debugger, Video Modes, And The Keyboard

Mark Foster 37

Binary Searches -- The Secret For Speed

Paul L. Eustace 40

Staff

Manager ..... Bob Ellerton
(616) 982-3867

Software Engineer ..... Pat Swayne
(616) 982-3463

Bulletin Board and
Software Developer ..... Jim Buszkiewicz
(616) 982-3463

Software Coordinator ..... Nancy Strunk
(616) 982-3838

Secretary ..... Margaret Bacon
(616) 982-3463

REMark

Editor ..... Walt Gillespie
(616) 982-3789

Editorial and Advertising
Assistant ..... Lori Latham
(616) 982-3794

Printers ..... Imperial Printing
St. Joseph, MI

	U.S. Domestic	APO/FPO & All Others
Initial	$20.00	$35.00*
Renewal	$17.00	$30.00*

* U.S. Funds

Limited back issues are available at $2.50, plus 10% shipping and handling. Check HUG Product List for availability of bound volumes of past issues. Requests for magazines mailed to foreign countries should specify mailing method and appropriate added cost.

Send Payment to: Heath/Zenith Users' Group
Hilltop Road
St. Joseph, MI 49085

(616) 982-3463

Although it is a policy to check material placed in REMark for accuracy, HUG offers no warranty, either expressed or implied, and is not responsible for any losses due to the use of any material in this magazine.

Articles submitted by users and published in REMark, which describe hardware modifications, are not supported by Heathkit Electronic Centers or Heath Technical Consultation.

HUG is provided as a service to its members for the purpose of fostering the exchange of ideas to enhance their usage of Heath equipment. As such, little or no evaluation of the programs or products advertised in REMark, the Software Catalog, or other HUG publications is performed by Heath Company, in general and HUG, in particular. The prospective user is hereby put on notice that the programs may contain faults, the consequence of which Heath Company, in general, and HUG, in particular, cannot be held responsible. The prospective user is, by virtue of obtaining and using these programs, assuming full risk for all consequences.

REMark is a registered trademark of the Heath/Zenith Users' Group, St. Joseph, Michigan.

Copyright © 1984, Heath/Zenith Users' Group

Official magazine for users of HEATH ZENITH computer equipment.

Volume 6, Issue 2 February 1985

Interfacing A Radio Shack Plotter To An H/Z Computer
Walter M. Scott III 43

Looking At CP/M-80, CP/M-85, And CP/M-86
William M. Adney 46

A Fan For The H/Z-37/77
Heberto Galicia and Jennifer McGraw 51

Speeding Up The Z-100
Tom Huber and John Rogers 54

ZCLK: A Calendar/Clock Module For The Z-100
Larry T. Wier 57

Keep It Simple Stupid . . . KISS Dating
R.J. Winkler 58

Heath/Zenith Related Products
Tom Huber 60

Coming Soon . . . HUG Personal Bulletin Board
Jim Buszkiewicz 67

Index of Advertisers

This index is provided as an additional service. The publisher does not assume any liability for errors or omissions.

Advanced Software Technologies 16,29
Analytical Products 55
Apex Systems Technology 62
Bersearch Information Services 22
CDR Systems, Inc. 41,42
DelSoft 16
Dysan Corporation 25
Floppy Disk Services 30,31
H.M. Technologies 38
Home Management Enterprises, Inc. 39
Headware 45
Hilgraeve, Inc. 2
Jay Gold Software 45
LJP 59
New Orleans General Data Systems 52
NewLine 3,39
Norcom 59
Penninsula Computer Users' Group 56
Red E Products 59
Redwood Development 61
S&K Technology 53
Secured Computer Systems, Inc. 8
Software Toolworks 50
Software Wizardry 68
Barry Watzman 53

On The Cover: *ALOHA! from Hawaii in February . . . Don't we wish!? But, an H89 on the beach . . . come on!!*

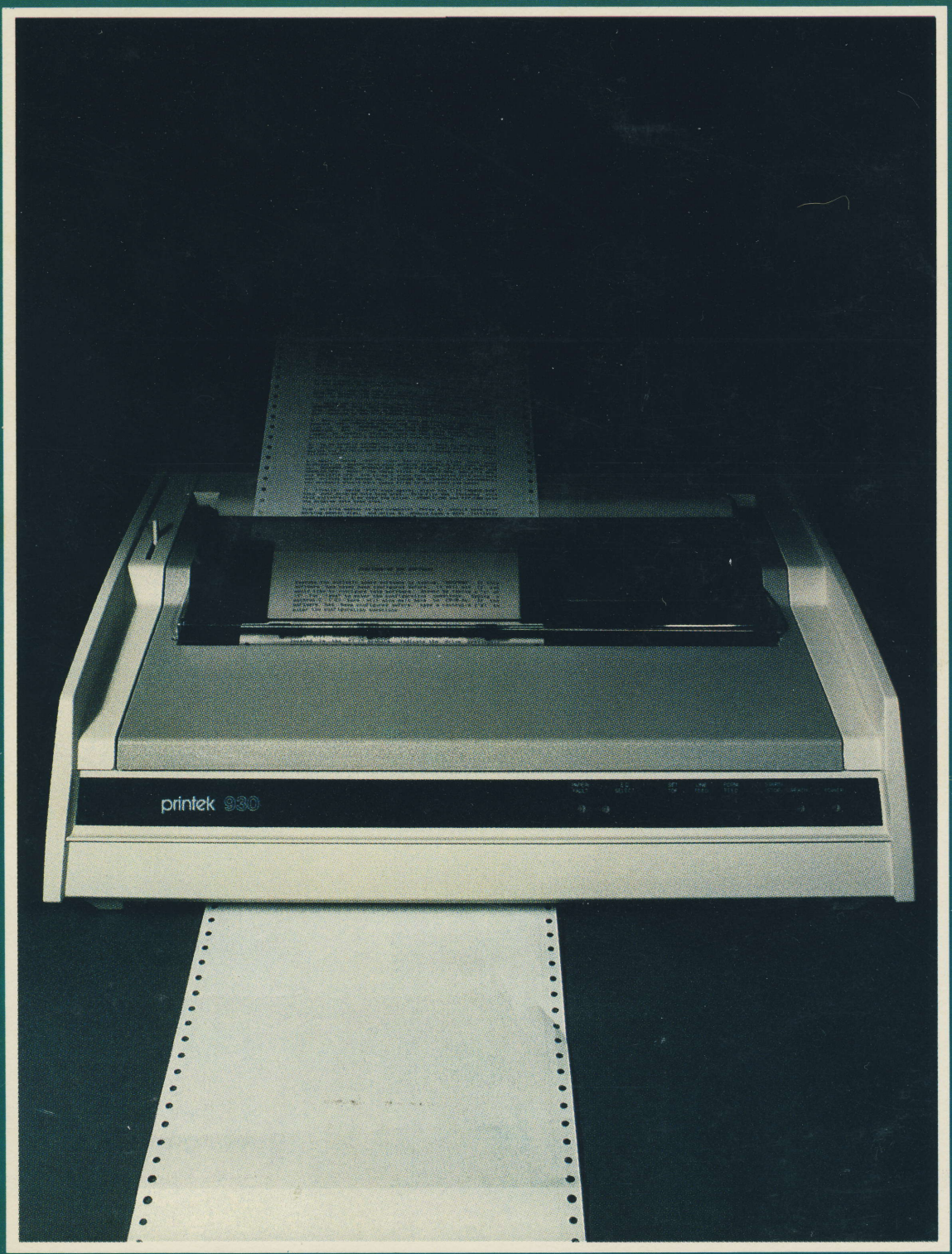
REMark®

Volume 6, Issue 3 • March 1985

P/N 885-2062

$2.50

Official magazine for users of HEATH ZENITH computer equipment.



Heath/Zenith Users' Group

Staff

Manager ..... Bob Ellerton
(616) 982-3867

Software Engineer ..... Pat Swayne
(616) 982-3463

Bulletin Board and
Software Developer ..... Jim Buszkiewicz
(616) 982-3463

Software Coordinator ..... Nancy Strunk
(616) 982-3838

Secretary ..... Margaret Bacon
(616) 982-3463

REMark

Editor ..... Walt Gillespie
(616) 982-3789

Editorial and Advertising
Assistant ..... Lori Latham
(616) 982-3794

Printers ..... Imperial Printing
St. Joseph, MI

	U.S. Domestic	APO/FPO & All Others
Initial	$20.00	$35.00*
Renewal	$17.00	$30.00*

* U.S. Funds

Limited back issues are available at $2.50, plus 10% shipping and handling. Check HUG Product List for availability of bound volumes of past issues. Requests for magazines mailed to foreign countries should specify mailing method and appropriate added cost.

Send Payment to: Heath/Zenith Users' Group
Hilltop Road
St. Joseph, MI 49085

(616) 982-3463

Although it is a policy to check material placed in REMark for accuracy, HUG offers no warranty, either expressed or implied, and is not responsible for any losses due to the use of any material in this magazine.

Articles submitted by users and published in REMark, which describe hardware modifications, are not supported by Heathkit Electronic Centers or Heath Technical Consultation.

HUG is provided as a service to its members for the purpose of fostering the exchange of ideas to enhance their usage of Heath equipment. As such, little or no evaluation of the programs or products advertised in REMark, the Software Catalog, or other HUG publications is performed by Heath Company, in general and HUG, in particular. The prospective user is hereby put on notice that the programs may contain faults, the consequence of which Heath Company, in general, and HUG, in particular, cannot be held responsible. The prospective user is, by virtue of obtaining and using these programs, assuming full risk for all consequences.

REMark is a registered trademark of the Heath/Zenith Users' Group, St. Joseph, Michigan.

Copyright © 1984, Heath/Zenith Users' Group

REMark®

Buggin' HUG 8

SPREADSHEET Corner — Part 8
H.W. Bauman 11

Implementing A Hard Disk On The H/Z-100
William M. Adney 22

Sequential Files — Part 1
David E. Warnick 30

HUG Price List 33

HUG New Products 34

CALC.BAS
William E. Reese 38

Official magazine for users of HEATH ZENITH computer equipment.

Volume 6, Issue 3 • March 1985

The Ultimate In Dot Matrix?
Jim Buszkiewicz 46

Debugging With MFM-150
Mark J. Foster 50

Using The MS-DOS Memory Disk
Pat Swayne 52

Bulletproof Garbage Filters
Kurt A. Schultz 54

A Born Again H89
Robert W. Hootman 59

A Menu For Z-100 Winchester Files
Stephen V. Chiavetta 61

Index of Advertisers

This index is provided as an additional service. The publisher does not assume any liability for errors or omissions.

ACT Marketing 6,7
Abe Dweck Programs 45
Advanced Software Technologies 45
Analytical Products 40
Apex Systems Technology 60
Bersearch Information Services 27
Computer Graphics Center, Inc. 28
DCS, Inc. 45
DelSoft 51
Dysan Corporation 37
First Capitol Computers 2
Floppy Disk Services, Inc. 48,49
Generic Computer Products, Inc. 21
Graphic Design Systems, Inc. 66
Guardian Data Systems 66
Headware 63,66
Jay Gold Software 65
KC Computers 68
NewLine Software 3,32
Paul F. Herman 32
Real Software, Inc. 63
Redwood Development 21
Ross Custom Electronics 21
Secured Computer Systems 28
SigmaSoft and Systems 29
Software Toolworks 21,51
Wizard Software House 60

On The Cover: *Shown is the Printek 930 printer. Is it the ultimate in dot matrix? Story on Page 46. (Photo by Jory Klopp, Heath Graphic Design)*

REMark®

Volume 6, Issue 4 • April 1985

P/N 885-2063 Issue 63

$2.50

Official magazine for users of HEATH ZENITH computer equipment.

Heath/Zenith Users' Group

Staff

Manager ..... Bob Ellerton
(616) 982-3867

Software Engineer ..... Pat Swayne
(616) 982-3463

Bulletin Board and
Software Developer ..... Jim Buszkiewicz
(616) 982-3463

Software Coordinator ..... Nancy Strunk
(616) 982-3838

Secretary ..... Margaret Bacon
(616) 982-3463

REMark

Editor ..... Walt Gillespie
(616) 982-3789

Editorial and Advertising
Assistant ..... Lori Latham
(616) 982-3794

Printers ..... Imperial Printing
St. Joseph, MI

	U.S. Domestic	APO/FPO & All Others
Initial	$20.00	$35.00*
Renewal	$17.00	$30.00*

* U.S. Funds

Limited back issues are available at $2.50, plus 10% shipping and handling — minimum $1.00 charge. Check HUG Product List for availability of bound volumes of past issues. Requests for magazines mailed to foreign countries should specify mailing method and appropriate added cost.

Send Payment to: Heath/Zenith Users' Group
Hilltop Road
St. Joseph, MI 49085

(616) 982-3463

Although it is a policy to check material placed in REMark for accuracy, HUG offers no warranty, either expressed or implied, and is not responsible for any losses due to the use of any material in this magazine.

Articles submitted by users and published in REMark, which describe hardware modifications, are not supported by Heathkit Electronic Centers or Heath Technical Consultation.

HUG is provided as a service to its members for the purpose of fostering the exchange of ideas to enhance their usage of Heath equipment. As such, little or no evaluation of the programs or products advertised in REMark, the Software Catalog, or other HUG publications is performed by Heath Company, in general and HUG, in particular. The prospective user is hereby put on notice that the programs may contain faults, the consequence of which Heath Company, in general, and HUG, in particular, cannot be held responsible. The prospective user is, by virtue of obtaining and using these programs, assuming full risk for all consequences.

REMark is a registered trademark of the Heath/Zenith Users' Group, St. Joseph, Michigan.

Copyright © 1984, Heath/Zenith Users' Group

REMark®

Buggin' HUG 7

Sequential Files — Part 2
David E. Warnick 10

From Heath To Endburg
Crawford MacKeand 13

Programming Video Modes
Mark Foster 18

Speed Mods For The Z-100
Pat Swayne 20

The FORTRAN Formula-3
Dick Stanley 22

Expanding The Heath/Zenith PC With The AST Research SixPak
Dale Grundon 28

Local HUG Clubs 32

HUG Price List 33

Official magazine for users of HEATH ZENITH computer equipment.

Volume 6, Issue 4 • April 1985

HUG New Products 34

Need More Speed? Try A Compiler
C. Nicholas Pryor 39

TURBO-Charging Your Z
Frank Dreano, Jr. 43

Share Your H-89 Peripherals With Brand "X" Computers
Peter Ruber 47

Two Useful "C" Functions
Charles R. Winchester 50

Patch Page
Pat Swayne 54

Shorten: A Program To Save Memory In BASIC Programs
Patrick Brans 55

COBOL Corner XII
H.W. Bauman 58

Heath/Zenith Related Products
Tom Huber 64

Index of Advertisers

This index is provided as an additional service. The publisher does not assume any liability for errors or omissions.

Abe Dweck Programs 26
Advanced Software Technologies 17
Analytical Products 57
CDR Systems, Inc. 27,53
Computer Graphics Center, Inc. 38
First Capitol Computer 6
Floppy Disk Services 30,31
Generic Computer Products, Inc. 27
Graphic Design Systems, Inc. 66
Guardian Data Systems 66
HUG Conference 21,29
Headware 46
Heath Company ..... -3
Hilgraeve, Inc. 2
Jay Gold Software 26
MDG & Associates 68
M.E. Pittman 63
Paul F. Herman 38
Redwood Development 46
S&K Technology, Inc. 63
Secured Computer Systems 19
Software Toolworks 57
Wizard Software House 12

On The Cover: *Shown are the Doves of Peace overlooking the Zenith logo. Made with a Zenith 110 and Hypad DT 11 Digitizer, then photographed with a Rolleiflex SL 66. This was produced by Henry Tourneur, a Graphic Illustrator from Brussells, Belgium.*

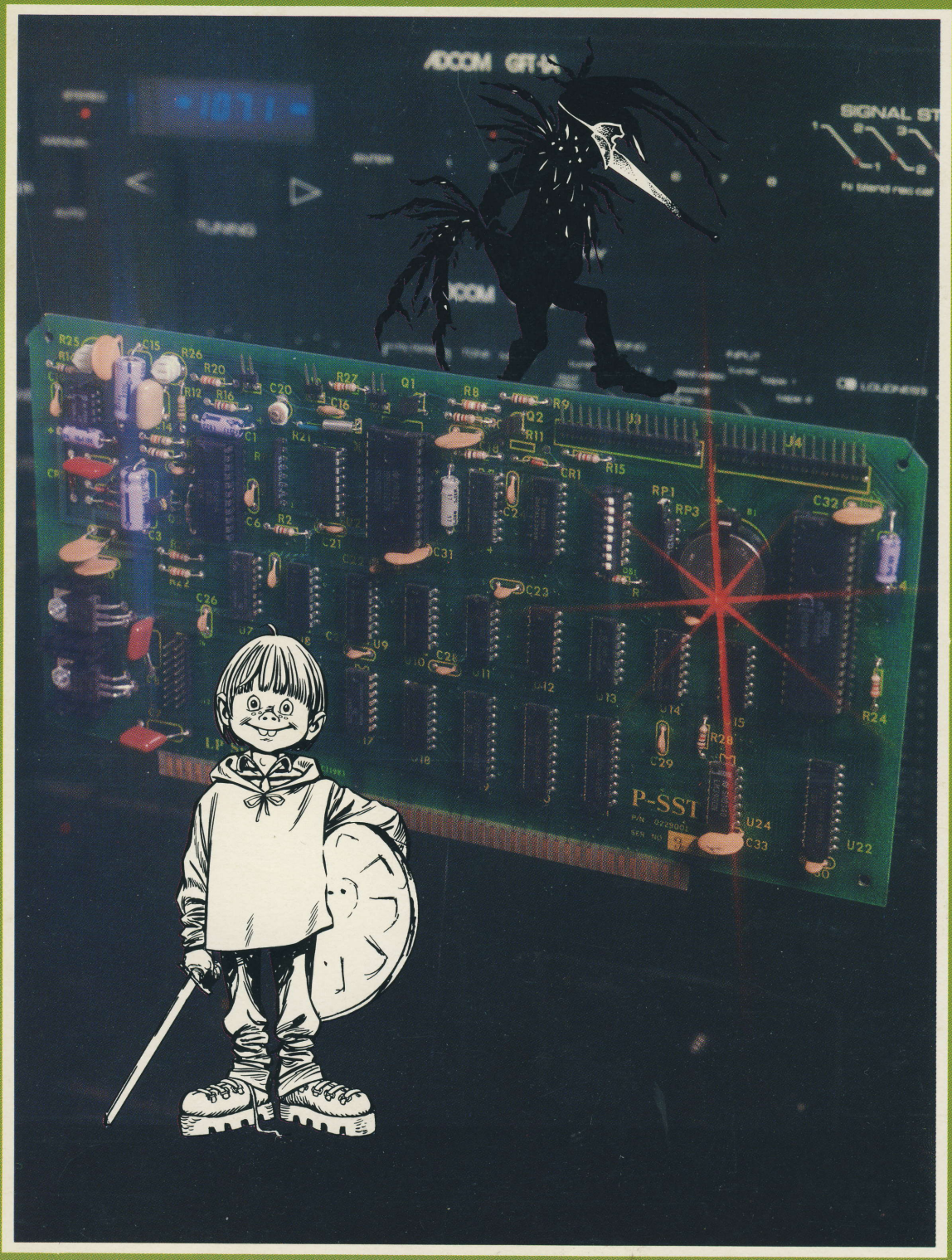
REMark®

Volume 6, Issue 5 • May 1985

P/N 885-2064 Issue 64

Official magazine for users of HEATH ZENITH computer equipment.

$2.50



Heath/Zenith Users' Group

Staff

Manager ..... Bob Ellerton
(616) 982-3867

Software Engineer ..... Pat Swayne
(616) 982-3463

Bulletin Board and
Software Developer ..... Jim Buszkiewicz
(616) 982-3463

Software Coordinator ..... Nancy Strunk
(616) 982-3838

Secretary ..... Margaret Bacon
(616) 982-3463

REMark

Editor ..... Walt Gillespie
(616) 982-3789

Editorial and Advertising
Assistant ..... Lori Latham
(616) 982-3794

Printers ..... Imperial Printing
St. Joseph, MI

	U.S. Domestic	APO/FPO & All Others
Initial	$20.00	$35.00*
Renewal	$17.00	$30.00*

* U.S. Funds

Limited back issues are available at $2.50, plus 10% shipping and handling — minimum $1.00 charge. Check HUG Product List for availability of bound volumes of past issues. Requests for magazines mailed to foreign countries should specify mailing method and appropriate added cost.

Send Payment to: Heath/Zenith Users' Group
Hilltop Road
St. Joseph, MI 49085

(616) 982-3463

Although it is a policy to check material placed in REMark for accuracy, HUG offers no warranty, either expressed or implied, and is not responsible for any losses due to the use of any material in this magazine.

Articles submitted by users and published in REMark, which describe hardware modifications, are not supported by Heathkit Electronic Centers or Heath Technical Consultation.

HUG is provided as a service to its members for the purpose of fostering the exchange of ideas to enhance their usage of Heath equipment. As such, little or no evaluation of the programs or products advertised in REMark, the Software Catalog, or other HUG publications is performed by Heath Company, in general and HUG, in particular. The prospective user is hereby put on notice that the programs may contain faults, the consequence of which Heath Company, in general, and HUG, in particular, cannot be held responsible. The prospective user is, by virtue of obtaining and using these programs, assuming full risk for all consequences.

REMark is a registered trademark of the Heath/Zenith Users' Group, St. Joseph, Michigan.

Copyright © 1984, Heath/Zenith Users' Group

REMark®

Buggin' HUG 8

Sequential Files — Part 3
David E. Warnick 11

Adding Sound And Speech To The Z-100
Tom Huber 14

CONVERT!
Raymond Dotson 18

The FORTRAN Formula — 4
Dick Stanley 22

Displaying Text On The Z-100 PCs — Part 1
Mark J. Foster 28

Spiral Magic On The H/Z100
Gary Cramblitt 30

COLOR — A Screen Color Setup Program For The H/Z-100
Glenn F. Roberts 35

HUG Price List 41

Official magazine for users of HEATH ZENITH computer equipment.

Volume 6, Issue 5 • May 1985

HUG New Products 42

Excursions Into FORTRAN
Hank Lotz 51

The Sometimes Useful H-89 Front Panel Monitor
Charles E. Horn 57

HUG Club Update 58

Spooldisk 89
Peter Ruber 59

SPREADSHEET Corner — Part 9
H.W. Bauman 64

Meltdown Imminent
John W. Rogers 70

Loading Assembled User Routines In Microsoft BASIC Under CP/M
Robert S. Wrathall 72

The Elusive Escape Codes In Pascal
Paul W. Simmons 74

Making Z-100 WordStar Faster — Part 2
Pat Swayne 80

Index of Advertisers

This index is provided as an additional service. The publisher does not assume any liability for errors or omissions.

Abe Dweck Programs 13
Analytical Products 13
CDR Systems, Inc. 45,73
Clarkson University 69
DelSoft 21
First Capitol Computers 27
Graphic Design Systems, Inc. 71
Guardian Data Systems 17
HME, Inc. 71
HUG Conference 9,29,69
Hilgraeve, Inc. 46
KC Computers 84
MDG & Associates 21
Newline Software 6,7
Norcom 71
Northwest Digital Systems 63
Paul Herman 58
Ross Custom Electronics 69
S&K Technology, Inc. 62
Secured Computer Systems 40
Sigma Soft and Systems 2
Software Toolworks 45,62
Solus Company 58
Sunflower Software, Inc. 79
Veritechnology 3
Barry Watzman 47-50
Wizard Software House 40

On The Cover: *Shown is the multi-function P-SST Card by Software Wizardry. Look for the review on Page 14. (Photo by Jory Klopp, Heath Graphic Design.)*

REMark®

Volume 6, Issue 6 • June 1985
P/N 885-2065 Issue 65

Official magazine for users of HEATH ZENITH computer equipment.

$2.50

INTRODUCING THE
ZP-150 PC LAPTOP

DUMP P57

Heath/Zenith Users' Group

REMark®

Staff

Manager ..... Bob Ellerton
(616) 982-3867

Software Engineer ..... Pat Swayne
(616) 982-3463

Bulletin Board and
Software Developer ... Jim Buszkiewicz
(616) 982-3463

Software Coordinator ..... Nancy Strunk
(616) 982-3838

Secretary ..... Margaret Bacon
(616) 982-3463

REMark

Editor ..... Walt Gillespie
(616) 982-3789

Editorial and Advertising
Assistant ..... Lori Lerch
(616) 982-3794

Printers ..... Imperial Printing
St. Joseph, MI

	U.S. Domestic	APO/FPO & All Others
Initial	$20.00	$35.00*
Renewal	$17.00	$30.00*

* U.S. Funds

Limited back issues are available at $2.50, plus 10% shipping and handling — minimum $1.00 charge. Check HUG Product List for availability of bound volumes of past issues. Requests for magazines mailed to foreign countries should specify mailing method and appropriate added cost.

Send Payment to: Heath/Zenith Users' Group
Hilltop Road
St. Joseph, MI 49085
(616) 982-3463

Although it is a policy to check material placed in REMark for accuracy, HUG offers no warranty, either expressed or implied, and is not responsible for any losses due to the use of any material in this magazine.

Articles submitted by users and published in REMark, which describe hardware modifications, are not supported by Heathkit Electronic Centers or Heath Technical Consultation.

HUG is provided as a service to its members for the purpose of fostering the exchange of ideas to enhance their usage of Heath equipment. As such, little or no evaluation of the programs or products advertised in REMark, the Software Catalog, or other HUG publications is performed by Heath Company, in general and HUG, in particular. The prospective user is hereby put on notice that the programs may contain faults, the consequence of which Heath Company, in general and HUG, in particular cannot be held responsible. The prospective user is, by virtue of obtaining and using these programs, assuming full risk for all consequences.

REMark is a registered trademark of the Heath/Zenith Users' Group, St. Joseph, Michigan.

Copyright (C) 1985, Heath/Zenith Users' Group

HUGCON '85 8

Buggin' HUG 11

ANSI — A Standard Screen Interface For Heath/Zenith Computers
Glenn F. Roberts 14

Introducing The ZP-150 PC
Jack Frank 19

Inside MBASIC Program Files
John C. Harper 22

Displaying Text On The Z-100 PCs — Part II
Mark J. Foster 28

HUG Price List 33

HUG New Products 34

Sequential Files — Part 4
David E. Warnick 36

Official magazine for users of HEATH ZENITH computer equipment.

Volume 6, Issue 6 • June 1985

USS Fast Attack — Simulations Become A Fine Art
Ralph F. Rumpf 39

A Parallel Printer Buffer For The Z-100
Dr. Michael Scott 44

Doodler
Steve Howard 50

More On The H/Z-100 Hard Disk Implementation
William M. Adney 55

My Favorite Subroutines
..... 57

Make Neat Flowcharts Fast With This Symbol Library
Clement S. Pepper 58

A Review Of Condor Database Management System
Stephanie Butzbach 60

Index of Advertisers

This index is provided as an additional service. The publisher does not assume any liability for errors or omissions.

21st Century Data, Inc. 54
Advanced Software Technologies 3
Analytical Products 56
Apex Systems Technology, Inc. 18
Buccaneer Software Ltd. 18
ByteSize Concepts, Inc. 21
CDR Systems, Inc. 43
William N. Campbell, M.D. 21
ComputerSmyth 38
Floppy Disk Services 30,31
Future Communications 29
Graphic Design Systems, Inc. 49
HUG Conference 9,10
Intersecting Concepts 6
Jay H. Gold, M.D. 54
MPI 13
Magicland 47
New Orleans General Data Services ... 67
Paul F. Herman 48
Red E Products 49
S&K Technology, Inc. 54
Secured Computer Systems 47
Software Toolworks, The 41
Software Wizardry, Inc. 32,68
Solus Company 54
Sunflower Software, Inc. 48
Systems Innovations, Inc. 2
Veritechnology Electronics Corp. 7
Wizard Software House 48

On The Cover: *Pictured is one of Zenith's newest additions to it's line of Personal Computers. The ZP-150. See story on Page 19.*

Photo courtesy Ed Quinones, Heath Advertising Department.

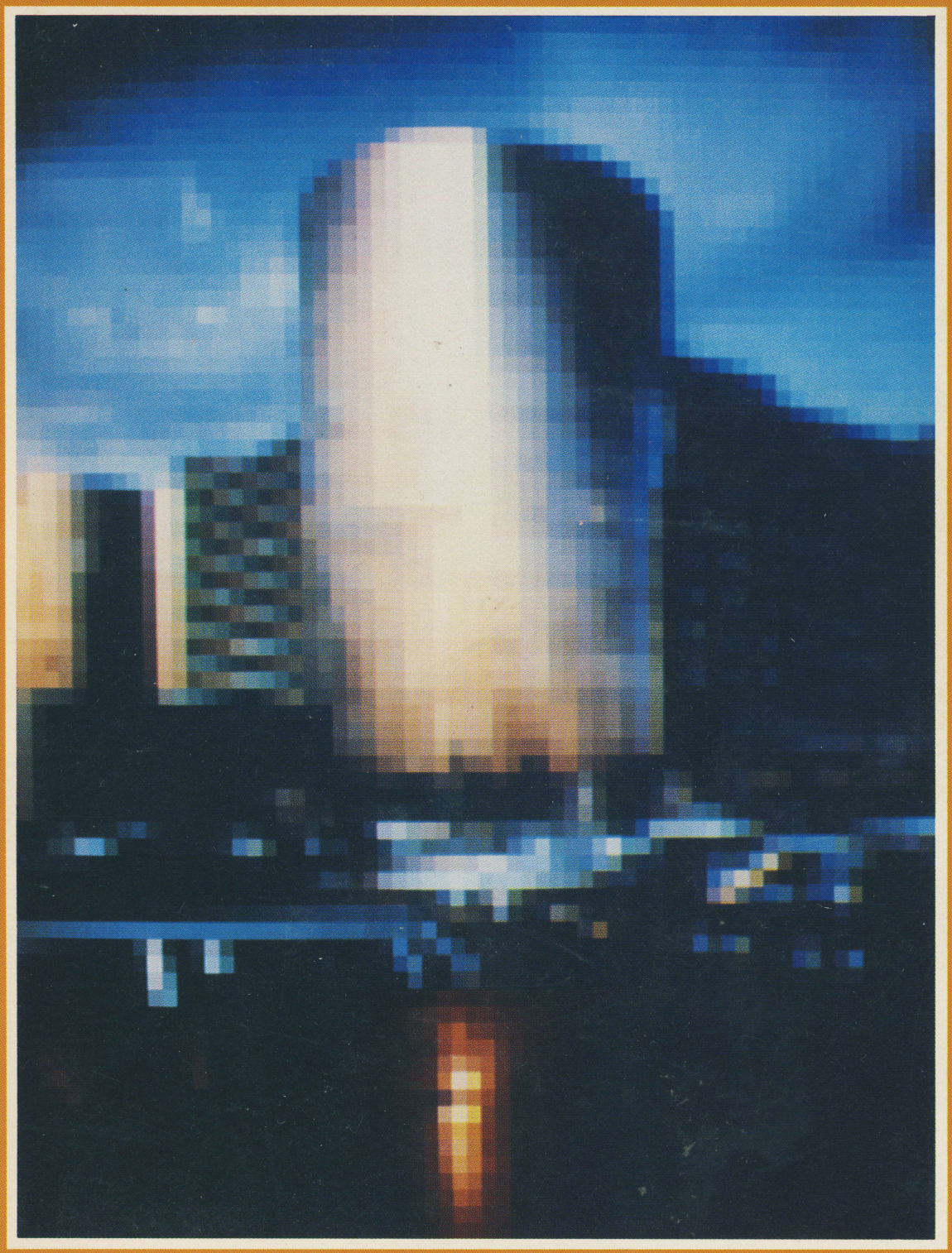
REMark®

$2.50

Volume 6, Issue 7 • July 1985

P/N 885-2066 Issue 66

Official magazine for users of HEATH ZENITH computer equipment.



Heath/Zenith Users' Group

Staff

Manager ..... Bob Ellerton
(616) 982-3867

Software Engineer ..... Pat Swayne
(616) 982-3463

Bulletin Board and
Software Developer ... Jim Buszkiewicz
(616) 982-3463

Software Coordinator ..... Nancy Strunk
(616) 982-3838

Secretary ..... Margaret Bacon
(616) 982-3463

REMark

Editor ..... Walt Gillespie
(616) 982-3789

Editorial Assistant ..... John Guldan

Printers ..... Imperial Printing
St. Joseph, MI

	U.S. Domestic	APO/FPO & All Others
Initial	$20.00	$35.00*
Renewal	$17.00	$30.00*

* U.S. Funds

Limited back issues are available at $2.50, plus 10% shipping and handling — minimum $1.00 charge. Check HUG Product List for availability of bound volumes of past issues. Requests for magazines mailed to foreign countries should specify mailing method and appropriate added cost.

Send Payment to: Heath/Zenith Users' Group
Hilltop Road
St. Joseph, MI 49085
(616) 982-3463

Although it is a policy to check material placed in REMark for accuracy, HUG offers no warranty, either expressed or implied, and is not responsible for any losses due to the use of any material in this magazine.

Articles submitted by users and published in REMark, which describe hardware modifications, are not supported by Heathkit Electronic Centers or Heath Technical Consultation.

HUG is provided as a service to its members for the purpose of fostering the exchange of ideas to enhance their usage of Heath equipment. As such, little or no evaluation of the programs or products advertised in REMark, the Software Catalog, or other HUG publications is performed by Heath Company, in general and HUG, in particular. The prospective user is hereby put on notice that the programs may contain faults, the consequence of which Heath Company, in general and HUG, in particular cannot be held responsible. The prospective user is, by virtue of obtaining and using these programs, assuming full risk for all consequences.

REMark is a registered trademark of the Heath/Zenith Users' Group, St. Joseph, Michigan.

Copyright (C) 1985, Heath/Zenith Users' Group

REMark®

4th Annual Heath/Zenith Users' Group Conference
Bob Ellerton 9
Schedule Of Events 11
Discussion Group Schedule 12
Conference Exhibitors 14

Buggin' HUG 15

Window Scrolling In BASIC On The H/Z-150
Pat Swayne 17

Graphics Characters & Machine Types
Mark J. Foster 19

Installing The HA-108 Upgrade Kit
Pat Swayne 22
Upgrading Your H-101/H-121
Jim Buszkiewics 26

Sequential Files — Part 5
David E. Warnick 30

Watching WatchWord Work Words
William M. Adney 34

A Super Intelligent, Inexpensive Peripheral
Timothy D. Stanley 42

Official magazine for users of HEATH ZENITH computer equipment.

Volume 6, Issue 7 • July 1985

Perk Up Your Z-100
Pat Swayne 43

HUG Price List 43

HUG New Products 50

Putting Colors Into Lotus 1-2-3
Dean J. Rath 55

SPREADSHEET Corner — Part 10
H. W. Bauman 58

Current Local HUG Clubs
..... 66

Transport Your H-89 To The 16-Bit Worlds
Peter Ruber, Loran R. Porter, Jr. 78

H/Z-100 Remote Keyboard Adapter Part 1
Tim Ross 83

COBOL Corner — Part VIII
H. W. Bauman 88

My Favorite Subroutines
..... 93

Index of Advertisers

This index is provided as an additional service. The publisher does not assume any liability for errors or omissions.

21st Century Data, Inc. 40
Advanced Software Technologies 21
Analytical Products 32
Barry Watzman 92, 100
Bersearch Information Services 18
CDR Systems, Inc. 7
Domino Computer Services, Inc. 54
Floppy Disk Services 46,47
Future Communications 18
Generic Computer Products, Inc. 20
Graphic Design Systems, Inc. 41
HUG Conference 28
Intenational Computer Service, Inc. ... 76
Intersecting Concepts 2
Lindley Systems 54
M.E. Pittman 33
Paul F. Herman 48
Redwood Development 92
Ross Custom Electronics 48
S&K Technology 54
Secured Computer Systems 48
Sigma Soft and Systems 77
Solus Company 57
Software Toolworks, The 41
Software Wizardry 29
Sunflower Software, Inc. 45
Systems Innovations, Inc. 6
Tex-Matics Micro Systems 99
Veritechnology Electronics Corp. 3
Wizard Software House 45

On The Cover: *A computer's rendition of the Hyatt Regency O'Hare, Chicago, Illinois, site of the 4th Annual Heath/Zenith Users' Group International Conference.*

Photo Pixelization by Computer Creations, South Bend, Indiana.

Heath/Zenith Users' Group

REMark®

Buggin' HUG 8

New Products From Blue Chip Software

Millionaire
Tom Huber 12

Baron
Pat Westfield 13

Tycoon
Susan Walker 14

Squire
Miles K. Hoffman 14

Graphics Tricks For The H/Z-150

Pat Swayne 17

Serial Interfacing On The Z-100 PC

Rick Housh 22

Interactive Graphics Controller From SigmaSoft And Systems

Peter Ruber 25

SPREADSHEET Corner — Part 11

H. W. Bauman 31

HUG Price List 41

Staff

Manager ..... Bob Ellerton
(616) 982-3867

Software Engineer ..... Pat Swayne
(616) 982-3463

Bulletin Board and
Software Developer ... Jim Buszkiewicz
(616) 982-3463

Software Coordinator ..... Nancy Strunk
(616) 982-3838

Secretary ..... Margaret Bacon
(616) 982-3463

REMark

Editor ..... Walt Gillespie
(616) 982-3789

Editorial Assistant ..... John Guldan

Printers ..... Imperial Printing
St. Joseph, MI

	U.S. Domestic	APO/FPO & All Others
Initial	$20.00	$35.00*
Renewal	$17.00	$30.00*

* U.S. Funds

Limited back issues are available at $2.50, plus 10% shipping and handling — minimum $1.00 charge. Check HUG Product List for availability of bound volumes of past issues. Requests for magazines mailed to foreign countries should specify mailing method and appropriate added cost.

Send Payment to: Heath/Zenith Users' Group
Hilltop Road
St. Joseph, MI 49085
(616) 982-3463

Although it is a policy to check material placed in REMark for accuracy, HUG offers no warranty, either expressed or implied, and is not responsible for any losses due to the use of any material in this magazine.

Articles submitted by users and published in REMark, which describe hardware modifications, are not supported by Heathkit Electronic Centers or Heath Technical Consultation.

HUG is provided as a service to its members for the purpose of fostering the exchange of ideas to enhance their usage of Heath equipment. As such, little or no evaluation of the programs or products advertised in REMark, the Software Catalog, or other HUG publications is performed by Heath Company, in general and HUG, in particular. The prospective user is hereby put on notice that the programs may contain faults, the consequence of which Heath Company, in general and HUG, in particular cannot be held responsible. The prospective user is, by virtue of obtaining and using these programs, assuming full risk for all consequences.

REMark is a registered trademark of the Heath/Zenith Users' Group, St. Joseph, Michigan.

Copyright (C) 1985, Heath/Zenith Users' Group

Official magazine for users of HEATH ZENITH computer equipment.

Volume 6, Issue 8 • August 1985

HUG New Products 42

Get High On High Speed!
Jim Buszkiewicz 44

H/Z-100 Remote Keyboard Adapter Part 2
Tim Ross 47

Looking At Software
William M. Adney 52

HUG-Aids *Pat Swayne*
Recovering From The Protected Mode In ZBASIC Or GW-BASIC 59
Fixing Back Space On Z-150 WordStar 61
Patch Page 62

Switching Z-100 Hardware Printer Ports
William S. Hall 64

Checkoff Search And Print
Jim Meyers 74

Professional Text Processor
Robert S. De Wolf 76

Index of Advertisers

This index is provided as an additional service. The publisher does not assume any liability for errors or omissions.

21st Century Data, Inc. 79
Advanced Software Technologies ... 2,46
Analytical Products 24
Barry A. Watzman 84
Bersearch Information Services 63
CDR Systems, Inc. 16
DG Electronics 3
DelSoft 79
ETTS, Inc. 63
Floppy Disk Services 38,39
Future Communications 20
Headware 24
Kres Engineering 58
Liberty International 20
Paul F. Herman 63
QuikData 6,7
Red E Products 37
Redwood Development 83
Rex Service Company 51
Secured Computer Systems 58
Sextant Publishing 21
Software Toolworks, The 37,73
Software Wizardry 40
Solus Company 78
Tex-Matics 45
Time Works, The 78
Veritechnology Electronics Corp. 11
Weitzman & Wood Associates 79
Western HUG Conference 80
ZPAY Payroll Systems 75

On The Cover: *Pictured are four new products from Blue Chip Software, 6744 Eton Avenue, Canoga Park, CA 91303. These financial simulations are reviewed in this month's REMark beginning on page 12.*

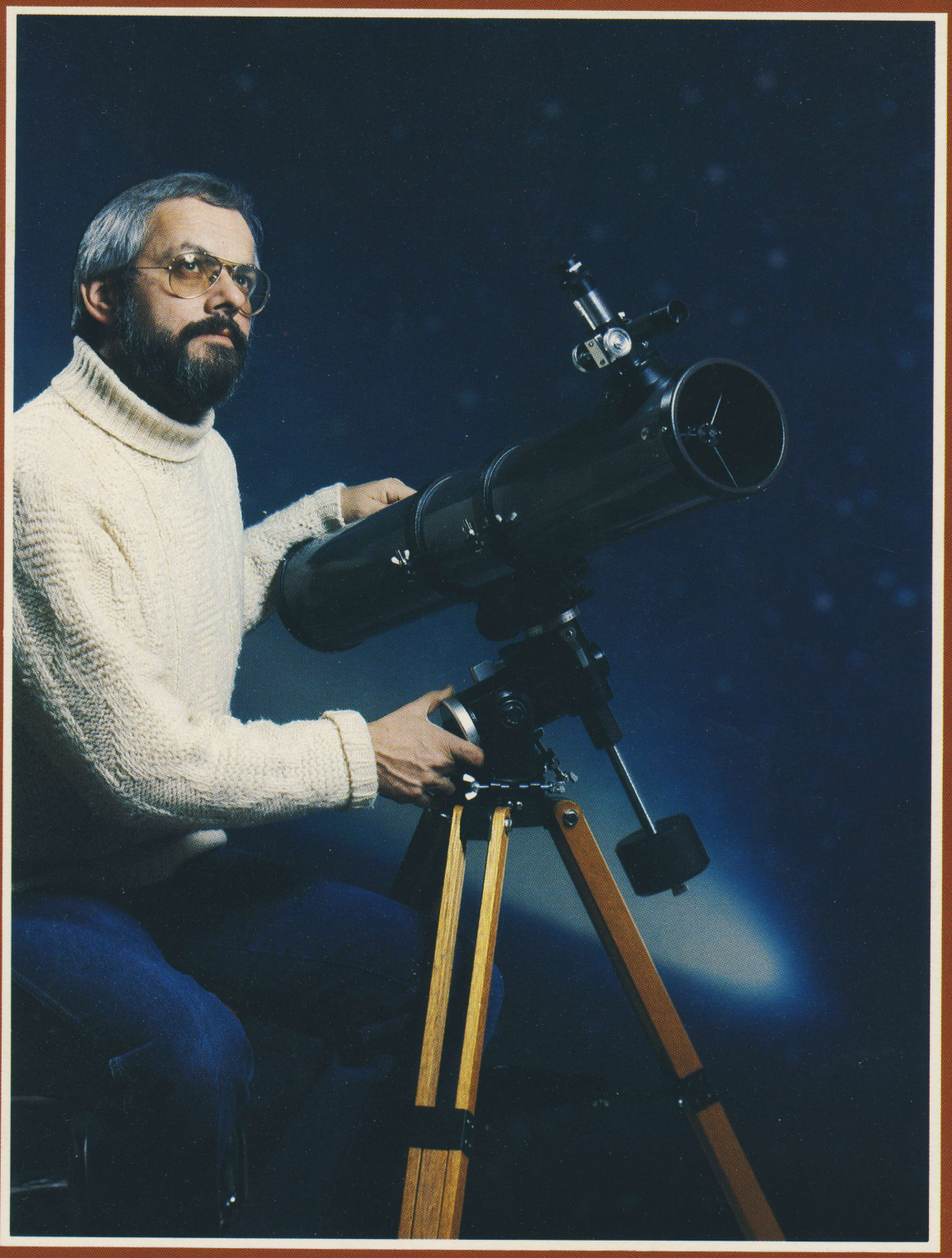
Photo courtesy of Blue Chip Software.

REMark®

Volume 6, Issue 9 • September 1985
P/N 885-2068 Issue 68

$2.50

Official magazine for users of HEATH ZENITH computer equipment.



Heath/Zenith Users' Group

Staff

Manager ..... Bob Ellerton
(616) 982-3867

Software Engineer ..... Pat Swayne
(616) 982-3463

Bulletin Board and
Software Developer ... Jim Buszkiewicz
(616) 982-3463

Software Coordinator ..... Nancy Strunk
(616) 982-3838

Secretary ..... Margaret Bacon
(616) 982-3463

REMark

Editor ..... Walt Gillespie
(616) 982-3789

Editorial and Advertising
Assistant ..... Lori Lerch
(616) 982-3794

Printers ..... Imperial Printing
St. Joseph, MI

	U.S. Domestic	APO/FPO & All Others
Initial	$20.00	$35.00*
Renewal	$17.00	$30.00*

* U.S. Funds

Limited back issues are available at $2.50, plus 10% shipping and handling — minimum $1.00 charge. Check HUG Product List for availability of bound volumes of past issues. Requests for magazines mailed to foreign countries should specify mailing method and appropriate added cost.

Send Payment to: Heath/Zenith Users' Group
Hilltop Road
St. Joseph, MI 49085
(616) 982-3463

Although it is a policy to check material placed in REMark for accuracy, HUG offers no warranty, either expressed or implied, and is not responsible for any losses due to the use of any material in this magazine.

Articles submitted by users and published in REMark, which describe hardware modifications, are not supported by Heathkit Electronic Centers or Heath Technical Consultation.

HUG is provided as a service to its members for the purpose of fostering the exchange of ideas to enhance their usage of Heath equipment. As such, little or no evaluation of the programs or products advertised in REMark, the Software Catalog, or other HUG publications is performed by Heath Company, in general and HUG, in particular. The prospective user is hereby put on notice that the programs may contain faults, the consequence of which Heath Company, in general and HUG, in particular cannot be held responsible. The prospective user is, by virtue of obtaining and using these programs, assuming full risk for all consequences.

REMark is a registered trademark of the Heath/Zenith Users' Group, St. Joseph, Michigan.

Copyright (C) 1985, Heath/Zenith Users' Group

REMark®

Buggin' HUG 8

It's A Bird . . . It's A Plane . . . It's Halley's Comet
Jim Tursa 10

FASTIO Patch
Pat Swayne 18

Operating Systems: Fact, Fiction, and Future
William M. Adney 20

COBOL Corner XIV
H. W. Bauman 28

HUG Price List 33

HUG New Products 34

Your Own Personal MS-DOS Amanuensis
Vincent Alfieri, Ph.D. 38

Official magazine for users of HEATH ZENITH computer equipment.

Volume 6, Issue 9 • September 1985

For Those Times When You Really Need A Typewriter
Fred T. Ormand **42**

H-89 HDOS/CPM Interface To TRS80/Model 100 Portable Computer
V. N. Fritz **44**

8 MHz 256k Update
Pat Swayne **48**

WordStar Filters For The Z-100 And Z-100 PC
John F. Smith **51**

The Use Of Modules In Pascal
Paul W. Simmons **55**

TELLSTAR Window To The Universe
Ralph F. Rumpf **61**

Index of Advertisers

This index is provided as an additional service. The publisher does not assume any liability for errors or omissions.

21st Century Data, Inc. 66
Advanced Software Technologies 2,3
Analytical Products 43
Barry A. Watzman 68
Bersearch Information Services 16
CDR Systems, Inc. 37
Consumer Product Development 62
DelSoft 54
FBE Research, Inc. 47
FINA Software 63
Floppy Disk Services 6,7
Future Communications 47
International Computer Srvc, Inc. 63
Intersecting Concepts 36
KC Computers 64
M.E. Pittman 49
McGaffey Engineering 66
Paul F. Herman 43
Redwood Development 54
Ross Custom Electronics 26
S&K Technology 64
Secured Computer Systems, Inc. 48
Sextant Publishing Company 27
Software Toolworks 65
Software Wizardry 19
Systems Innovations Inc. 50
Veritechnology Electronics Corp. 17

On The Cover: *Soon to appear in our solar system will be Halley's Comet, which is the subject of this month's feature article on page 10. To view this phenomenon may we suggest the Model TL-400 Telescope available in the current Heathkit catalog.*

REMark®

$2.50

Volume 6, Issue 10 • October 1985

P/N 885-2069 Issue 69

Official magazine for users of HEATH ZENITH computer equipment.

Heath/Zenith Users' Group

Staff

Manager ..... Bob Ellerton
(616) 982-3867

Software Engineer ..... Pat Swayne
(616) 982-3463

Bulletin Board and
Software Developer ... Jim Buszkiewicz
(616) 982-3463

Software Coordinator ..... Nancy Strunk
(616) 982-3838

Secretary ..... Margaret Bacon
(616) 982-3463

Editorial and Advertising
Assistant ..... Lori Lerch
(616) 982-3794

Printers ..... Imperial Printing
St. Joseph, MI

	U.S. Domestic	APO/FPO & All Others
Initial	$20.00	$35.00*
Renewal	$17.00	$30.00*

* U.S. Funds

Limited back issues are available at $2.50, plus 10% shipping and handling — minimum $1.00 charge. Check HUG Product List for availability of bound volumes of past issues. Requests for magazines mailed to foreign countries should specify mailing method and appropriate added cost.

Send Payment to: Heath/Zenith Users' Group
Hilltop Road
St. Joseph, MI 49085
(616) 982-3463

Although it is a policy to check material placed in REMark for accuracy, HUG offers no warranty, either expressed or implied, and is not responsible for any losses due to the use of any material in this magazine.

Articles submitted by users and published in REMark, which describe hardware modifications, are not supported by Heathkit Electronic Centers or Heath Technical Consultation.

HUG is provided as a service to its members for the purpose of fostering the exchange of ideas to enhance their usage of Heath equipment. As such, little or no evaluation of the programs or products advertised in REMark, the Software Catalog, or other HUG publications is performed by Heath Company, in general and HUG, in particular. The prospective user is hereby put on notice that the programs may contain faults, the consequence of which Heath Company, in general and HUG, in particular cannot be held responsible. The prospective user is, by virtue of obtaining and using these programs, assuming full risk for all consequences.

REMark is a registered trademark of the Heath/Zenith Users' Group, St. Joseph, Michigan.

Copyright (C) 1985, Heath/Zenith Users' Group

REMark®

Buggin' HUG 7

MSWorks For The ZP-150
Bill Gates 9

Setting Up Your Systems — Part 1
William M. Adney 11

Double Format + Disk History + Disk/Drive Maintenance = Getting The Mo$t From Di$k Dollar$
Wallace M. Theodore 17

Loading ASM Subroutines Using MBASIC The Ultimate Method
M.D. Zapolski, Sr. 21

PC Emulator Scoreboard 24

SPREADSHEET Corner — Part 12
H.W. Bauman 25

HUG Price List 31

HUG New Products 32

Official magazine for users of HEATH ZENITH computer equipment.

Volume 6, Issue 10 • October 1985

The Past Revisited
Paul W. Simmons **37**

The Fourth Annual Heath/Zenith Users' Group Conference Review
Tom Huber **39**

Blood On The CPU
Peter Ruber **53**

Using The PeachText 5000 List Manager To Track Your Projects
Arnold R. Madeira **57**

Search For A Language Why I Chose Pascal
Leo R. Hansen **61**

A Winchester For The '89 — Part 1
Peter Ruber **67**

Computer Aided Dialing With A Z-100
Rich Hirsch **73**

Omnitrend's UNIVERSE
Haywood N. Nichols, Jr. **77**

COBOL Corner Special Announcement
..... **81**

Index of Advertisers

This index is provided as an additional service. The publisher does not assume any liability for errors or omissions.

21st Century Data, Inc. 69
AdminAid MicroSoftware 71
Advanced Software Technologies 3
Advent Products 6
Analytical Products 66
Barry Watzman 84
CDR Systems, Inc. 62
CHUGCON '85 54
Computer Information Limited 30
Consumer Product Development 50
DelSoft 20
ETTS, Incorporated 71
FBE Research Company, Inc. 72
FINA Software 24
First Capitol Computer 38
Future Communications 36
Intersecting Concepts 22
Jay Gold Software 72
Jerry A. Phelps 20
Lindley Systems 72
Magicland 10
McGaffey Engineering 10
NewLine Software 30
Paul F. Herman 66
Quest Computing 66
Redwood Development 36
S & K Technology 16,52
Seidl Computer Engineering 56
Software Toolworks 65
Systems Innovations 76
Veritechnology Electronics Corp. 2
Western Regional HUG Conference ... 83

On The Cover: *Charlie Powers with his dad, Phillip Powers, of Beavercreek, Ohio admire the HERO Jr. robot Charlie won at the Heath/Zenith Users' Group Conference Warm-up Friday night.*

REMark®

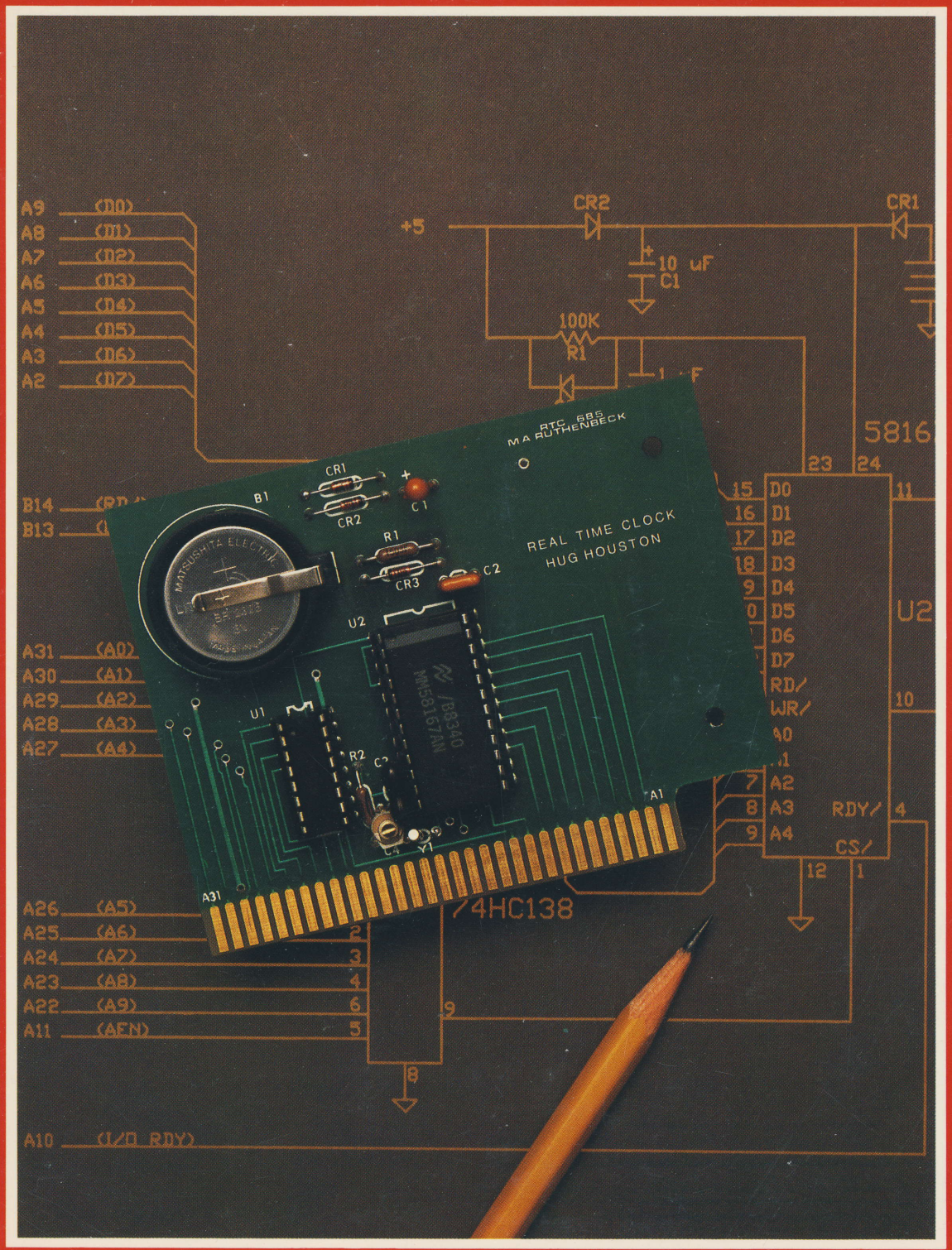
Volume 6, Issue 11 • November 1985
P/N 885-2070 Issue 70

Official magazine for users of HEATH ZENITH computer equipment.

$2.50

Real Time Clock

HUG Houston, See Page 57



Heath/Zenith Users' Group

Staff

Manager ..... Bob Ellerton
(616) 982-3867

Software Engineer ..... Pat Swayne
(616) 982-3463

Bulletin Board and
Software Developer ... Jim Buszkiewicz
(616) 982-3463

Software Coordinator ..... Nancy Strunk
(616) 982-3838

Secretary ..... Margaret Bacon
(616) 982-3463

Editorial and Advertising
Assistant ..... Lori Lerch
(616) 982-3794

Printers ..... Imperial Printing
St. Joseph, MI

	U.S. Domestic	APO/FPO & All Others
Initial	$20.00	$35.00*
Renewal	$17.00	$30.00*

* U.S. Funds

Limited back issues are available at $2.50, plus 10% shipping and handling — minimum $1.00 charge. Check HUG Product List for availability of bound volumes of past issues. Requests for magazines mailed to foreign countries should specify mailing method and appropriate added cost.

Send Payment to: Heath/Zenith Users' Group
Hilltop Road
St. Joseph, MI 49085
(616) 982-3463

Although it is a policy to check material placed in REMark for accuracy, HUG offers no warranty, either expressed or implied, and is not responsible for any losses due to the use of any material in this magazine.

Articles submitted by users and published in REMark, which describe hardware modifications, are not supported by Heathkit Electronic Centers or Heath Technical Consultation.

HUG is provided as a service to its members for the purpose of fostering the exchange of ideas to enhance their usage of Heath equipment. As such, little or no evaluation of the programs or products advertised in REMark, the Software Catalog, or other HUG publications is performed by Heath Company, in general and HUG, in particular. The prospective user is hereby put on notice that the programs may contain faults, the consequence of which Heath Company, in general and HUG, in particular cannot be held responsible. The prospective user is, by virtue of obtaining and using these programs, assuming full risk for all consequences.

REMark is a registered trademark of the Heath/Zenith Users' Group, St. Joseph, Michigan.

Copyright (C) 1985, Heath/Zenith Users' Group

REMark®

Buggin' HUG 7

Upgrade Your CP/M 2.2 With ZCPR3
A Z80-Based Command Processor
Rick Swenton 9

Installation Of ZCPR3
For Heath Computers
Richard P. Allen 15

Using The H-100 As A Time Machine (I)
Arnold W. Seibel 21

MUVIT
A BASIC Boost For Spreadsheets
Louis M. St.Martin 27

An Update Of CONDOR 3
Relational Database
Management System (rDBMS)
Richard L. Mueller, Ph.D. 35

ZPC Update #1
Pat Swayne 39

8 MHz 256K Update #2
Pat Swayne 40

Official magazine for users of HEATH ZENITH computer equipment.

Volume 6, Issue 11 • November 1985

HUG Price List 41

HUG New Products 42

Customizing MS-DOS WordStar Professional For The H-100 Computer
Frank T. Clark 47

Image Analysis With The Z-100
Lynn R. Jarvis 53

Real Time Clock
Mark A. Ruthenbeck 57

A Print Processor For Magic Wand
Randall Stokes 63

COBOL Corner XV
H. W. Bauman 69

The FORTRAN Formula-5
Dick Stanley 75

PC Emulator Scoreboard 80

Local HUG Clubs 81

Index of Advertisers

This index is provided as an additional service. The publisher does not assume any liability for errors or omissions.

21st Century Data, Inc. 14
Advanced Software Technologies 2,3
Analytical Products 38
CDR Systems, Inc. 26
Consumer Product Development 20
DelSoft 51
Diverse Systems 62
EDL Products & Services 73
FBE Research Company, Inc. 62
FINA Software 14
Future Communications 25
Gemini Tech 45
Generic Computer Products, Inc. 6,73
Paul F. Herman 80
Hilgraeve, Inc. 82
Intersecting Concepts 34
M.E. Pittman 51
McGaffey Engineering 56
Redwood Development 81
Ross Custom Electronics 62
S&K Technology 81
Secured Computer Systems 33
Software Toolworks 56
Studio Computers 46
Systems Innovations Inc. 8
UCI 52
Veritechnology Electronics Corp. 74
Barry Watzman 84

On The Cover: *The Real Time Clock circuit board from Heath Users' Group Houston. See how you can make one yourself. Article on Page 57.*

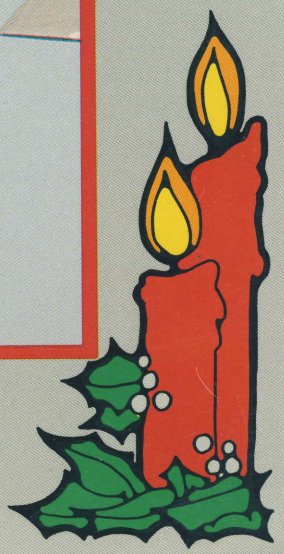
REMark®

Volume 6, Issue 12 • December 1985
P/N 885-2071 Issue 71

Official magazine for users of HEATH ZENITH computer equipment.

$2.50

Watch For The New Software Catalog Update



Heath/Zenith Users' Group

Staff

Manager ..... Bob Ellerton
(616) 982-3867

Software Engineer ..... Pat Swayne
(616) 982-3463

Bulletin Board and
Software Developer ... Jim Buszkiewicz
(616) 982-3463

Software Coordinator ..... Nancy Strunk
(616) 982-3838

Secretary ..... Margaret Bacon
(616) 982-3463

Editorial and Advertising
Assistant ..... Lori Lerch
(616) 982-3794

Printers ..... Imperial Printing
St. Joseph, MI

	U.S. Domestic	APO/FPO & All Others
Initial	$20.00	$35.00*
Renewal	$17.00	$30.00*

* U.S. Funds

Limited back issues are available at $2.50, plus 10% shipping and handling — minimum $1.00 charge. Check HUG Product List for availability of bound volumes of past issues. Requests for magazines mailed to foreign countries should specify mailing method and appropriate added cost.

Send Payment to: Heath/Zenith Users' Group
Hilltop Road
St. Joseph, MI 49085
(616) 982-3463

Although it is a policy to check material placed in REMark for accuracy, HUG offers no warranty, either expressed or implied, and is not responsible for any losses due to the use of any material in this magazine.

Articles submitted by users and published in REMark, which describe hardware modifications, are not supported by Heathkit Electronic Centers or Heath Technical Consultation.

HUG is provided as a service to its members for the purpose of fostering the exchange of ideas to enhance their usage of Heath equipment. As such, little or no evaluation of the programs or products advertised in REMark, the Software Catalog, or other HUG publications is performed by Heath Company, in general and HUG, in particular. The prospective user is hereby put on notice that the programs may contain faults, the consequence of which Heath Company, in general and HUG, in particular cannot be held responsible. The prospective user is, by virtue of obtaining and using these programs, assuming full risk for all consequences.

REMark is a registered trademark of the Heath/Zenith Users' Group, St. Joseph, Michigan.

Copyright (C) 1985, Heath/Zenith Users' Group

REMark®

Buggin' HUG 7

Using The H-100 As A Time Machine — Part II
Arnold W. Seibel 11

System Log For The H/Z-100
Robert S. Hudson 15

ZPC Update #2
Pat Swayne 19

PIE/Text To PeachText File Conversion
J. D. Ross 25

ZDUMP: Full Screen Disk/Memory Utility
Paul W. Franchina 27

Setting Up Your System — Part 2
William M. Adney 31

Toward Fatherhood In The 21st Century
Alan Neibauer 37

HUG Price List 41

Official magazine for users of HEATH ZENITH computer equipment.

Volume 6, Issue 12 • December 1985

HUG New Products 42

Strictly Begginers: A Review Of The Heathkit HF-148 Personal Computer
Bob Ellerton 45

Automatic Ramdrive Utilities
Joseph Hebda 49

MORTGAGE.BAS
Bob Moskus 53

Mighty Mini RTTY
Ray Isenson 57

Setting The Attributes Of Your Console And Printer
William Pierpoint 61

TRACON: Air Traffic Control Simulation For The Z-150
Hans-Joachim Krenz 67

P-PRO 4 Revisited
S. Edward Weidner 71

Poor Man's Tektronix Graphics
Jon Lee 73

Index of Advertisers

This index is provided as an additional service. The publisher does not assume any liability for errors or omissions.

21st Century Data, Inc. 24
Advanced Software Technologies 2,3
Analytical Products 33
Aspen Systems 55
Bersearch Information Services 18
Borland International 28
CDR Systems, Inc. 56
William N. Campbell 55
Consumer Product Development 30
Diverse Systems 39
EDL Products & Services 30
ETTS, Inc. 69
FBE Research Company, Inc. 24
FINA Software 26
Future Communications 36
Heath Company 75
Paul F. Herman 51
Hilgraeve, Inc. 79
Intersecting Concepts 38
Jay Gold Software 44
Ken's Custom Bookbinding 10
M.E. Pittman 66
Micro Interfaces Corporation 69
NORCOM 65
Quest Computing 39
Redwood Development 55
S&K Technology 52
Secured Computer Systems 65
Seidel Computer Engineering 51
SigmaSoft & Systems 6
Software Toolworks 10
Software Wizardry 40
UCI 70
Veritechnology Electronics Corp. 48
Barry Watzman 52,84

On The Cover: *Pictured is an HF-148. A simple beginner's kit version of this model is available in the Heathkit Catalog. See review on Page 45 by Bob Ellerton, HUG Manager.*