COMPUTER UPDATE

Happy 10th Birthday B.C.S.

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On the cover
Now ten years old, the BCS says Happy Birthday to itself. Brenda Bredvik of Doliber Skeffington Design has translated our lighthearted wishes into a cheerful and colorful birthday cake, complete with fun decorations. In addition to the cover, the corresponding section dividers in this special issue are also her design.

COMPUTER UPDATE

The People Who Make It Happen: BCS Activists

Gerry Abrams, Robert Adkins, Eric Albert, Marc Allen, Catherine Alvarez, Richard Anders, Lindsay Anderson, Beth Andrus, Leonard Ansin, Roy Antetomaso, Anthony Arcidi, Dick Arscott , Sheila Attig, John Bain, James Baker, Torn Baker, Ellen Balber, Michael Bartell, Michael Bate, Jane Baum, George Beach, Michael Beaudoin, Gerald Belastock, Gwen Bell, Frank Bell, Cathy Betz, Art Bevilacqua, Carl Binder, Harvey Bingham, Alison Birch, Eric Blasenheim, David Blocker, Rich Bloom, Chris Bohner, John Bonavia, Kent Borg, Susan Borghaus, Carol Bornheimer, Mark Bornstein, Charles Bosomworth, John Bottoms, Art Bragg, Ira Braus, Daniel Bricklin, Robert W. 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BCS USER GROUP DIRECTORS: Apple/Boston: Richard Bloom; **Artificial Intelligence:** Park Gerald; **Atari:** John Faber, Alan Glick; **Business:** Les Squires; **Commodore:** Barbara Mintz; **CAP (Computer-Aided Publishing):** Brian Skidmore; **Consultants & Entrepreneurs:** John Sturm; **CP/M Computers:** Jay Sage; **Database:** Bert Collins; **Digital:** Mark Bornstein, David Strickler; **Disabled/Special Needs:** Arthur Wood; **Education:** Janet Gould; **80/Boston:** Rick Mangekian; **Graphics:** Cathy Betz, Jack Nolan; **Heath/Zenith:** Al Spenser; **Hewlett-Packard:** Roland Jahn; **IBM PC:** Mike Rohrbach; Vince Gale; **Investment:** John Salsgiver; **Kaypro:** Lee Lockwood, Bob Waters; **Lap Computers:** Bill Gerber; **Legal:** Richard Anders, Michael Lytton; **Logo:** Nola Sheffer; **Lotus:** Allen Moulton; **Macintosh:** Robert Hafer, Jack Hodgson, Rebecca Waring; **Medical/Dental:** Donald Sherman; **NEC:** Peter Van Ness; **Networking/Multi-User:** Russell Frye; **Osborne:** John DeMeritt; **Otrona:** Avram Tetewsky; **Real Estate:** Doug Wales; **Science/Engineering:** Charles Bosomworth; **Sinclair/Timex:** John Kemeny; **Social Impact:** EMarie Pope; **Telecommunications:** Dick ten Eyck; **Texas Instruments 9914A:** Peter Hoddie, Justin Dowling; **Texas Instruments Pro Series:** Ellen Balber; **Training & Documentation:** Judy Housman; **Victor:** Mark (Huck) Finn, Charles Grammer; **Wang:** Daniel Crawford.

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BCS NEWSLETTER EDITORS: Amiga, Culture: Harvey Bingham; **Apple II:** Brigite Grossman; **Artificial Intelligence:** Park Gerald; **Atari ST:** Allan Glick; **Atari 8-Bit:** Mark Dulcey; **Business:** Les Squires; **"re:CAP" (Computer-Aided Publishing):** Brian Skidmore; "**Sprite**" (**Commodore**): Marty Jukovski; **"MicroEconomics"** (**Consultants and Entrepreneurs**): John Sturm; **CP/M BIOS:** Sheila Attig; **Database:** Beth Katcher; **Digital:** David Strickler; **Disabled/Special Needs:** Catherine Alvarez; **Education:** Janet Gould; **Graphics:** Jack Nolan; **"PC Report" (IBM):** Art Bevilacqua; **Investment:** Dave English; **"The Boston Kugel" (Kaypro):** Karen Rockow, **"Lap Gazette" (Lap computers):** Larry Gensch; "Bits **and Briefs" (Legal):** Rich Anders; **Polyspiral (Logo):** Alison Birch; **Lotus:** Sharon Caley; **"The Active Window" (Macintosh):** Becky Waring, Robert Hafer; **Medical/Dental:** Matthew Gold; **"Command Line" (NEC):** Rob McKean; **"Optical Insights" (CD-ROM):** Larry Gussin; **Osborne:** John DeMeritt; **Otrona:** Avram Tetewsky; **Sinclair:** Will Stackman; **Social Impact:** Seth Itzkan; **TI 99/4A:** Justin Dowling; **TI Pro:** Ellen Bobber; **80/Boston:** Kenyon Karl; **Wang:** Dan Crawford.

INTERNAL SERVICE GROUP DIRECTORS: Member Services Committee Chair: Peg LeGendre; **Member Services Conference:** Ben Calica, Vince Gale, Park Gerald, Alan Glick, Robert Hafer, Jack Hodgson, Peter Miller, Barbara Mintz, Nola Sheffer, Will Stackman, Les Squires; **Newsletters:** Brian Skidmore, **Public-Domain Software:** Rob Hafer, Doug Chamberlin.

◨◩◧◪ The Boston Computer Society

Membership Application

1 Name _____

Address

City _____ State _____ Zip _____

Daytime Telephone _____

2 Please enroll me as a Boston Computer Society member:
- ❏ Regular (1 year), $35
- ❏ Regular (2 year), $65
- ❏ Regular (3 year), $95
- ❏ Student (full time), $28
- ❏ Youth (under 18), $24
- ❏ Senior citizen, $24
- ❏ Associate (outside New England only), $28
- ❏ Family, $52
- ❏ Overseas, $70
- ❏ Sustaining, $100
- ❏ Institutional, $100
- ❏ Corporate, $300
- ❏ Lifetime, $2500

3 Sign me up for these BCS newsletters (two are included free of charge in your basic membership; additional ones are $4 each per year):
- ❏ *Amiga Culture* for Amiga Users
- ❏ *ApplePress* for Apple II users
- ❏ *A-Bug* for Atari 8-bit users
- ❏ *J-Bug* for Atari ST users
- ❏ *Sprite—The Commodore Newsletter*
- ❏ *CP/M Bios* newsletter for CP/M users
- ❏ *Digital PC Newsletter* for DEC Rainbow users
- ❏ *PC Report* for IBM PC and MS-DOS users
- O *The Boston Kugel* for Kaypro users
- ❏ *Lap* Gazette newsletter for lap computer users
- ❏ *The Active Window* for Macintosh users
- ❏ *CommandLine* journal for NEC users
- ❏ *BO-AUG* newsletter for Otrona/Attache users
- ❏ *Osborne Group Newsletter* for Osborne users
- ❏ *Sinclair-Timex Newsletter* for Sinclair and Timex users
- ❏ *BCS 99er* for Thxas Instruments 99/4a users
- ❏ *The Pro Line* for 'Micas Instruments Pro users
- ❏ *80/Boston* newsletter for TRS-80 computer users
- ❏ *Bug Report* for Victor V9000 users
- ❏ *Wang Info Exchange*

- ❏ *The BCS Artificial Intelligence Newsletter*
- ❏ *BCSTD* training and documentation newsletter
- ❏ *Bits and Briefs* newsletter for the legal interest group
- ❏ CD-ROM Optical Insights
- ❏ *The* Database *Newsletter* for database users
- ❏ *D-SNUG* the newsletter for disabled/special needs users
- ❏ *Education News* for teachers/education interest group
- ❏ *Graphics News* for the computer graphics interest group
- ❏ *HealthComp* for the medical/dental interest group
- ❏ *Impact* newsletter for the social impact group
- ❏ *Investment Newsletter* for investors
- ❏ *The* Lotus *Newsletter* for Lotus software users
- ❏ *MicroEconomics* newsletter for consultants and entrepreneurs
- ❏ *Online Connection* newsletter for the telecommunications group
- ❏ *PolySpiral* newsletter for Logo users
- ❏ *Real Estate* newsletter for the real estate group
- ❏ *re:CAP* the publishing/computer-aided publishing newsletter

- ❏ First-class mailing of Calendar (otherwise sent bulk rate)
- O Other _____

4 Membership fee (from item 2)

Additional newsletters from item 3 (two are included in your membership fee): **extra news-**letters at $4 each per year

Total amount enclosed _____

5 Payment
- ❏ Check enclosed
- ❏ MasterCard
- ❏ VISA

Credit card no. _____

Expiration date _____

Signature _____

6 ❏ Check here if you do not wish to receive occasional promotional mail from personal computer companies.

Note: 10 % of dues is designated for subscription to *Computer Update* magazine.

| CU |

Return to: The Boston Computer Society
One Center Plaza, Boston, Massachusetts 02108

0th Birthday Wishes

Thanks for the memories.

Tén years ago two truly significant events occurred. The birth of Apple Computer. And the birth of the Boston Computer Society.

Our mission was to harness technology and fashion a personal computer that would revolutionize the way we think, work, and live. Yours was to discover and fulfill the promise of this marvelous device.

Since 1977, you've done just that. By discovering how Apple computers could illuminate the lives of people all over the world. From the earliest Apple® II to the latest MacintoshTM

We look forward to continuing this unique dialogue. To strengthening the bonds of our special relationship. To working with you to make our vision a reality for years to come.

Thanks again for taking that first step with us. And for matching our pace as we learned to run.

To the 3 people
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IBM®
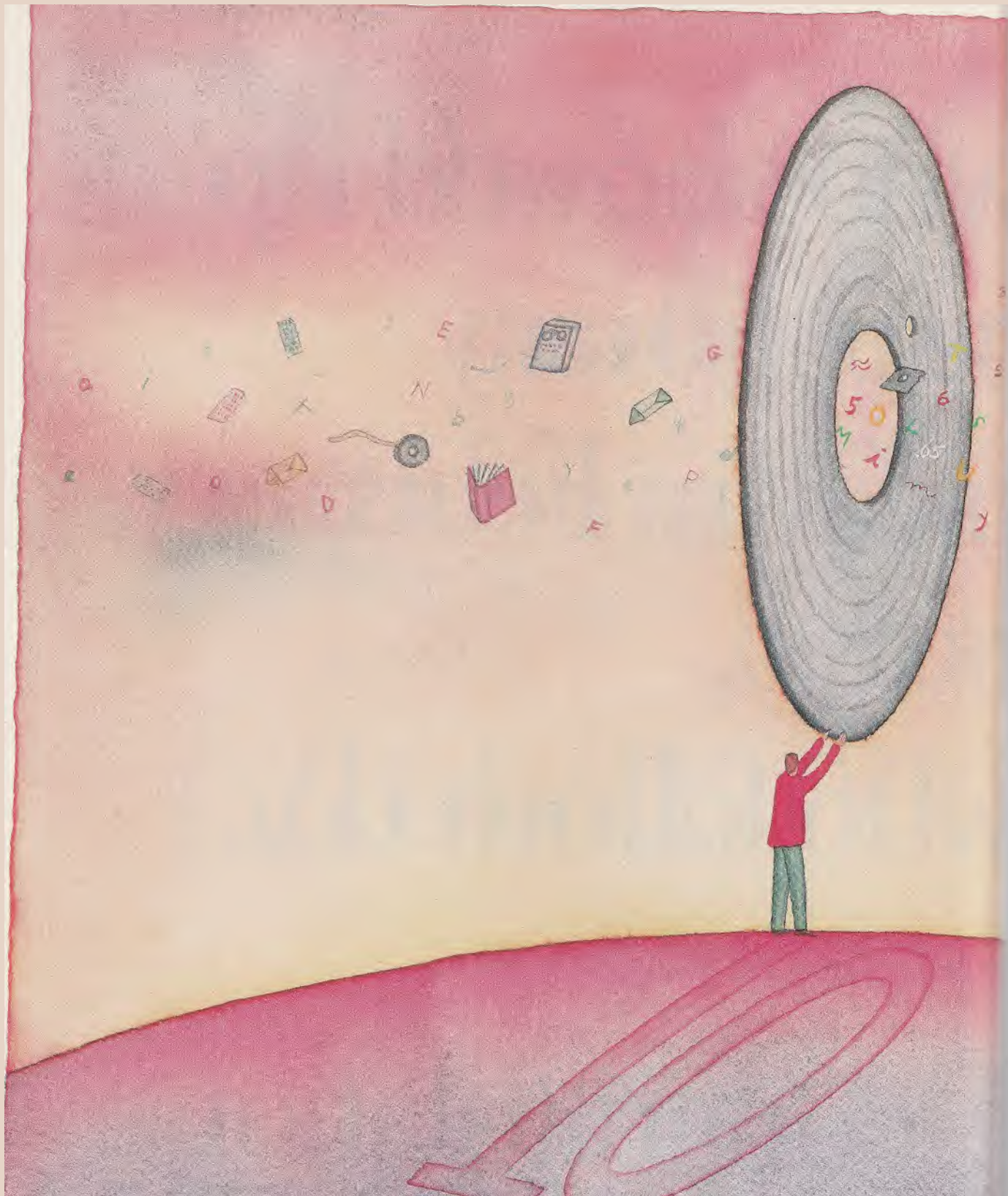
illustration by Lonni Sue Johnson

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happy
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from the people at
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Dedication

323
PEOPLE WHO MADE THE BCS

This month, The Boston Computer Society is ten years old.

From a tiny get-together of four people in a high school library in February 1977 to an international organization with over 23,000 members today, the BCS has grown in ways that no one could have ever dreamed.

On our tenth birthday, we are dedicating this special issue of Computer Update to a group of 323 extraordinary people. These are the people who really made the BCS into the organization it is today.

All of them are members who volunteered to help out the BCS. Whether they planned to or not, they ended up making invaluable contributions. All of them, at one time or another, perceived a new service or aspect of the organization that they felt was missing from the BCS. Rather than just complain or make idle suggestions, they stepped forward and got involved.

Telling the story of their contributions really tells the history of the BCS itself. For every step forward the BCS has taken as an organization, there was always a member who had an idea and a willingness to carry it out. Each idea gave a new bit of life to the BCS.

It is with great pride that we dedicate this tenth birthday issue of Computer Update to 323 very special people. Their creativity, hard work, devotion, and commitment to excellence have left a legacy.

Jonathan Rotenberg

Note: If I have left anyone out, please let me know! I apologize, and I promise I'll make it up to you.

1977

Richard Gardner cofounded the BCS and chaired its first five General Meetings.

Don Bradley was the BCS's first active volunteer. A constant source of moral support during difficult times, he was always there to help plan and set up meetings.

1978

Tim Quinlan got involved and quickly took on the job of show coordinator for Home/Business Computers '78, a major milestone in the Society's early history. After making the show into a big success, Tim became the BCS's first treasurer, and later its first vice president.

Fred Guidry, a very talented writer for the Christian *Science* Monitor, launched Computer Update (then called *The* BCS Update) as its first editor.

Larry Woods was the Update's first contributing writer. He became well known for his probing, in-depth feature articles.

George Clisham first ran a seminar on structured programming at a special general meeting in December, and later joined the Board of Directors to help provide support to BCS user groups. He also wrote often for the Update.

Jim Yost also ran a special session at the December meeting: our very first user group meeting. He later became codirector of the Commodore PET User Group, our first user group.

1979

Russ Walter helped produce The BCS Update, and later went on to help start the BCS's second user group: 80/Boston, for Radio Shack TRS-80 users.

Dick McKnight helped launch the PET User Group and became its codirector.

Robert Ramsdell volunteered to take over as treasurer of the BCS. He also became actively involved in helping to promote and distribute our first book, The First New *England* Microcomputer Resource Handbook.

Larry Woods | Russ Walter | Rev. Walter Pragnell | Bonnie Turrentine
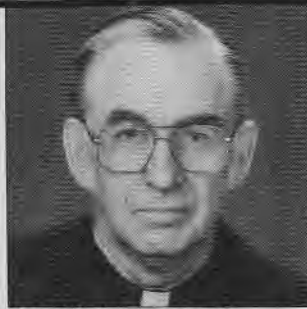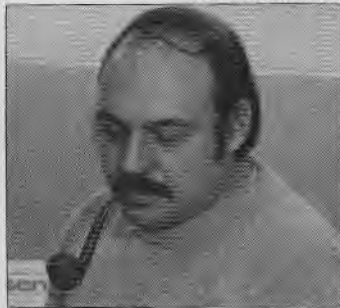
Tracy Licklider | Sonny Tarbi | Gary Haffer
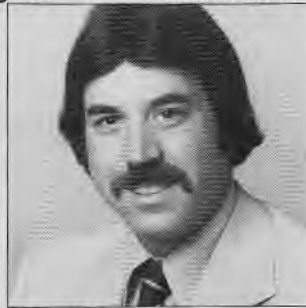
He went on to help start Apple/Boston, our Apple user group, as well as the group's public-domain software library and its Applefest '81 exhibition.

Joe Wiellette donated countless hours as production manager for Update. He typeset all of the articles and printed the newsletter on a small printing press in his basement.

The Rev. Walter Pragnell got involved in Update and became one of its most prolific contributors.

Jack Star started the BCS's OSI user Group and also became a regular contributor to Update.

Bonnie Turrentine first got involved in the PET Group, and later joined the Board of Directors as membership chair. She went on to help start the Education Group.

Adam Sonnenschein, then an attorney with Haussermann, Davison & Shattuck, volunteered to be the BCS's pro bono legal counsel and to help incorporate the Society as a nonprofit, educational corporation. He is still active as counsel to the BCS today, and serves on the Board's Development Committee.

Ricardo Cabezas got involved in a number of projects, including being circulation manager for the Update and meeting coordinator for the General Meetings.

Tracy Licklider volunteered to be the editor of our first user group newsletter: 80/Boston News. He later became director of the 80/Boston group, then joined the Board of Directors and became vice president of the BCS. He has been involved in numerous BCS projects ever since, including Computer Discovery Center, Computer Update, and the Finance Committee.

Roger Alan Jones got involved as a photographer, then as a reporter, and eventually as an editor of Computer Update. A brilliant writer and artist, Roger was probably our most courageous volunteer. He had been battling a terminal disease for many years and, sadly, we lost him in the summer of 1980.

Bob Soron got involved in the Update and soon became its assistant editor.

Len Magerman took over as director of the OSI Group and ran it for several years until OSI disappeared into computer orphandom.

Beardsley Ruml started the Pascal Group, the BCS's first software user group.

Gary Saxton started the North Star Group and was its director until it merged with the Xerox and CP/M Groups.

1980

Sonny Tarbi took over the typesetting and production of the Update and did most of its photograhy as well. Active in many projects, he also became director of the 80/Boston Group.

Gary Haffer helped launch Apple/Boston and became its codirector.

Allen Sneider also helped start Apple/Boston and was a codirector. He went on to join the BCS Board and became our treasurer. He helped us find our first office space in Three Center Plaza, and later founded the Business Group and the Family Home User Group.

Beth Lowd helped start the Education Group, the BCS's first special interest group. She was the group's codirector for several years.

Ted Blank first got involved as a contributing editor to Computer Update and then started the Robotics Group and became director and newsletter editor for the group.

George Blank started the Atari User Group and was its first director.

Rick Kane launched the Source/Micronet User Group, which eventually evolved into today's Telecommunications Group.

Steve Bayle became treasurer and joined the BCS Board to bring us his expertise in fundraising and nonprofit management.

Cary Lu became a regular contributor to Computer Update and, several years later, became active in the Macintosh Group.

Dan Bricklin joined the Board of Directors and has been active ever since in membership development and various special projects, including a brief stint as codirector of the Business Group.

Andy Cahners became actively involved in the business side of Computer Update. He made enormous contributions to developing advertising sales and circulation. He soon joined the Board of Directors and became publisher of the Update. Tragically, his grand vision for the magazine was never fully realized; he

Allen Sneider   Cary Lu   Dan Bricklin   Harris Luscomb

Lee Doliber   Lyn Skeffington   John Sturm

passed away in 1981.

Harris Luscomb took on the Herculean task of filing the BCS's "Application for Recognition of Exemption" and spending numerous hours with the IRS trying to persuade them to accept us. He later joined the BCS Board and today serves as our general counsel.

Marjorie Elias created our original Resource Center in Three Center Plaza. She soon joined the. Board of Directors and launched our first clinics and seminars.

Steve Weiner got involved in the BCS and continues to serve as our counsel on insurance matters.

1981

Sue Gladstone became circulation manager of Computer Update and worked to get it on newsstands throughout the United States.

Wendy Quinones became one of Computer Update's most famous contributing editors.

Lee Doliber and Lyn Skeffington designed the well-known BCS cursor button logo and have developed the entire BCS graphical identity system ever since.

Sheldon Buck took over as director of the Atari User Group.

John Sturm first got involved as an office volunteer and soon started one of our first educational programs, the Word Processing Clinic. He went on to launch one of the BCS's most successful groups, the Consultants & Entrepreneurs Group.

George Dillon became the chief cover photographer for Computer Update, giving a whole new look to the magazine.

Tom Lindsley and Jeff Wheaton started the Resource Center Beginner's Clinic, a program on Saturday mornings to introduce beginners to personal computers. Tom went on to become a director of the Xerox Group and the Investment Group.

Arnetha Haynes became codirector of the OSI User Group.

Paul McGarry started the Resource Center Hardware Clinic, our first educational program for advanced users.

John Thibodeau got involved as associate director of Apple/Boston and later became director of the group.

Dennis Ehn became codirector of the Pascal Group and, eventually, its director.

Sue Mahoney launched the Sinclair/Timex User Group and served as its director for several years.

Stewart Alsop II joined the BCS Board to develop its publications. He soon became involved nearly fulltime as editor of Computer Update. Before moving to the West Coast, Stewart also served as chairman of the Board of the BCS.

Mitch Kapor joined the BCS Board to lend his business savvy to building the BCS.

1982

John Maglio and Kittredge Cary watched the introduction of a new personal computer and, in January, decided to start a user group for it in the BCS: the IBM PC Group. This group would grow to become the largest in the history of the BCS.

Steve Keese and Art Capstaff launched the Osborne User Group.

Mike Rohrbach became codirector of the IBM User Group, and soon became its chief leader, visionary, and builder. Under his guidance, the group became the first ever to break 10,000 members.

Nola Sheffer and Jeanette Taylor helped start the Logo User Group and became its codirectors. Today, Nola also serves on the Member Services Committee.

Jerry Puzo launched PolySpiral, the Logo User Group newsletter.

Claude Comeau became involved in developing and ultimately running the Beginners Clinic program, as well as the operations of the Consultants & Entrepreneurs Group.

Robert Brown, serving as program chairman, was one of the first active volunteers in the IBM PC Group. He later became active in forming the Member Services Steering Committee, in developing the BCS's community outreach program, and in starting the very successful MS-DOS seminar.

Jack Pearson, at the group's third meeting, started the IBM PC Technical Group, the first special group in the BCS for advanced users and programmers.

Beverly Rhinesmith helped start PC Report, the newsletter of the IBM Group, and served as its first editor. The newsletter would grow to become

John Thibodeau   Mitch Kapor   Steve Keese   Art Capstaff

Mike Rohrbach   Claude Comeau   Adeline Naiman

the largest BCS publication ever.

Barbara Lee Chertok and Howard Karten served as the first managing editors of PC Report and helped to establish the newsletter's format and many of its regular features.

Jim Zien, a professional museum planner, walked into the BCS office one day with an ambitious concept for a public center that could demystify personal computers. He worked for several years with other members and refined the concept for Computer Discovery Center, which the BCS plans to open in late 1987.

Bill Claff became involved as a chief resource person for the IBM User Group and later took over as director of the IBM Technical Group.

Carlos Christenson took over as director of the North Star Group.

Bob Tap became director of the Xerox-CP/M User Group, which eventually merged with the North Star Group to become the CP/M User Group.

Jim Byram got involved as publicist for the North Star Group, and later became director of the CP/M Group.

Art Bevilacqua started the now famous IBM User Group Software Exchange. He went on to become editor of PC Report, which he still runs today.

Cliff Danielson launched the Sinclair/Timex newsletter and served as its first editor. He also served as public-domain software coordinator for the Digital Equipment Group.

Fred Miller started the Displaywriter User Group, the BCS's first user group for a minicomputer.

Alex Tekeian got involved in helping develop the BCS's financial systems and became our first controller.

Adeline Naiman became a regular contributor to Computer Update. Her column, "The Learning Curve," is widely read today, and she also serves as an advisor to Computer Discovery Center.

Adam Green founded the Database User Group.

Richard Boehmer started the Research User Group, which eventually became today's Science and Engineering Group.

Jan Hackman and Jim Heiman launched the Investment Group, our first application-specific special interest group.

Mark Levine launched A-Bug, the Atari User Group newsletter and served as its editor for several years.

John Faber got involved in the Atari Group as co-editor of A-Bug and eventually became director of the group, which he continues today.

Bob Moores volunteered as production manager for A-Bug and served the newsletter for several years.

Ken Pugh started the very first BCS electronic bulletin board.

1983

Ian Wells first got involved by writing an essay on software piracy for Computer Update. Today, he is actively involved in the Social Impact Group.

Richard Anders became an editor of the Consultants & Entrepreneurs

newsletter, MicroEconomics, and went on to become a director of the Legal Group.

Greg Del Sesto helped in the operations of the Consultants & Entrepreneurs Group and started its Business Law subgroup.

Lynne and Ken Ford became production managers for the IBM PC Report and worked late for many weekends to develop PC Report into a major publication.

Marie Deame was the IBM Group's first membership coordinator.

Stevanne Lehrman started the IBM Group's PC Resource Library.

Robert Chapman Wood began writing for Computer Update and became involved in the development of the IBM Group.

Jack Rochester became a contributing writer for Computer Update and has become a regular contributor.

Howard White started the IBM Group's DOS subgroup and has been active in this group and in teaching IBM seminars ever since.

Terry Catchpole became publisher of Computer Update and went on to join the BCS Board of Directors and launch the BCS Book Project.

Brian Camenker began writing for PC Report and eventually became program chairman for the IBM Group.

Bert Collins got involved as the IBM Group's database subgroup organizer and eventually became director of the Database User Group.

Arthur Nelson became actively involved in advising and developing the Computer Discovery Center project. He later joined the Board of
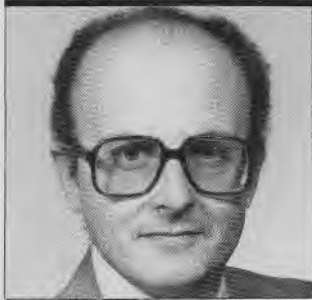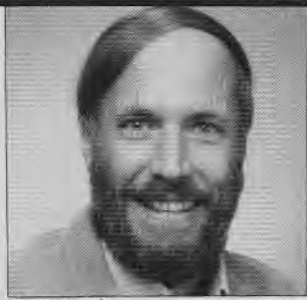
Jim Heiman Ken Pugh Ken Ford Terry Catchpole

Arthur Nelson Peter Rousmaniere Vince Gale

Directors and became chairman of the Public Services Committee.

Kevin McDonagh became business manager for the Atari User Group.

Steve Stadler joined Computer Discovery Center's Finance and Development Committee and became director of its development. Today, he serves as a BCS Board member and as chairman of the Development Committee.

Les Squires got involved as an editor of MicroEconomics, the Consultants & Entrepreneurs newsletter and then started the Training & Documentation Group and its newsletter. He went on to launch the BCS seminar program, to start advanced database seminars, and has recently begun to reform the Business User Group as its new director. He also serves on the Member Services Committee.

John Xenakis became a contributing writer for Computer Update and later became its first software editor.

Jeff Goldberg became director of the Atari User Group.

Buchanan Ewing started the business planning subgroup of the Consultants & Entrepreneurs Group and continues to run it today.

Peter Rousmaniere became involved as a voluntary finance and management consultant to the BCS. He later joined the Board of Directors, helped to reorganize our membership processing and accounting, and became vice president of the BCS and chairman of the Finance Committee.

Karl Rosenberger started the Digital Equipment Group and served as its first director.

Vince Gale became advertising

sales manager for the IBM Group's PC Report. He went on to get involved in numerous other activities: setting up the IBM Group's Operations Team, joining the BCS Board of Directors, joining the Member Services Committee, taking over fulfillment of IBM public-domain software, helping to establish budgeting procedures for user groups, and joining the Board's Real Estate Committee.

Donald Sherman started the Medical/Dental Group and the Medical/Dental newsletter and continues today to serve as the Group's director.

Frank Gallo launched the Social Impact Group and served as its first director.

Jack Hodgson got involved in the Sinclair/Timex Group and became editor of its newsletter. He went on to found the Macintosh Group and to become the BCS director of member services. Today, he also serves on the Member Services Committee and runs the Macintosh seminar series.

Doug Chamberlin began the graphics and Pascal subgroups within the IBM Group and later took over and built the IBM Software Exchange. He went on to launch BCSNet, the Society's first multi-user electronic information service.

Harry Steele started the Atari Group's public-domain software library and went on to start its electronic bulletin board as well.

Jack Sullivan started the Business Resource Exchange within the Consultants & Entrepreneurs Group and later became director of the Telecommunications Group. He also served on

the Member Services Council Steering Committee and started the Telecommunications bulletin board.

Peter Miller became actively involved in the Consultants & Entrepreneurs Group and went on to organize and chair the Member Services Steering Committee. He later joined the BCS Board and currently serves on the Finance Committee, Member Services Committee, and Tenth Anniversary Committee.

Will Stackman got involved in the Sinclair/Timex newsletter and continues to be involved in Sinclair/Timex activities, in the Commodore Group's public-domain software library, in the Logo Group, and as a member of the Member Services Committee.

Harry Snyder started the Providence, Rhode Island, satellite of the IBM User Group, the first regional satellite meeting in the history of the BCS. Harry continues to run this very successful satellite group today.

Janet Cameron Barron started the Word Processing subgroup in the IBM User Group.

Lee Lockwood and **Bob Waters** started a Kaypro subgroup within the Osborne User Group and eventually established it as a full user group.

Mike Handa helped start the Victor User Group and served as its first director.

Cynthia Harriman started the Portsmouth, New Hampshire, satellite of the IBM User Group and later formed a Portsmouth Macintosh satellite as well. She also started the enormously successful Summer Computer

Glenn Meader

Bob Lepkowski

Peter Miller

Carole Bellew Bornheimer

Park Gerald
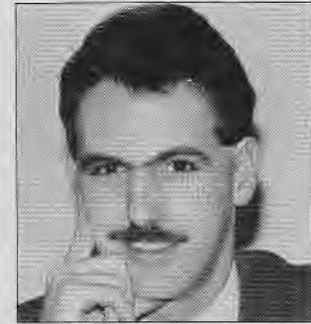
Scott Mize

Institute, which became an official program of the BCS in 1986.

Steve Stone started the PC-compatibles group within the IBM Group.

Bob Schledwitz started the Texas Instruments Group and served as its first director. He was also the first secretary of the Member Services Council Steering Committee.

Avram Tetewsky started the Otrona User Group and continues to serve as its director and editor and as an active volunteer in the IBM Group.

Simon Fowler launched the Hewlett-Packard User Group.

Glenn Meader took over as director of the Telecommunications Group and started the Telecommunications Clinic.

Hal Messinger started the Medical/Dental Group newsletter.

David Margolis started the Portland, Maine, satellite of the IBM User Group.

Jon Zonderman became a regular contributor to Computer Update.

Susan Anderson and **Marty McGowan** started the Spreadsheet subgroup within the IBM Group.

Bob Lepkowski got involved in the Consultants & Entrepreneurs Group and later joined the Member Services Steering Committee and took over leadership of the Beginners Clinic.

1984

Pam Roth started the Legal Group, and eventually became actively involved in the Consultants & En-

trepreneurs and Macintosh groups as well.

Ralph Mednick volunteered as the first special interest group coordinator for the IBM Group.

Brian Skidmore got involved in several roles in the Consultants & Entrepreneurs Group and the Macintosh Group, and later founded the Computer-Aided Publishing Group and its re:CAP newsletter.

Charlie Bowen started the Kaypro User Group software library.

Bob Voke launched the Artificial Intelligence Group and served as its first director.

Steve Debler became director of the Database Group.

John McHugh started the IBM Group's Nashua, New Hampshire satellite, which he still runs today.

Karen Rockow began The Boston Kugel, the Kaypro newsletter, and still serves as its editor today.

Richard Rohrdanz started the first electronic bulletin board for a user group: the IBM Bulletin Board.

George Dixon became codirector of the Digital Group.

Scott Mize launched the Unix & C Group and served as its director until it merged with the Pascal Group to become the Programming Languages Group.

Rod LaFond served as director of the Commodore User Group.

Carole Bellew Bornheimer became the first treasurer of the IBM Group and continues to hold this responsibility today.

Ray Greenall started the University of Rhode Island satellite of the IBM

User Group.

Matt Gold began writing for Healthcomp, the Medical/Dental newsletter and later became its editor.

Jeff Kane started the Amherst satellite of the IBM User Group.

Chris Weaver got involved as the facilities coordinator for the IBM Group.

Jack Nolan launched the BCS's (and the world's) first Graphics User Group.

Mitch Trachtenberg launched the newsletter of the new Macintosh Group and served as its first editor.

Steve Garfield and **Eric Houston** got involved as meeting coordinators for the Macintosh group. Both continue today to be active leaders in the group.

Park Gerald first got involved in the IBM Group and went on to become director of the Artificial Intelligence Group. Today, he continues to run the AI Group and edit its newsletter. He also serves on the BCS Board of Directors, the Finance Committee, the Member Services Committee, and the Tenth Anniversary Committee.

William Rudow became codirector of the Robotics Group.

Robert Hafer became codirector of the Macintosh Group and helped organize its now renowned public-domain software collection.

Roland Jahn became codirector of the Hewlett-Packard Group and continues to run the group today.

Dick McQuillan first got involved as calendar coordinator for the IBM Group and eventually took over the entire production responsibility for

Peg LeGendre · Gwen Bell · Rob McKean · Rick Mangekian · Doug Roberts · Gladys Monroe
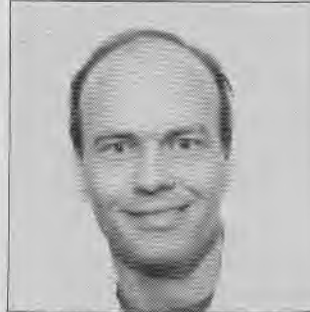
PC Report.

Alan Freedman began writing his popular column "Straight Talk" for Computer Update.

Mark Williams started the Integrated Software Clinic.

Dick Herzfeld, our first public relations advisor, arranged for Newsome & Company to become our pro bono public relations firm.

John DeBay started the PCjr subgroup within the IBM Group.

Kathi Kelly got involved in the Member Services Council and went on to help start the Database Management seminars.

Mark Zesersen and **Jean O'Brien** got involved in the IBM Group to help organize its membership coordination function.

Ann Dextrase started the Heath/Zenith Group and served as its first director.

Gail Farrell and **Seth Newman** contributed enormous amounts of time working on public relations projects for the BCS.

Peter Van Ness started the NEC User Group and continues today as its director. He served on the Member Services Council Steering Committee.

Robert McKean launched the NEC Group's CommandLine newsletter and continues today as its editor, as well as a contributor to other BCS newsletters.

Susan Cohn became design director of CommandLine and set a new standard of aesthetic grace for BCS newsletters.

Peg LeGendre became director of the Osborne User Group. She went on

to join the BCS Board of Directors and become chair of the Member Services Committee.

Steve White first got involved as an office volunteer and soon took over the entire responsibility of getting out the first BCS Computers, Software & *Services* Buying *Guide.* He went on to become educational programs coordinator and today is chairman of the Membership Committee.

Nancy Woolford and **Richard Daggett** took on the massive job of coordinating all internal communications and mail traffic within the IBM Group.

Tom Byrne started the Real Estate Group and was its first director.

Gwen Bell, as president of The Computer Museum, began working with the BCS on Computer Discovery Center and soon joined the Board of Directors.

John Sousourian has been active in numerous office and user group projects.

Gladys Monroe got involved as an office volunteer and became our special projects coordinator, which she continues today.

Alan Moulton launched the Lotus User Group and continues today as its director.

Carol Reed started the Nonprofit/Public Sector Group and served as its first director.

Richard Tennant became Computer Update's first editorial cartoonist.

Allan Trick started a Model 100 subgroup within the Tandy/Radio Shack Group, and went on to establish it as the BCS Laptop User Group.

Carolyn Kraut started the Lotus Newsletter and continues as its editor, as well as the BCS InfoLine reporter.

Marty Jukovsky launched Sprite, the Commodore Group newsletter, and continues to serve as its editor.

Ann Bruner got involved in helping out with various BCS projects, and became active in the Database Group and served briefly as its newsletter editor.

Joe Roy became the BCS's public relations account executive at Newsome & Company and went on to become head of public relations for the BCS.

Dan Rosenbaum joined Computer Update as a regular contributor with his "Human Side" column.

1985

Michael Bate and **Michael Bartell** started the Kaypro Group's electronic bulletin board. Michael Bartell continues today as the board's sysop and the group's treasurer.

Dawn Richards became a contributing editor to PC Report.

John Mills joined the BCS Board of Directors to launch the BCS Membership Committee.

Rick Mangekian became director of the Tandy/Radio Shack Group and helped broaden the group to reflect the manufacturer's growing product line.

Eric LeVine helped organize and establish the Macintosh public-domain software collection.

Dick Arscott and **Gene Levine** be-

Lee Gesmer

Jackie Masloff

Harley Hiestand
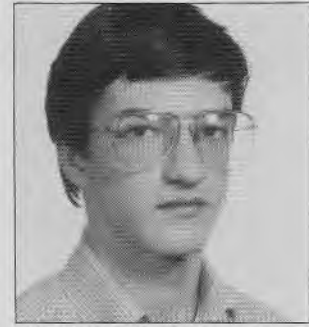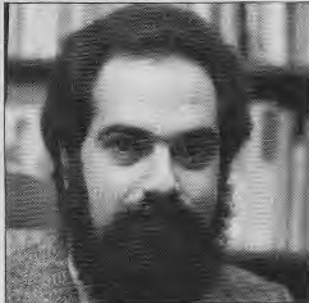
Alex Randall

John Premack

Alex Rosenberg

came regular writers for The Active Window, the Macintosh newsletter.

Conrad Willeman got involved as production manager for The Active *Window.* He went on to become the newsletter's editor and then to found the Macintosh Design Group for professional designers.

Kate Jurow and Doug Roberts started the Member Services Council volunteer training program. Doug went on to launch the IBM Group's 80386 seminar series.

Jim Sulzen and Kerry Lynn started MacTechGrp, the Macintosh subgroup for advanced users and programmers.

Ric Ford launched The Handle, a newsletter for advanced Macintosh users, which was also the BCS's first advanced technical newsletter.

Michael Fosburg was the Artificial Intelligence Group's first speaker coordinator, arranging many of its successful programs.

Harley Hiestand started the Macintosh Legal Group.

George Voltz got involved as a photographer for Computer Update and went on to become user group correspondent for the Macintosh Group, keeping the BCS in touch with hundreds of other user groups around the world.

Lee Gesmer started the legal subgroup within the Consultants & Entrepreneurs Group.

Larry Gensch began the Lap Computers newsletter and serves today as its editor.

Stephen Cremes got involved in the coordinating committee of the Lap

Computer Group and launched its public-domain software library.

Jim Franklin got involved in the coordinating committee of the Lap Group and has hosted most of its monthly meetings.

Bob Quinn became a regular contributor to the Lap Computers newsletter.

Arthur Wood started the Disabled/Special Needs User Group and serves today as its director and as director of the BCS's Center for Computer Opportunities for the Disabled.

Maryanne Devine launched the Wang User Group and served as its first director.

Barbara Mintz became director of the Commodore User Group and went on to launch new Commodore services, including a major Commodore computer fair.

Peter Farmer started the Networking/Multi-User Group and served as its first director.

Audrey Handelman became editor of MicroEconomics, the Consultants & Entrepreneurs newsletter.

John Hoyte became advertising manager for MicroEconomics and built its revenue base substantially.

Bob Troupe joined the Membership Committee and has been active in developing our computer retailer outreach program.

Greg Stoller started the High School User Group.

Richard Lucash and Robert Sanchez became regular contributors to MicroEconomics and the C &E Group.

Michael Wishnietsky took over as director of the Victor User Group.

Anita Micossi became active in planning and developing the Social Impact Group and served briefly as its director.

Justin Dowling launched the Texas Instruments newsletter as its first editor.

Kenyon Karl became editor of the Tandy/Radio Shack newsletter and got it onto a regular publishing schedule.

Ken Lager got involved in the Graphics Group and later helped the IBM Group set up its first office space.

Tom Lohnes started the Tandy/Radio Shack Group's public-domain software library and continues today as its librarian.

Becky Waring became actively involved in the Macintosh Group's public-domain software collection. She went on to take over The Active Window and develop it into a major publication, and to become a director of the Macintosh Group.

Kathy Betz became director of the Graphics Group.

John DeMeritt became actively involved in the Osborne Group and is director of the group today.

John Kemeny became active in the Sinclair/Timex Group as its newsletter editor and today serves as the group's director.

Richard Bloom got involved in the Apple II Group as public-domain software librarian and today serves as the group's director.

Steve Kaiser started the Heath/Zenith newsletter.

Marilyn Seelye and Judy Edwards helped establish the IBM Group's

Seth Itzkan   Beverly Kleiman   Steve Locke   Alison Birch

Kent Borg   Tony Collins

Newcomers group and went on to create the IBM PC Seminar Series.

Jim Cortese launched The BCS Connection, our very first electronic magazine. He single-handedly wrote, edited, and distributed the magazine weekly.

Alan Glick became actively involved in the Atari Group and went on to launch the Atari ST Group and the J-Bug newsletter. He serves as the group's director today and as a member of the Member Services Committee.

Jackie Masloff started the Apple II Group's newsletter and later became director of the Woman and Personal Computers Group.

Dan Strassberg has been a regular contributor to the Apple Group's newsletter.

Janet Gould took over the Education Group, re-energized it, and started its newsletter. Today, she serves as group director and newsletter editor.

Joni Bubluski got involved as a remote sysop in the Atari Group and today is the group's meeting coordinator.

Cameron Laing got involved in the Atari Group and has since helped with various BCS projects.

Harry Stubbs took over as head of the IBM Group's word processing subgroup.

Brigite Grossman introduced ApplePress, a new newsletter for the Apple II User Group.

Ben Calica got actively involved in the Macintosh Group in several roles and then became director of the BCS Resource Center, joined the Member Services Committee, and created the Resource Center Committee.

Alex Rosenberg got involved in the Macintosh Group's public-domain software collection.

Chris Spenser got involved as a regular contributor to ApplePress and went on to start the Apple Group's electronic bulletin board.

Michael Lytton became codirector of the Legal Group.

Doug Wales re-energized the Real Estate Group and became its new director.

Eric Gould became active in the Macintosh Group and then became director of the Integrated Software Clinic.

Peter Hoddie established the Texas Instruments 99/4a User Group, organized the TI Computer Fair and continues to serve as the group's director and software librarian.

Alex Randall got involved in starting a Local-Area Networks clinic and later founded and became director of the International Group.

Patty Jacobson launched the Accounting Software clinic.

Steve Geehan started the Kaypro Group's seminar series.

John Premack launched the Commodore Group's electronic bulletin board.

Sylvia Weir developed the concept for the Center for Computer Opportunities for the Disabled and joined with the Disabled/Special Needs Group to help turn this dream into a reality.

Joan Thorman became actively involved in developing and building the Center for Computer Opportunities for the Disabled.

1986

Mark Johnson got involved in the IBM Group as its review coordinator and later started the first review-on-disk publication.

Sandy Culver took over as the Business Resource Exchange leader of the Consultants & Entrepreneurs Group.

Charles Tillett became program coordinator for the Consultants & Entrepreneurs Group and organized many of its well-known recent programs.

Alan Newton started the Consultants & Entrepreneurs Group Personal Contacts seminar.

Seth Itzkan started Impact, the newsletter of the Social Impact Group and served as its first editor.

Jay Sage became director of the CP/M User Group and also started ZCPR seminars in the Kaypro User Group.

Al Spenser became director of the Heath/Zenith User Group.

Bill Gerber became director of the Lap Computers Group.

Colin Brown and **Ellen Balber** established the Texas Instruments Professional Group and became its first directors. Ellen also founded the group's newsletter.

Mary Pensyl became an active contributor to the Telecommunications Group.

Roger Culp launched the Texas Instruments Professional Group software library.

Sharon Caley became editor of The Lotus Newsletter.

Beverly Kleiman developed the BCS's first services for overseas mem-

Michael Murie

EMarie Pope

Gerri Abrams

Catherine Alvarez

Rob Calcagni

Richard Rohrdanz

hers and established our international affiliation with the Personal Computer Society of Denmark.

Mark Dulcey became editor-in-chief of A-Bug, the Atari 8-bit newsletter.

Annmarie Gilmore started the Digital Group's newsletter.

Garric Cole started the NEC Group's public-domain software collection.

Beverly O'Riordan became editor of BCSTD, the Training & Documentation Group's newsletter.

Jim Leavey and **Mary Sennett** became directors of the Sales & Marketing seminar and continue to run it today.

Christine Bonner launched the Woman and Personal Computers User Group.

Gerri DiBello became software librarian for the Macintosh Group and chief question answerer.

Steve Locke and **Scott Finley** launched the MediMac subgroup and serve as its directors.

Gerry Lukos became associate editor for The Active Window.

Samantha Powers became associate editor for re:CAP, the computer-aided publishing newsletter.

Richard tenEyck reorganized the Telecommunications Group and became its new director.

Neal Prescott became director of the IBM User Group Software Exchange.

Judy Housman started the Project Management Software Seminar.

John Salsgiver got involved in the Investment Group and became editor of its newsletter, and then director of

the group.

Todd Loofbourrow and **Erik Brynjolfsson** started the Expert Systems subgroup in the Artificial Intelligence Group.

Alison Birch became editor of Poly-spiral, the Logo newsletter.

David Sheibley started the Atari Group's 16-bit software library for the Atari ST.

Beth Katcher and **Ken Elderkin** got involved in the Database Group and launched its DBUG newsletter.

Kent Borg, Tony Collins, April Kirpalini, Margaret Menzies, Michael Murie, and **Larry Wild** all joined the Resource Center Committee to make the Resource Center into a thriving, vital resource for all members and user groups. They have never been the same since . . . .

Russell Frye became the new director of the Networking/Multi-User Group.

Emarie Pope became director of the Social Impact Group.

Sheila Attig launched the CP/M Bios newsletter as its first editor.

Mark Bornstein and **David Strickler** became the new directors of the Digital Equipment Group.

Brian DeLacey became sysop for the Macintosh Group's electronic bulletin board and established the BCS's first two-computer bulletin board system.

Gerri Abrams and **Michelle Harlow** became actively involved in organizing the Education Group's newsletter and meetings.

Shava Nerad launched the VAX User Group and serves as its director.

Dan Crawford became the new

director of the Wang Group, editor of its newsletter, and operator of its electronic bulletin board.

Bill Saunders became the new sysop of the IBM electronic bulletin board.

Sam Ezust became sysop of the BCS office's electronic bulletin board system and converted the board to FIDO software.

Bill Walde started the Amiga User Group and served as its first director.

Harvey Bingham launched the Amiga Culture newsletter and serves today as its editor.

Al Berkowitz became public-domain software librarian for the Apple II Group.

Pat Ryan became meeting host for the Amiga Group.

Glenn Chapman started the Amiga Group's software library and serves as its librarian.

Bob Tolly launched the Amiga Tech Group.

Robert Gorrill became sysop for the Telecommunications Group electronic bulletin board.

Catherine Alvarez became editor of D/SNUG, the Disabled/Special Needs newsletter.

Rod Calcagni started the Computer Music Group and serves as its director.

John Bottoms is starting the CD ROM User Group.

Kathy O'Connor became editor of MicroEconomics.

Jim Grasso started the Real Estate Group's newsletter and serves as its editor.

Andy Nanopoulos became the new director of the Amiga Group.

SECTION III

The Last Ten Years

By Tracy Robnett Licklider

A RECOLLECTION:

PERSONAL COMPUTERS IN THE BOSTON COMPUTER SOCIETY'S FIRST TEN YEARS

We cruise down memory lane to check out what was hot and what was not during the past decade

This is a look back at the revolution in personal computers as viewed, at least primarily, through The Boston Computer Society's general meetings, user groups, expositions, and publications: how a ten-year member of The Boston Computer Society might have seen it, read about it, and recollected the awesome experience.

When The Boston Computer Society first formed in February 1977, personal computing was primarily the province of hardware hackers, hobbyists, and homebrew kit-builders. The personal computer industry had been born two years earlier, in January 1975, when Popular *Electronics* magazine ran a cover story about the Altair 8800 personal computer kit by Micro Instrumentation and Telemetry Systems—or MITS, as it came to be known. That early ancestor of today's personal computer came with two boards and slots for 16 more in an open chassis. One board held the Intel 8080 processor chip and the other held the 256 bytes—a mere one-fourth

Apple's first ad was as rudimentary as its first office space.

of 1K (a "K" equaling 1,024 bytes)— of memory. The unit's front panel had toggle switches for input and lights

for output. The Altair sold for about $300 without a case, and for about $400 with one. This was the machine that Bill Gates and Paul Allen wrote the first Microsoft BASIC for—that first BASIC occupied a whopping 4K and required an add-on memory board.

Southwest Technical Products Corp. was another early leader. In 1975, its first kit cost $395 and provided a Motorola 6800-based system with a huge 2K of RAM. In addition, the SWTPC system could be connected to a teletype machine for input and output. Indeed, in the early days, owning a used teletype machine as an input/output device was the sign true of a pioneer power user. The earliest BCS meeting notices mentioned that a "TTY" (that is, a teletype) would be available at the meetings. By late 1977, Southwest had boosted its system up to 4K, still at the $395 kit price, and it offered a $500 kit for a simple video terminal that displayed 64 characters per screen line.

IMSAI, Cromemco, Technical Design Labs, The Digital Group, Heathkit, Processor Technology, and Polymorphic Systems—those were the names of the established personal computer makers as the BCS held its first year of meetings. They were the ones with full-page, four-color ads in the personal computer magazines. Cromemco advertised its Z-2D system for $2,095 assembled ($1,495 as a kit) and boasted that the unit's two floppy disks could hold 92K each. Heathkit offered in kit form a $350 paper-tape reader and punch. Yet, this was the beginning of the end for kits. Processor Technology offered its first "Semikit"—a 16K memory board—that was $369 as a Semikit or $399 fully assembled and "burned in." The marketplace wanted personal computers that were already put together and ready to use out of the box.

The Society's early general meetings in 1977 and 1978 featured a "homebrew 9900 system," a talk about DEC minicomputers used in sailing the America's Cup, the ECD Micromind computer, race betting using a Wang minicomputer, and the Kurzweil Reading Machine.

Jobs and Wozniak had created the 4K Apple I in 1975 and later added color and redesign to come up with the venerable Apple II. At about the same time, Commodore introduced its PET personal computer. Both were based on the 6502 processor chip. In 1977, Radio Shack joined the personal computer ranks with its 4K TRS-80 Model I, based on the Zilog Z80 chip. The Radio Shack unit, priced at $599, included a monitor and cassette recorder for file storage and retrieval. Ohio Scientific added its Challenger IIP computer at $598, another 6502-based, BASIC-in-ROM, 4K RAM computer. These four machines, because they had wider distribution and because they were completely assembled, quickly dominated the early but rapidly expanding personal computer market. The January 1979, BCS Update (the magazine's name was changed to Boston Computer Update in March 1980, and to Computer Update in May 1982) identified the "five most exciting machines" as the TRS-80, the Commodore PET, the Exidy
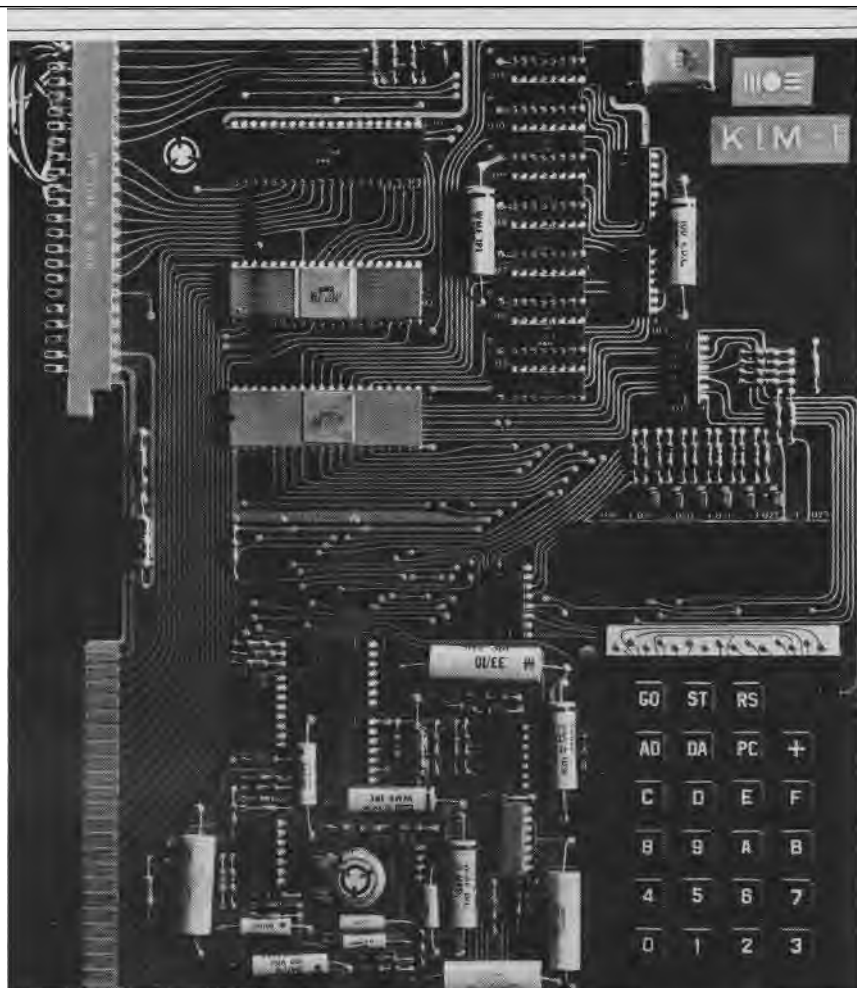
Attendees at a 1979 BCS General Meeting tuned in to computer-made music on the Kim-1, one of a bevy of cheap, 6502-based, single-board computers popular at the time.

Sorcerer, the Apple II, and the Compucolor II. BCS Update advised skipping the TRS-80 Model I Level I and buying the Level II because of the Level I's idiosyncratic dialect of BASIC. In the early rivalry among machines and machine-owners, the TRS-80 picked up its "Trash-80" moniker. Ever image-conscious (and somewhat pricier) Apple styled itself for professionals and the upscale; PET filled out the classrooms; and Radio Shack sold to anyone else who made it into one of its 6,000 stores.

These early computers relied on ordinary audio cassette recorder/players for storing files. Loading and saving programs and data files was painfully slow and woefully prone to faulty recording. Generally, you had to record a file and then immediately play it back in a verify mode to compare the data on the tape against the data in memory in order to make sure that you had a reliable copy of the data.

The Society's meetings in the spring of 1979 demonstrated the Processor Technology Sol-20, the Bally computer, the PET, Ohio Scientific computers, and computer-made music on a Kim-1. The Kim was one of a bevy of 6502-based, low-cost (under $100), single-board computers with a three-letter name These were sold as one-night kits, mainly with a hexadecimal keypad for input and hexadecimal display for output. Among their siblings were the RCA Cosmac VIP, the AIM, the Elf, and the Sim.

The first BCS Update with a photo cover came out in the early summer of 1979. The photo featured four personal computers that had just been announced at that year's National Computer Conference: the Radio Shack TRS-80 Model II, the Heath Data Systems WH-89, the Ohio Scientific C4P, and the Texas Instruments 99/4.

The Radio Shack Model II was a

boxy, bulky unit sporting an eight-inch floppy disk drive with an option to get an equally bulky expansion "bay" in which to house up to three additional drives. The Model II omitted the customary BASIC-in-ROM, giving the machine an uninterrupted 64K memory space. With the Model II, BASIC, if you needed it, was read off disk. The Model II was also part of the beginning of personal computers' pursuit of business users.

Even kit-maker Heath acceded to the marketplace reality and produced its new All-in-One computers in assembled (as well as kit) form. In one tidy piece, the Heath system integrated a good monochrome monitor with 25 lines of 80 characters across, keyboard, Z80 processor, and a single 5¹/4-inch floppy disk drive. The Ohio Scientific entry, the C4P at $1,533, sported 20K of RAM and a single "mini-floppy" disk drive. Almost all personal computers adopted the smaller, newer 51/4-inch floppy disk, which was replacing the established eight-inch standard; the Radio Shack Model II was one of the few exceptions. The new smaller disk drive was called the "mini-floppy" to distinguish it from the older, plain, eight-inch floppies.

Texas Instruments' announcement of its TI 99/4 computer was viewed, at the time, as the most exciting. The TI computer came with a new TI 16-bit processor chip. Up to that point, virtually all personal computers had been based on eight-bit processor chips (the 8080, Z80, 6800, and 6502). Here was a technological breakthrough: Data was going to be processed in chunks twice as big as before. For $1,150, the TI computer came with a 13-inch color monitor, built-in BASIC, 16-color capability, and "sprites"—hardware-controlled video-display elements that made it easy to program complicated video game graphics. Unhappily, the TI BASIC was non-standard; that meant moving programs which worked on other machines over to the TI 99/4 was difficult.

By late summer of 1979, the BCS had started user groups for the Apple II and the PET and had groups forming for the TRS-80 and Ohio Scientific computers. The cover of the August/September Update featured the CompuThink MINIMAX, which, at $4,995, offered 108K RAM and 800K of disk storage—yet another machine

These four new kids on the block stunned the National Computer Conference in summer 1979.

aimed at the much-sought-after business user. In the meantime, the PET now was sold in a 32K-RAM version, and Commodore had joined the chase for the business user with its Commodore Business Machines—offering more memory and floppy disk drives. Corvus was selling a 10-million-byte hard disk—to be hooked up to TRS-80s and Apples—for $5,350. Integral Data Systems' Paper Tiger was a leading selling personal computer printer at around $1,000; it offered acceptable if grainy dot-matrix printing.

Toward the end of 1979, a 16K Apple cost about $1,200 (without monitor); a 16K Heath-89 cost about $2,300 (monitor built in). In November, Atari presented its Atari 400 and 800 personal computers at the BCS general meeting. Both machines accepted program and memory cartridges, and Atari melded its historical long suit in video games with its new personal computers by offering outstanding versions of its games in cartridge form for these machines. The general meeting audience gave a standing ovation and wildly enthusiastic cheering for Atari's demonstration of its Star Raiders game. The 400 model was a low-end machine, locked at a maximum of 16K, with a spill-proof, membrane-style keyboard. The 800, which retailed at $999, could expand to 48K RAM and featured a "real" keyboard.

Neither included a monitor. Both offered exciting color graphics and included fancy player and missile graphics hardware to simplify programming complex animated games.

By January 1980, the BCS had a NorthStar User Group. That month, Texas Instruments showed off its 99/4 computer at the BCS general meeting. However, the TI offering received only a lukewarm reception, having been bettered by Atari and others in the six months since its announcement. Meanwhile, the Intertec Superbrain, yet another business box with a Z80 processor, 32K RAM, and two floppies, was selling for $3,000.

The mad stampede for domination of the "home market" began. Mattel followed hard on the heels of Atari and Texas Instruments with its $295 Intellivision cartridge game machine. For an additional $500, you could add computer capabilities. The battle was on to see which company could parlay its video games strength into what would be—it was widely believed—a more enduring home computer market.

Japan was heard from with NEC's introduction of its $1,000 PC-8001 computer with 16K RAM, processor, keyboard, and monitor. In spite of the machine's utter unremarkableness, it spawned fervent talk of an impending Japanese invasion of personal computers. With eyes turned east, the invasion came from the west in the form of Clive Sinclair's $199 ZX-80, a 12-ounce book-sized computer with integer-only BASIC, 4K ROM, and a meager 1K RAM. In spite of its limitations, the machine sold like hotcakes.

The March cover of Boston Computer Update showed the CSSN 1000, still another boxy bid at business users with a "full" 64K RAM, Z80 processor, and a 24-million-byte hard disk with a system for backing up the hard disk's data to magnetic tape. Centronics, at the time one of the leading suppliers of printers for personal computers, unveiled at a BCS general meeting its new $1,000 737 printer—still dot-matrix, but with improved spacing—making it thinkable for the first time to use a personal computer printer for something besides listings of BASIC programs.

In May 1980, the BCS added the Atari User Group. Exatron came out with its Stringy Floppy—a high-speed, miniature tape cassette system

designed to replace ordinary audio tape for storing files. In spite of the fact that the Exetron met with some early enthusiasm, it eventually succumbed to the competition from disk drives, whose prices were steadily falling.

More significantly, May 1980 marked the Disneyland unveiling of the much-awaited Apple III. The new Apple came priced in versions between $4,300 and $7,800 and included a staggering 128K RAM and a "full" 80-characters across by 24-lines screen. This was Apple's initial assault on the business market. It turned out to be the first of several such assaults for Apple. The Apple III still used the 6502 chip, which intrinsically had an addressing limit of 64K RAM; it got around the addressing limitation by hardware gimmickry that mapped pieces of the full 128K memory into the addressable 64K space. This was the early sign of pressure from ever bigger and better programs and operating systems to access more and more memory and go beyond the limitations of the early eight-bit processor chips.

In late 1980, Canon checked in with its Canon TX-25 computer priced at $1,295. It was based on the 6809 processor, still an eight-bit chip. Altos offered a 64K-RAM box with a Z80 processor and two eight-inch floppies for $6,000—this without monitor or keyboard.

Commodore stunned the industry with its under-$300 VIC-20 to start off 1981. The entire computer was packed into a slightly plump keyboard unit. It connected to a home TV and displayed a rather odd 23 lines of 22 characters each. It included built-in Commodore BASIC in ROM and 5K (odd again) of RAM. It offered color graphics and accepted plug-in cartridges, joysticks, and a substantial—if not inexpensive—set of expansion options. This Commodore move enmeshed Atari, Mattel, Sinclair, and Commodore itself in a price war for the home market that, in time, took its toll. In the background, various rather bland entries percolated in from Japan. The perhaps aptly named YX-3200 from Sharp was exemplary; it listed at $6,000 and came with 32K of ROM, 64K of RAM, a printer, and two floppy disks.

If the VIC-20 was a shocker for the home market, then the Osborne 1 was the jolt for the business market. The

Remember this relic? It's Computhink's Minimax, which cost $5,000 in 1979 and hoped to attract business people.

Osborne 1 was a "portable" business computer with 64K RAM, two floppy disk drives (with 100K storage capacity each), a keyboard, and a tiny five-inch (diagonal) monitor that showed 24 lines of 52 characters. The initial production units of the machine resembled World War II battlefield communications packs. They looked somewhat rough-hewn and dull-colored, maybe to convey the right idea of ruggedness. A battery pack was an option. The unit weighed 24 pounds and retailed at $1,795. To boot, significant software was bundled with the machine. The price included word processor and spreadsheet programs. It was another sold-like-hotcakes system, and it started talk about the safety issues in using personal computers aboard airplanes. The worry was that WordStar might accidentally reroute all traffic to Des Moines.

In late spring of 1981, Xerox hit high and low with its Xerox Star and Xerox 820 computers. In retrospect, it was plain that Xerox had missed the target in the middle. The Xerox Star was the talk of that year's National Computer Conference—it demonstrated the much - heralded, Xerox-researched mouse and windows interface that subsequently captured the imagination and seized the minds of Star-struck personal computer operating systems makers. A Xerox Star cost

tens of thousands of dollars. The Xerox 820 was a remarkably uninspired box housing a very vanilla-flavored Z80-based system with two floppies. The conventional wisdom of the time was certain that Xerox and Texas Instruments would have major impact on the personal computer industry. But TI's entry flopped; Xerox's did, too. In time, these two big-name players would have plenty of respectable company.

The big company that did make a difference was IBM. It announced its entry in August of 1981—the watershed event of personal computers' first ten years. IBM single-handedly legitimated personal computers. No longer were they the province of hackers, hobbyists, and kit-builders. Of course, the fact was that by the time of IBM's announcement, most computer users were already not hackers, hobbyists, and so on. They were people trying to get something done with a computer. Nevertheless, it took IBM to dispel the old images. In one fell swoop. IBM made it fashionable and safe for doctors, lawyers, bankers, accountants, huge corporations, and other sheep to use personal computers.

IBM's machine was hardly revolutionary. At $1,565, you got a 16K-RAM, BASIC-in-ROM computer with color monitor and cassette recorder. That configuration was supposed to match up against the aging Apple II. In a national newspaper ad, Apple gamely welcomed its new competitor to the industry. The high-end IBM configuration turned out to be more important. At $4,085, you got a 64K-RAM computer with one floppy disk drive with 160K capacity and an 80-character-per-second dot-matrix printer. IBM did break new ground by using the 16-bit Intel 8088 processor chip, which was faster (because it could deal with memory chunks twice as large) than the eight-bit chips that were still primarily used in its competitors' machines.

At the end of 1981, the Society's magazine noted that the Apple III's memory had been beefed up to 256K as part of a re-introduction of the machine after a somewhat disappointing first launch. Sinclair improved its ZX-80 into the ZX-81, which it began to sell directly by mail at $150 assembled and $99 in kit form.

1982 began with Radio Shack's debut of the TRS-80 Model 16, which

A limited but cheap way to learn about computers, the midget Sinclair sold like $199 hotcakes in 1980.

was based on the Motorola 68000 processor and designed as a multi-user system. In this case, "multi" meant up to three users. The Model 16 was also one of the first that was supposed to run Xenix, an operating system based on the popular Unix minicomputer operating system. Some conventionally wise commentators saw this as the beginning of a sweeping adoption of a Unix-like operating system for all "serious" personal computers. In any case, Radio Shack's Model 16, whether it sold or not, helped the company begin to shed its "Trash-80" image and to look serious about being "in business for business." Meanwhile, at the lower end, Commodore turned up the heat in the raging home market competition by introducing its $595 Commodore 64, a 64K-RAM refinement of its VIC-20 system.

By this point, personal computers were "hot" and "in." Every company that could (or thought it could) jumped into the fray: Zenith, Vector, Victor, Fortune, Wang, and so on. For the most part, the new computers were IBM-similar, if not strictly IBM-compatible. They usually were based on an 8088 or 8086 processor chip, had a minimum of 64K, and came with two floppy disks. The Japanese began to show up increasingly with functionally similar units. The Europeans emphasized their greater sensitivity to ergonomics, and "ergonomics" became a hot word. When your machine did not compute better

than your competition, you could at least point to the superior tilting and swiveling of its monitor, improved angle of the wrist at the keyboard, bigger keyboard with more keys to be confused by, or, perhaps, to the fact that you could stand the computer on its end beside your desk and make your desktop look less cluttered.

In mid-1982, Digital Equipment Corporation (DEC), the leading maker of minicomputers, declared its long-awaited position by introducing its Professional and Rainbow computers. Here was yet another big company that everyone was certain would forever change the shape of the personal computer industry. Basically, the DEC "Pro350" was a fiasco—a personal computer Bay of Pigs. The Pro350 was based on a proprietary DEC chip that was very similar to but just different enough from other DEC processors that it was impossible to transfer the existing vast collections of DEC software from its PDP-11 and VAX libraries. The DEC chip was also substantially different from the Intel 8088/8086 chip and the Motorola 68000—the two chips in most of the then top-selling personal computers. That made it a significant challenge for software developers to port their applications from their IBM or Apple implementations to the DEC machine. To compound the woes, the DEC operating system was unwieldy, slow, and piggish of memory, which meant that even when software was converted to the DEC machine, it per-

formed less well.

When DEC started out, it intended its IBM-similar Rainbow machine to be the low-end of its offering—something to appease those Philistines who could not see the better way with the DEC-like architecture of the Professional series. Of course, the IBM similarity turned out to be the near-saving grace of the Rainbow. It pretty much ran software written for the IBM PC, and that made it a sellable machine. Nevertheless, and not without a gallant though ill-fated corporate effort, DEC retreated from personal computers. It would be back some day.

The Osborne 1 had triggered a fascination with the notion of portable computing, and various companies emerged to fight over that niche in the market. GRiD Computer unabashedly stalked out the high end with its $8,150 Compass computer—a sleek, black, metal-cased Maserati of a personal computer. It packed an 8086 processor boosted by an 8087 math coprocessor chip, used a gorgeous, eerie orange/yellow plasma display, and relied on exotic bubble memory for remembering things. The unit ran quite hot, and the metal case helped dissipate the heat—it felt like you could fry an egg on it.

Teleram showed its T3000 portable at the August 1982 BCS general meeting. The eight-pound, 13-ounce computer had 64K RAM and used bubble memory for storage. Bubble memories do not forget when you turn off your computer. While a lot less pricey than the GRiD, the T3000 displayed a paltry four lines of 80 characters, using acceptable but decidedly unsexy liquid-crystal-display technology.

Late 1982 and January 1983 generated major announcements of the COMPAQ, the Apple IIe, and the Lisa. The $3,000 COMPAQ weighed in at 28 pounds and tilted reviewers toward words like "transportable" and "luggable" and away from the lighter-weight "portable." The COMPAQ also crystalized the issue of "true" compatibility with the IBM PC. Up to that point, anyone hawking a floppy disk PC with an 8088 chip in it claimed it was IBM-compatible. COMPAQ refined the terminology. It seemed engineered ingeniously to achieve as close to 100-percent compatibility without treading on patents or, perhaps, copyrights.

Apple rejuvenated its Apple II

line by bringing forth its Apple He remake of the company's workhorse product. Apple also made its second initial assault on the serious business user with its $10,000 Lisa computer. The Lisa attempted to render the Xerox Star mouse and windows environment on a personal computer. It was a dramatic and gallant effort, but one that eventually failed. Lisa included a five-million-byte hard disk, which at the time seemed like a substantial amount of storage. Unfortunately, the Lisa software ate up 2.25 million bytes right off the bat. The computer had a vast one million bytes of RAM and, for the time, a very high-resolution, 720-by-364, black-and-white graphics display. Yet, it performed slowly; the system strained the 68000 processor chip. More significantly, however, the machine was starved for software. Apple itself supplied the six bundled-in application programs for the bread-and-butter applications (word processing, spreadsheet, and so on), and Apple was very religious about having outside developers conform to rigid programming style and conventions in building Lisa software. Most developers balked at both the rigors of Lisa development and the uncertain market fate of the Lisa. Over time, buyers turned away from a $10,000 machine with little software.

Spring of 1983 presented a parade of portables including the Kaypro II, the Otrona Attache, Epson HX-20, and, finally, the Radio Shack Model 100. The Model 100 and an almost identical computer sold by NEC (both were made by the same Japanese company, Kyocera) delivered a remarkable amount of computing in a book-sized package. The machines came with 8K RAM, expandable to 32K. They included significant software in ROM: a full BASIC, word processing, telecommunications, and simple-minded database search capability (for keeping track of phone lists and things to do). The units' keyboards were acceptable, and the 8-lines-by-40-characters liquid-crystal display was just barely adequate. The standard machine included a printer port, serial port, phone jack, bar-code reader, and built-in 300-baud modem. Journalists and other rovers fell in love with it. Also in March, IBM added a 10-million-byte hard disk to its PC and dubbed the combination the PC/XT. A sure thing became surer.
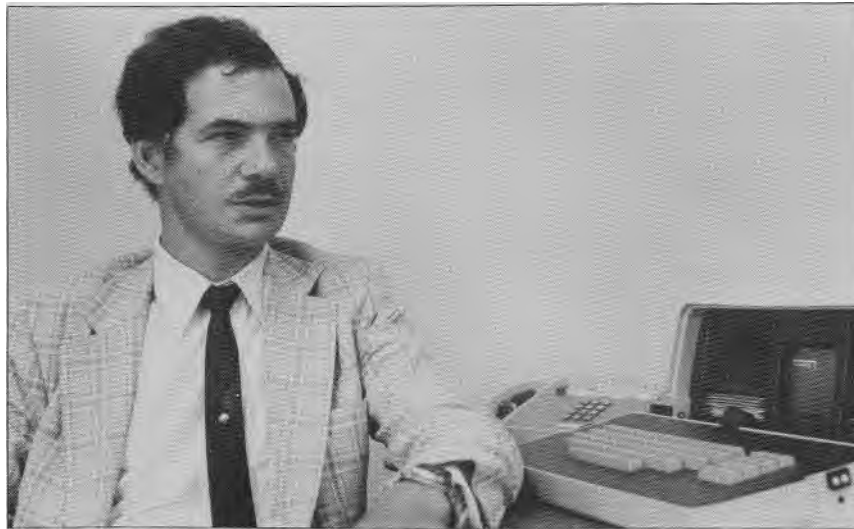
Adam Osborne, shown here with his namesake, jolted the business market in early 1981 with his bundled portable. Initial production units resembled WWII battlefield packs.

The summer of 1983 began The Shakeout. The trade press and industry became obsessed with the financial distress of many hardware manufacturers. In rapid succession, Osborne, Vector Graphics, North Star, Fortune, and Victor suffered reversals of fortune—in many cases, plain bankruptcy. In September, Texas Instruments reported a second quarter loss of a cool $183 million. Atari reported dropping an even cooler $310 million in the same period. Mattel announced a loss of only $100 million over two quarters. Unfazed by the gloom and doom, Coleco bravely (perhaps brazenly) revealed with green lasers and glass cases its new home-market entry, the Adam computer. It was the talk of the summer's Consumer Electronics Show. The Adam included 80K RAM, two high-speed wafer tape drives (for storing files), a "letter-quality" printer, word processing software, and a game paddle—all for only $600. Unhappily for Coleco, the summer excitement soured into fall concern and winter worry as the machine failed to ship in quantity in time for Christmas sales.

Stirred in with the dire prognostications for the personal computer industry was incessant speculation about IBM's always imminent move to annihilate all competition with its "Peanut" and "PC2." The Peanut was to be a home machine. The PC2 was to be the successor to the original PC and PC/XT. Eventually, IBM announced that there would be no PC2

and presented its PCjr as the erstwhile Peanut. The ill-fated PCjr was an unhappy cross between a stripped-down IBM PC and would-be game machine. It showed signs of having been designed by committee. Obviously it could not afford to be too good, close to, or compatible with the PC, or it would steal sales away from the more expensive PC and PC/XT. On the other hand, it had to be pretty good or it would go the way of all the other home machines before it. It tried to walk that tightrope and eventually tumbled. In the spring of 1985, after a disappointing 1984 Christmas season, clever IBM succeeded in unloading most of its inventory with a very attractive promotion bundling an IBM color monitor with the PCjr. It later discontinued the machine.

In November 1983, Hewlett Packard presented its HP150 computer at the BCS general meeting. This $4,000 system was IBM-compatible, but offered a touch-screen and used the newly emerging 3 1/2-inch-small, hard-cased floppy disks. The touch-screen was HP's variation on providing a new, easier-to-use interface. It provided several software packages tailored to touch-the-screen input. Other software developers were not, for the most part, persuaded to adapt their programs to the touch-system.

1984 began with British Acorn Computer Company's plans to sell its Acorn computer to American schools. The company was buoyed by the fact that it had been chosen to supply
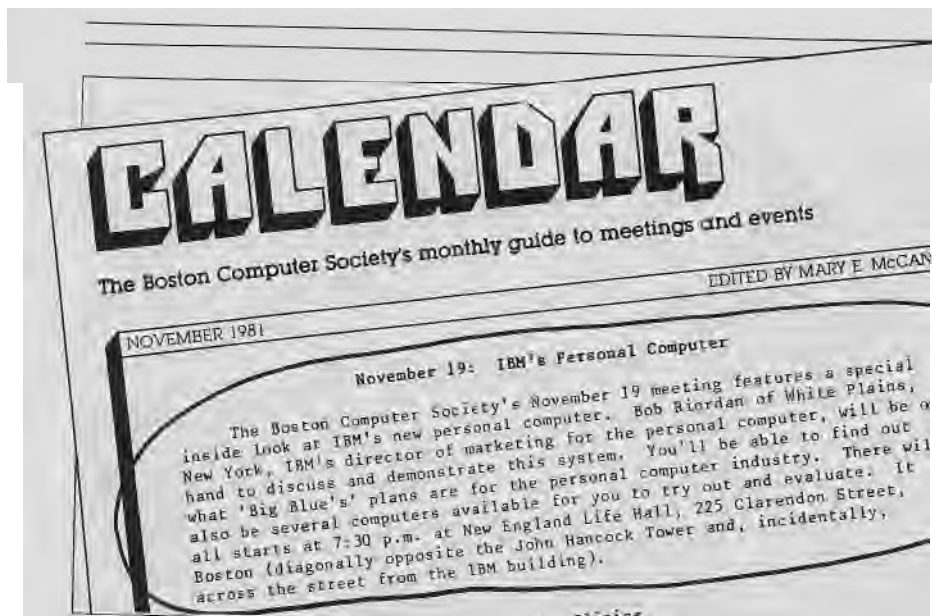
The BCS had one of the first showings in 1981 of Big Blue's PC, the computer that changed the world.

computers for the BBC's computer course to be done nationally in Britain. The Acorn targeted the Apple head on. It had a 6502 chip, color graphics, and 64K for $995. Its success was, unhappily for Acorn, quite limited.

Far more important was the second most important event of personal computing's first ten years—the unveiling of the "insanely great" Macintosh in early 1984. Indisputably, the Macintosh presentation at the BCS general meeting was the most enthusiatically received presentation during the BCS's first ten years. The Apple presenters had to put their show on three times to satisfy the over-overflow crowds who stood outside in the dead of Boston's winter for three hours—cursing Boston fire regulations—waiting to see a later showing. This was Apple's third initial assault on serious business users. It was the Xerox Star mouse and windows again; it was the Lisa re-done; but this time it was much closer to being right. Again, as with the Lisa, Apple supplied the initial two applications, MacWrite and MacPaint, bundled with every machine. This time, however, Apple had cajoled more third parties into porting their products to the Macintosh. The machine struggled with only 128K and a slow floppy, and had barely enough software to survive. But this was a machine that at least some people had faith in. They believed that it mattered and that, in time, it would prevail.

The Macintosh unveiling made the rest of 1984 mainly an anticlimax. In July, Apple brought out the IIc version of its Apple II line. This machine mainly reflected economies from higher levels of chip integration and streamlining of manufacturing.

In August of 1984, three years after its entry into personal computing, IBM revealed its PC/AT machine, based on the Intel 80286 processor. The machine packed about twice the speed of the PC/XT and had the potential to address up to 16 million bytes of RAM memory. Unhappily, there was (and still is) virtually no operating systems software that can really tap the power of the new chip. The AT was, and largely remains, just a faster version of the PC. Also, unhappily, early AT buyers encountered frequent problems with the system's hard disk.

Meanwhile, Timex had taken over North American sales for Sinclair, and it introduced the Timex/Sinclair 1000—the would-be successor to the ZX-80 success.

1985 started up with Apple's splash promotion of its "Macintosh Office." The announcement featured AppleTalk and the Apple Laserwriter. AppleTalk was a low-cost local area network for connecting Macintoshes, hard disks, printers, and Laserwriters. The Laserwriter was a stunningly high-quality printer based on a laser/xerox-type printing engine capable of 300-dots-per-inch resolution, and it could print eight pages per minute. The $7,000 Apple Laser-

writer as a printer actually contained a 68000 processor and more memory than the Macintosh, which now routinely sold in a 512K configuration. The computer-hidden-in-a-printer brought the personal computing debut of the PostScript page-layout programming language. Apple happily discovered that it dominated the burgeoning, even if brand new, desktop publishing market. This was Apple's fourth serious assault on business users; this time was even more serious—it used the word "Office" in its campaign so there was no mistaking where it thought you could use the computers. Apple even mentioned making an AppleTalk card to put into IBM PCs.

Later that spring, the long-awaited AT&T personal computer finally emerged. Here was still another huge company that everyone was certain would forever reshape the personal computer landscape. Most pundits saw the arrival of the AT&T machine as the beginning of a horrific clash of Titans, as IBM and AT&T battled it out for absolute and eternal cosmic domination of all computation. What actually happened turned out to be something less than that. The AT&T Unix PC cost $5,590 for a version with a 10-million-byte hard disk, and $6,590 with a 20-million-byte hard disk. Both versions came with a Motorola 68010 processor, keyboard, mouse, one million bytes of memory, a built-in 300/1200 baud modem and provision for both voice and data telephone line hookups.

True to its name, the AT&T machine ran Unix, and trouble to its name, it did not run programs written for the IBM PC. AT&T grittily said it had no plans to offer an option to run such programs. This was another mouse and windows machine, albeit a sluggish one when it came to doing the windows. It was yet another jumping-off point for the widespread adoption of Unix as the personal computer operating system—so pundits said. Unfortunately for the Unix PC, users wanted to run DOS programs.

DEC reintroduced its IBM-compatible Rainbow, having spiffed it up to 640K with a 10-million-byte hard disk. DEC proclaimed stand-alone personal computers in the office a "thing of the past" and, with a $295 DECnet option for the Rainbow, launched its strategy to stress the connectibility of its personal computers to networks and to its VAX super

minicomputers.

In June, software makers Lotus and Microsoft teamed with chip maker Intel to proclaim an expanded memory standard to boost accessible memory on the IBM PC from its then-maximum of 640K up to eight million bytes of RAM. A fair number of the top-selling software packages were converted to take advantage of the potential new expanses of memory. Intel was first in a flood of announcements of memory add-on boards that implemented this standard; its AboveBoard for the IBM PC started at $395 with a paltry 64K of expansion memory, but space for up to two million bytes on the card.

Another flood continued as well: the introduction of IBM AT-compatibles. Compaq showed an AT-compatible version of its Portable as well as a desk-bound version. TeleVideo and Zenith also introduced machines. NCR appeared with its PC-compatible Personal Computer Model 4, and Texas Instruments was back with its Pro-Lite, an 11-pound, full LCD-screen portable selling at $3,200.

In November, Data General was heard from. For a long time, portables had been stuck between the impossibly high-priced full-screen plasma displays (impossible except for GRiD) and having a reduced number of screen lines using liquid-crystal-display technology. Everyone kept hoping for a full-screen LCD display on an IBM-compatible portable. With the DG/One, Data General delivered it-25 lines by 80 characters across. The only problem was that it was awfully hard to read. You had to spend a lot of time adjusting the lamps, light, window blinds, and so on in your room if you did not want to stare at your own face. The DG/One underwent at least two "upgrades" of the LCD display in its first year and became less of an expensive mirror.

Japanese makers were heard from again. Sanyo presented its MBC-775 personal computer with two 360K floppy disk drives, color monitor, 256K RAM, and IBM PC-compatible processor running at double the IBM standard clock speed—all for $2,600, including four application software packages. In addition, the Sanyo was a transportable, weighing in at only 40 pounds.

In late summer of 1985, Sinclair was rescued from bankruptcy by another British firm. The Sinclair QL had sold poorly during the prior
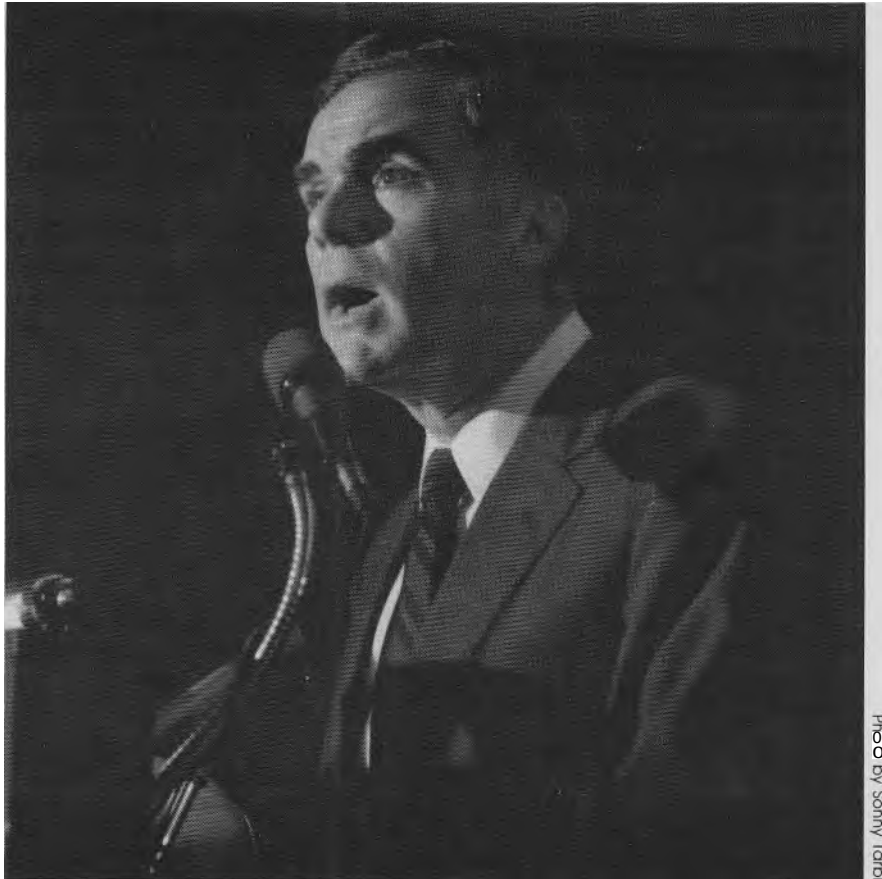
Unfazed by the Shakeout in 1983, Coleco's president, Arnold Greenberg, introduced the Adam computer. The company should have stayed in the Cabbage Patch with its dolls.
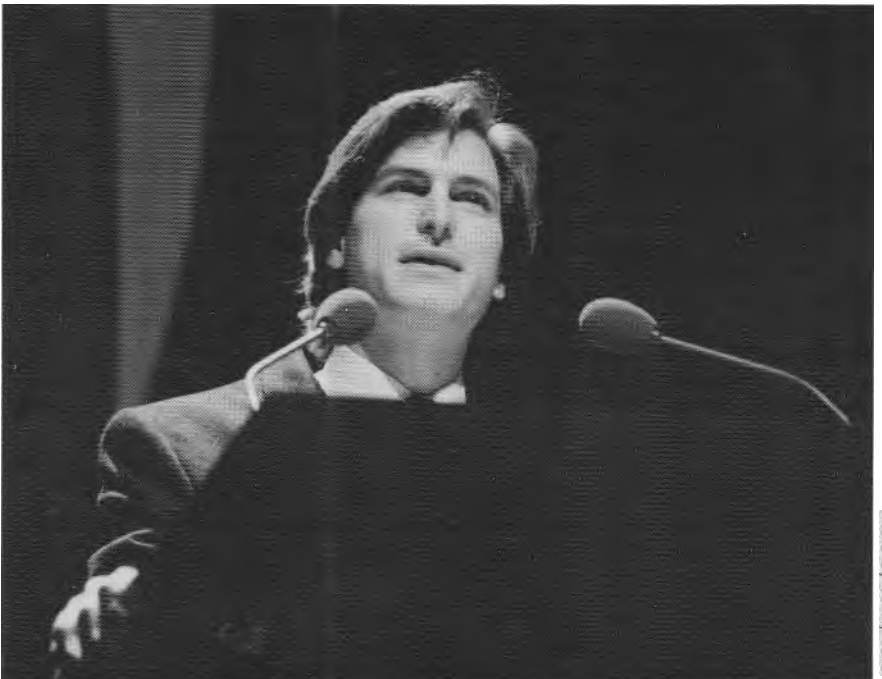
Apple's Steve Jobs knocked the socks off computer fans when he unveiled the mighty Macintosh in early 1984.

Christmas season and left the company in financially difficult straits. Excitement was focused on the Commodore's new Amiga. At $1,300, it was based on the 68000 processor and had special chips for graphics. It could show up to 32 colors on the screen at once in its 320-by-200 screen dots mode. It also had four sound channels that could play music and sounds without burdening the 68000. This was hot hardware, but it suffered from system software delays and Commodore's banking problems. Commodore was having trouble meeting conditions in its loan packages and had to suffer well-publicized renegotiations with its bankers. The delays and play in the press made dealers skittish about taking the machine on for the Christmas season.

By the end of 1985, AT&T had responded to the marketplace by introducing its PC 6300—an IBM-compatible. Tandy, as Radio Shack now called itself, updated its book-sized Model 100 into the Model 200 at just under $1,000. The 200 had 16 LCD lines on its screen, each 40 characters wide, and Microsoft's Multiplan spreadsheet software came standard in ROM in the machine. Also, third-party hard disks began to emerge for the Macintosh.

1986 kicked off with excitement about the new Atari and its new Atari 520ST computer. In the aftermath of the shakeout, Atari's parent company had eventually unloaded Atari to Jack Tramiel, who at one point had captained Commodore. The Atari 520 was the company's bid for a rebound. The machine had been widely called the Jackintosh after jack Tramiel and because it was aimed against the Mac. It was supposed to be a Mac with color for $1,000. For the $1,000, you got a color monitor, 68000-based processor, keyboard, 512K RAM, one floppy drive, and a mouse. You could have up to 16 different colors on the screen in a 320-by-200 screen dot mode, or up to four colors in the higher resolution 640-by-200 mode. The machine had custom chips that enabled it to do fancy and fast graphics and bit-image manipulations. It caused a great furor of excitement but suffered from scarce software adapted to take advantage of its special capabilities.

By mid-year, the Apple's Macintosh Plus was in place. It doubled RAM memory to one million bytes and doubled the disk capacity to 800K. It also added an SCSI ("scuz-
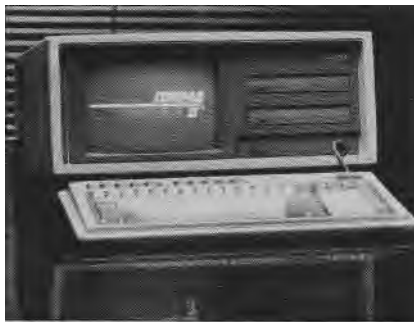
By 1986, what made the news were faster and faster chips—like those galloping at breakneck speed inside the Compaq.

zy") port to the Mac's back that vastly simplified connecting third-party hard disks and peripherals. Parallel to the Apple developments, everyone and his brother with a post office box was advertising low-cost—prices went as low as just over $500—IBM PC-compatible computers. Tandy's chairman, when introducing his own company's IBM-compatible line, called them the "transient no-name clones."

The spring was consumed by rampant rumors about IBM's impending unveiling of its new portable, code-named "Clamshell." The IRS was running a competitive bid for portable machines for its agents. The scenario was that IBM would win and be forced to show off its winning machine. Most were taken by surprise when Zenith won the contract. Later, IBM revealed its Convertible computer, and most people understood why it had lost. People even began to worry about IBM. Its PCjr had misfired. Its Portable PC had been discontinued. Its design of the Convertible seemed ill-done. Moreover, the workhorse PC/XT/AT line was being eroded by fierce price competition.

Leading Edge was one of the most widely advertised IBM PC "clones"; it sold for $1,495 and later dropped to $1,295. It imported a Mitsubishi-made machine, and, later, after a dispute with Mitsubishi, switched to importing a unit made by Korean Daewoo. Other Korean companies were in hot pursuit. Cordata marketed a Korean-made PC clone; Hyundai announced that it would sell one through Caldor, a mass-market retailer.

Meanwhile, a torrent of laptop computers—as the lightweight class of portables had come to be known—poured forth. Toshiba took first place

with its T1100 Plus computer in the battery-operated category; it was the favorite of the Spring Comdex show with its $4,500 AT-compatible T3100 with plasma screen and 10-million-byte hard disk—all packaged at 15 pounds. Zenith, Sharp, Bondwell, and, later, Wang all had entries, too.

In September of 1986, Apple unwrapped its completely remade Apple IIGS, newly fitted with enhanced graphics and sound capabilities and a 16-bit chip to hold its position and stave off inroads by the Commodore Amiga and Atari ST. The Apple IIGS was downward-compatible with virtually all old Apple II software, which gave it a vast base of programs. It included as standard equipment a professional music synthesizer chip that generated dazzling music and sounds.

Finally, Compaq was the first major manufacturer to present a machine based on the Intel 80386 chip. To most, the 32-bit 386 processor chip was the chip of the future (along with Motorola's 68020). Compaq made the future now. The problem remained that hardware had raced ahead of software. There was still virtually no software that exploited the power of the 386's antecedent—the 286—let alone any software for the 386 itself. The 286 in the IBM AT and in AT-compatibles had turned out to be just a faster 8086 chip. For quite some time, the 386 was destined to be the same—just a faster, faster 8086 chip.

The pace of the ten-year parade of technology across the BCS general meetings' stage had been furious. Computers' base memory had increased a thousandfold from a puny 256 bytes to a routine 256K. Ergonomic keyboards and high-resolution video displays had become standard and had replaced toggle switches, readout lights, and old teletypes. The hackers, hobbyists, and homebrew kit-builders were gone; the BCS membership reflected the professionals, business people, and students who saw the computer as a way to get things done—not as something to put together.

For many companies the price of this progress had been huge. The path was littered with once-weres and might-have-beens. Nevertheless, as 1987 begins, the entrepreneurs and most of the big companies seem ready to launch The Boston Computer Society's second decade of personal computer revolution.

FLASHBACKS

1977:
Humble
Beginnings

The plan is hatched. It's winter. Hunched over his desk at Boston's Commonwealth School, teenybopper Jonathan Rotenberg starts thinking about computers. By February 1977, he's ready to roll—down the hall to a makeshift meeting room in the library, site of the first BCS meeting. Attendance: four—not enough to compensate for the room's lack of heat. Clearly, more people are needed, if only for health reasons.

*　*　⚹

All chiefs, no Indians. Now rolling, the BCS gathers little moss. Cofounder Richard Gardner and Jonathan start holding regular meetings. Some visitors come, but none is willing to cough up the $5 membership fee. For the first six months, membership hovers at zero. (At least the membership roster requires little upkeep.)

*　*　⚹

People begin signing up for membership in dribs and drabs at the monthly meetings. The BCS becomes an entity. Early meeting topics: A HomeBrew 9900 Computer System; Community Use of Personal Computers; The Minicomputer Goes to a Racetrack; Computers Sailing in the America (sic) Cup; Functional Programming; the ECD Micromind.

1978:
Taking a Stand

By spring, meetings draw in excess of 80 people, albeit a fair amount still visitors. But membership climbs to 73 by summer.

*　*　⚹

In October, the BCS puts on "Home /Business Computers '78," a day-long show at Boston University that attracts 1,000 people. Admission is $2

Where it began. Jonathan's alma mater, the Commonwealth School, which gave the BCS its first free meeting space.

RESOURCES

January 26, 1977

Jonathan Rotenberg
17 Chestnut St
Boston MA 02108

Dear Jonathan,

A Boston area computer group sounds like a good idea. Several others
have already asked me about this. How about the Boston Computer
Society?

Sincerely,

Richard Gardner

Richard Gardner

---

17 Chestnut Street
Boston, MA 02108

BOSTON COMPUTER SOCIETY

The
Boston
Computer
Society
17 Chestnut Street
Boston, MA 02108

Early BCS logos. The very first was drawn two hours before the premiere meeting in 1977.

The Boston Computer Society presents

HOME/BUSINESS COMPUTERS '78

An exposition of the state of the art in microcomputers

WELCOME
TO THE WORLD OF
MICROCOMPUTERS

The First New England Microcomputer Resource Handbook

The complete guide to low cost home, business
and school microcomputers for computer
owners, prospective purchasers and novi...

Do you use the
Commodore PET Computer?

You're not alone! Hundreds of people in
the same problems and interests you do
about their computer, desire to exchange
solutions to technical problems.

The PET Users Group of Massachu
PET. Here's what we have planned for...

- Cassette programs exchan...
- Tutorial sessions on how t...
- 'How to' groups for utili...
- Sneak previews of new s...
- A newsletter with times...
- Dozens of exciting, inte...

Who will be there? Home
scientists, accountants, lawy
entrepreneurs, to name a few
...ters and when: The User...
...ters and ... or Waltham

The Boston Computer Society announces its second annual

Special December Meeting

SEMINARS
Something for everyone, whether you currently use microcomputers are
in the process of buying or are just starting out. Topics include "Small
Business Computers - The Purchase Decision," "Microcomputers in
Education," "An introduction to Computers and Computer Programming,"
"PASCAL: The Next Generation Programming
language," "Synthesizing Music with Microcomputers," and "OS User Group. You'll have the opportunity to hear some of the
top authorities from the Northeast, including Carl Helmers, editor of BYTE magazine, and Dick Brown, president of The
Computer Store.

EXHIBITS
You don't have to wait a year for another computer show to come to Boston
to see the latest products and services. This year's December meeting includes a
complete exhibit area. You'll see the local computer stores demonstrating all of
their computers and accessories. Software houses will show you their newest creations in personal, business and educational
packages. Computer club and user group representatives will be on hand with their latest newsletters and user services.
Publishers will show you books and magazines covering all topics of computer use. There will be plenty of equipment to try your
and dozens of people to talk to.

---

to the general public. People join at the show; membership leaps to 225. Things are getting unwieldy, and Jonathan begins in earnest his solicitation for volunteers, a perpetual appeal that is to become one of the hallmarks of the BCS.

An unofficial group of "organizers" begins to meet regularly on Saturday mornings at the Commonwealth School. They bring lots of cups of coffee, not to drink but to keep their hands warm because there's no heat. When Jonathan suggests spending funds to put a phone in his bedroom to handle calls about the Home/Business show, the advisors balk. Good God, such an expense! What if it flops? What can this kid be thinking of? But they say OK anyway. (This is but the first of countless initially-apoplectic Board reactions to Jonathan's grand schemes; in time, they get used to it.)

* * *

Volume 1, Issue 1, of The BCS Update, a xeroxed monthly newsletter, appears in November. It's the precursor of what you're reading now.

1979: Year of the User Group

The Commodore PET Group, the BCS's very first user group, meets in May. The First New *England* Microcomputer Resource Handbook, the BCS's very first book, comes out in June. Fliers announce 80/Boston, the BCS group for TRS-80 users. This group is soon publishing a regular newsletter. The group also designs the very first BCS T-shirt, a French-cut number with glitter that all falls off. Corporate membership is introduced. A very special December meeting features seminars, exhibits, door prizes, and refreshments.
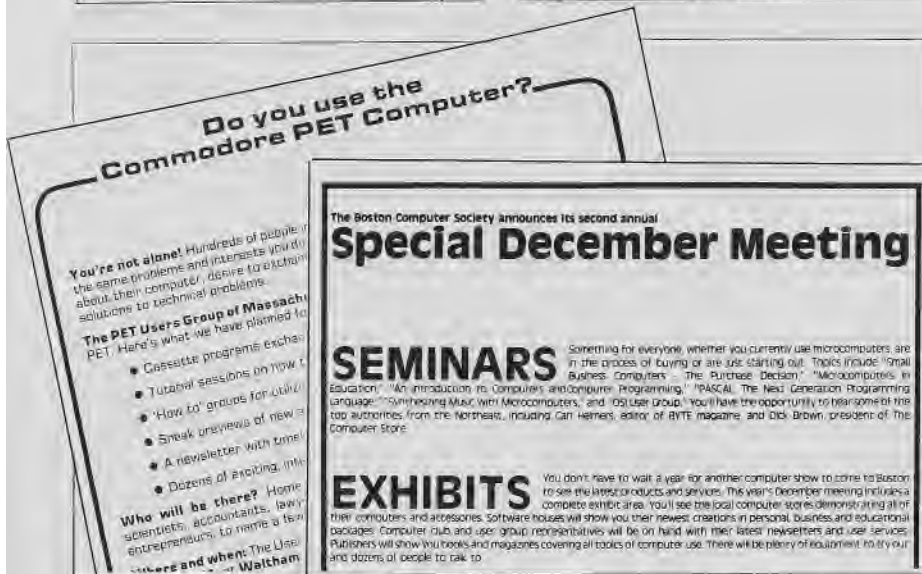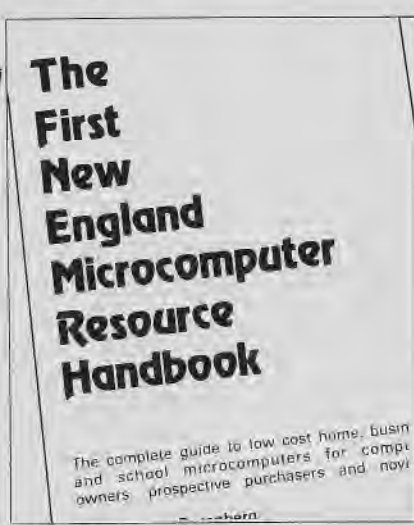
The *Update* publishes the official BCS phone number and requests that people call after 4:30 p.m. That's when Jonathan gets home from school.

1980:
The CS, Inc.

The big time. We find a lawyer to prepare and file the necessary papers, and the BCS is incorporated. The loyal frozen-fingered organizers from the Commonwealth School days form the first Board, which begins formal monthly meetings. First recorded Board minutes are scribbled in pencil on white lined paper.

* * *

The BCS rents a tiny office in downtown Boston. Board members again recoil at the financial commitment, especially since all expenditures over $200 are still hotly debated. To add to their worries, Jonathan packs up and takes off for college. Will he lose interest? Will any members sign up? Who will be stuck with the bills?

* * *

The very first staff person is hired; she works part-time. Jonathan buses back and forth from campus on weekends, a habit he will continue for four years. (He's too busy to get his driver's license, so all meetings revolve around the Boston/Providence bus schedule.)

* * *

More volunteers start user groups: Apple, Atari, Source/Micronet, OSI, Pascal, North Star.

* * *

In November, the BCS sponsors the First Forum on the Future of Personal Computers.

Photo by Sonny Tarbi

Photo by Sonny Tarbi

1981:
Fixing up the Office

Membership breaks the 2,000 mark by June. The tiny storefront office gets its first full-time staff person. Whenever she wants to leave, even for a minute, she has to clear out all the visitors, wait for the phones to stop ringing, throw on the answering machine, tack one of those plastic clocks on the door, lock the door, and barrel out before anyone stops her. Is this any way to run an office?

*   *   *

Jonathan mentions to the Board that he wants to hire a design team to develop an "identity system" for the BCS, complete with logo and matching stationery. The Board does a collective throat-clutch at the estimated cost, then gives in. Chosen logo is a hit, and the design team is still with us.

*   *   *

Jonathan proposes that Apple/Boston sponsor a big event called "Applefest '81" in June. Board members quake. The show is a huge success, but the air conditioning is not—both people and computers pass out in record numbers from the heat.

*   *

It's official. At summer's end, after months of waiting and filing of papers, we secure our nonprofit status from the IRS. The Second Forum on the Future of Personal Computers, held in October, draws overflow crowds to hear the panel of luminaries.

*   *   *

The first *Calendar,* published in August, lists 10 groups, including the first meeting of the Business Group. One of the speakers at that month's General Meeting is Mitch Kapor, then a still-anonymous BCS member; his
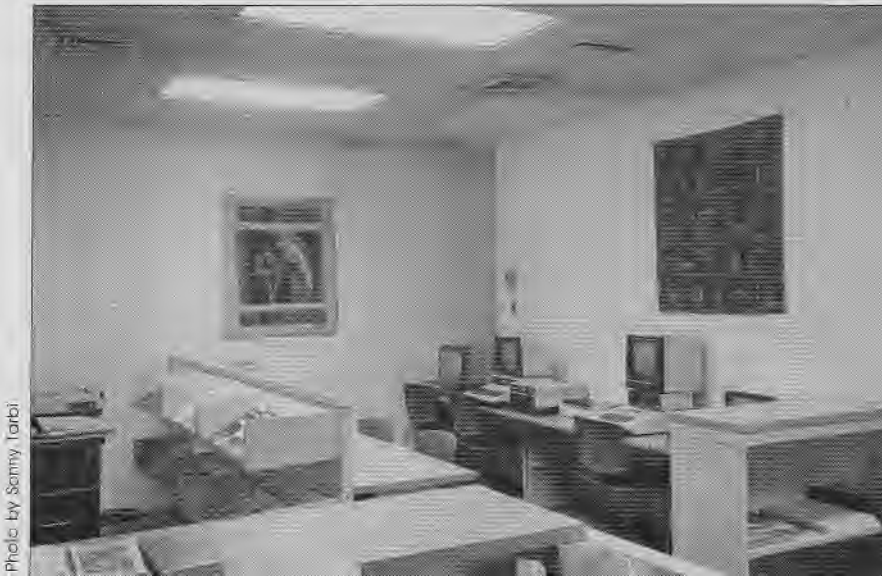
company is called Micro Finance Systems, and he's listed as the author of VisiPlot and VisiTrend. In retrospect, very small potatoes indeed, but Lotus and *1-2-3* are still lightyears away.

1982: Hitting the Big Time

The lean years are over, and the BCS is regularly recognized in the press, including articles in The Wall Street Journal, Christian Science Monitor, AP, UPI, *People* magazine, and a plethora of lesser-known prints.

* * *

Membership reaches 3,000 in January; the membership fee is $18, and the membership application lists 13 groups. The office hires part-time help. Now one person can stay in the office while the other runs to the restroom. This is definite progress. More and more visitors drop by, supplemented by an occasional lost tourist or bum. The tiny office gets tinier. The phone rings more often. We install new lines, which ring constantly. Jonathan calls daily and arrives by bus on Friday afternoons.

* * *

IBM introduces its new personal computer to BCS members at the November General Meeting; the BCS IBM User Group holds its first meeting in January. Initial discussions for creating a Computer Discovery Center take place at the March Board meeting. The BCS considers going national.

1983: At a Turning Point

Membership has doubled in a year's time---by January, it's reached 3,300. We hire an outside firm to
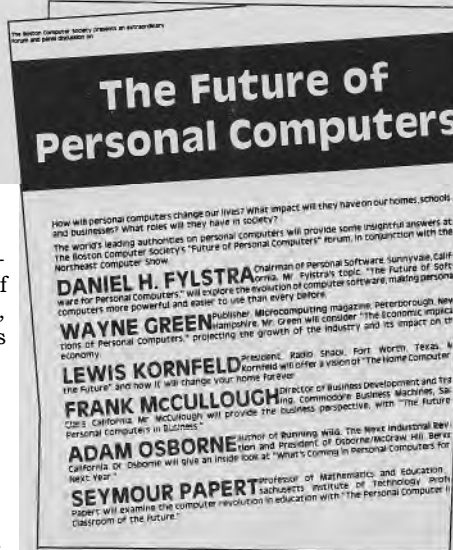
* * *

Reason to smile, The BCS member with the mustache grins as he cogitates about some newfangled ideas he has for a software program. A few years later, he shaves the 'stache, sports loud-looking shirts, gives his creation a catchy name, and rides off into history. Meanwhile, Board member Allen Sneider, on left, thinks to himself, "Now, if Mitch would only tell me what he's thinking..."
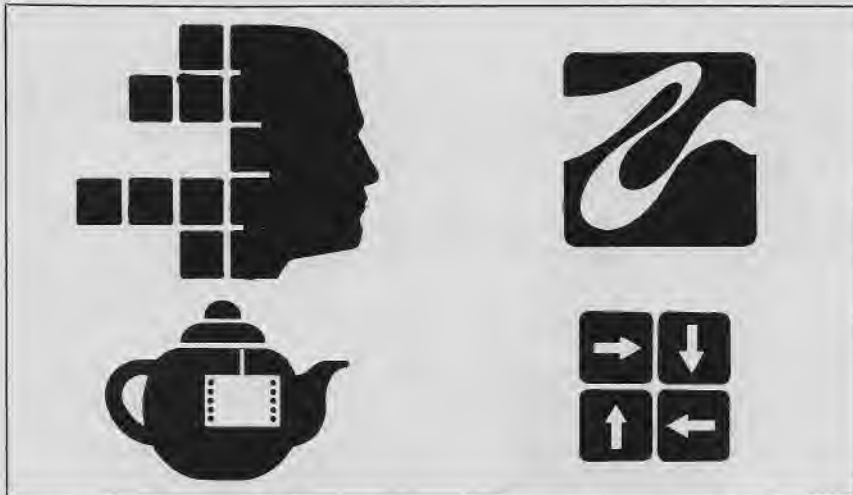
BCS logos refined. Our now-familiar cursor-button logo, created by Doliber Skeffington Design, along with some initial design concepts that didn't make it.

THE FUTURE OF PERSONAL COMPUTERS
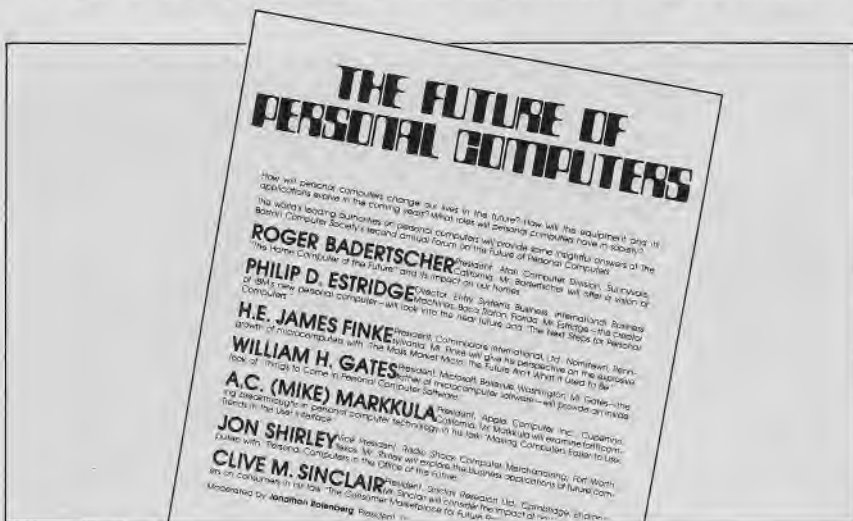
The tiny office gets tinier. We add first one, then another staff person, the latter hired to coordinate the ever-increasing user group activities. This brings the staff total to three full-timers plus an almost-full-time temp. We add more lines to the phone, which rings and rings. The office attracts more visitors, more active volunteers, and more tourists and bums. The business manager no longer has a desk or phone; she slogs from location to location, including the upstairs firm of Laventhol & Horwath (home to Board member Allen Sneider), which gives her shelter. She's there so often, the L&H personnel department thinks she's a permanent employee. Staff is clearly getting desperate—it's either a move to a larger office or admission to the funny farm. More and more publications carry stories about the Society, and Jonathan and the BCS now appear in a variety of local and national TV spots. Staff becomes inured to camera crews traipsing through the office.

* * *

A publishing house expresses interest in producing a set of computer-related books bearing the BCS imprimatur; offers from other houses will follow. A public relations firm expresses interest in providing pro Bono services to the Society; this, too, is the first of several offers.

1984:
More Services

Membership again doubles in a year, topping 10,000 in January. In the nick of time, staff moves in February to a larger office in the same building. Volunteers help hand-carry computers and files. A fourth full-time person joins the fold. Donations of both hardware and software pour in to fill the new space, and the Resource Center becomes a workable reality. User groups proliferate, and with them, active volunteers, now known as "activists." We publish the first BCS Buying Guide in December.

1985: Reorganizing

Staff creeps up to seven. Membership hits 17,000 by September, all of whom seem to call the office at once. Phones jangle off the hook; more lines are added. Manning the reception area becomes a test of mettle—less-than-hardy souls can burn out in a week. Survivors, wearing their badges proudly, join the ranks of the slightly unhinged staff. User group count reaches 41 in February, not including satellites. Addison-Wesley publishes our first book, Things the Manual *Never* Told You.

The Society's internal structure gets a good once-over, and big changes result. The Board alters in size and structure, with more intricate levels of responsibilities. Striving for a more professional demeanor, certain Board members no longer trade spitballs at meetings. The end of an era. The Member Services Committee and Conference are created to better serve all the new groups and activists. More people than ever before become involved in running the BCS.

1986: Catching up with Growth

As the new year starts, staff surges to eight. As the new year wanes, membership surges to 23,000. We finalize our first overseas affiliation, with the Denmark Personal Computer Society. Thirty-seven of the 50-odd active groups now publish newsletters. Activists number well over 500. The office begins to resemble a 7-Eleven—volunteers scurrying in and out at all hours of the day and night, every day of the year (yes, even Christmas). Calendar lists over 100 meetings and events each month for members. We start planning for our tenth birthday celebration. The future is bright.
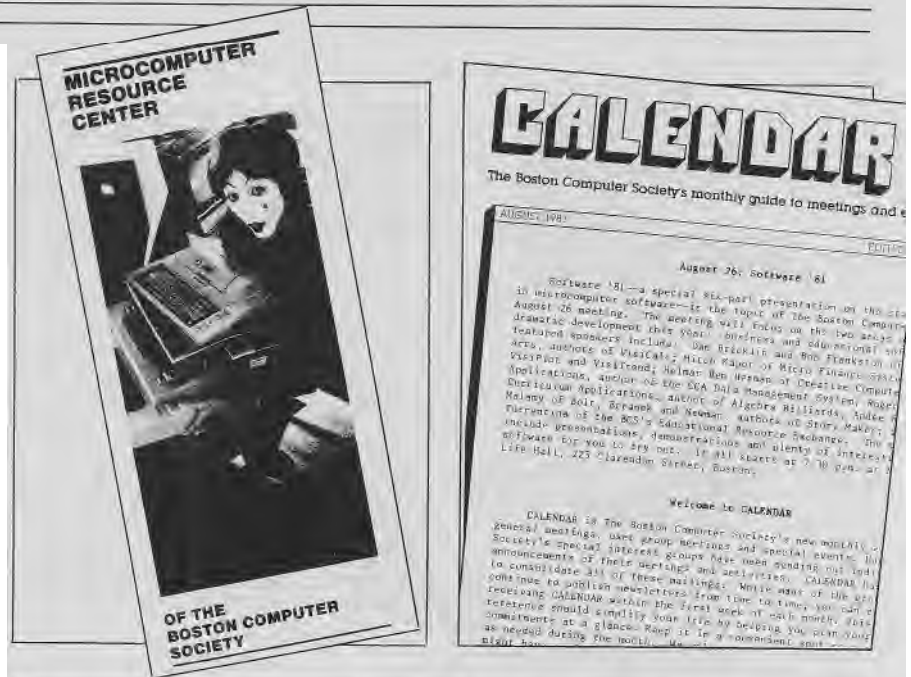
Before and after. Views of the current BCS office.

The good, the bad, and the bizarre

Reach Out and Touch Tone. The Board finds itself in a dither over whether to choose 6502 or 8080 as the official BCS phone number.

Longest TV Appearance: When Jonathan arrives at a live Boston TV show, he discovers all the other guests have cancelled.

Worst Press Mention: A BCS newsletter publishes detailed instructions on how to crack Lotus 1-2-3. Board member Mitch Kapor is less than amused.

Best News for BCS Males: Cosmopolitan magazine lists BCS meetings as one of the best places in Boston to meet men.

Worst News for BCS Females: Believing the above.

Best News for Start-ups: Many companies, including Alpha Software, Software Arts, and First Micro Group, come into being and find staff through the BCS.

Kiss of Death for Start-ups: Any company ever written about by Mary McCann in Computer Update goes out of business shortly thereafter.

Best Encounters: Steve Jobs meets VisiCalc's Dan Bricklin for the first time at a BCS meeting. Apple's president, Mike Markkula, meets IBM's PC president, Don Estridge, for the first time at a BCS meeting.

Worst Encounters: Adam Osborne, nettled by an article about him in Computer Update, labels it a bunch of rubbish and cancels his membership. Wayne Greene, likewise out of sorts, later does the same.

Shortest Career at the BCS: One receptionist quits after less than two weeks on the job, citing mental anguish caused by answering the phones.

Longest Commute to a Meeting: Esther Dyson, scheduled to speak at a General Meeting, gets fogged in in New York. Her plane finally arrives over Boston, only to get fogged out. She lands too late for the meeting, turns around, and goes home.

Best Reason to Halt a Meeting: Board members refuse to continue with the agenda until staff breaks out the Famous Amos cookies.

Great Moments Presenters Would Rather Forget: When David Ahl presents his roller-coaster movie, he can't get it started. When Coleco's Arnold Greenberg presents the bug-ridden Adam, The Wall Street Journal hammers in the big coffin nail the next day. Just as Phillipe Kahn is assuring the audience how safe his keyboard protection device is, his computer blows up. When Androbot comes the first time to demo its robot, the robot can't make it—it isn't ready.

Then there was the interactive video program at an Apple/Boston meeting that wasn't interactive, and the artificial intelligence program that wasn't intelligent enough to understand its presenter's commands. For the tone-deaf, there was the Kurzweil music demonstration in a hall with the wrong acoustics; and for agile execs who type with their pinkies, there was the debut of the IXO Telecomputer with its little bitty keyboard.

Most Dramatic Meeting: The introduction of the Macintosh featuring Steve Jobs, Steve Wozniak, and the design crew. It was staged by a Hollywood production crew and cost more than $60,000 for the 90-minute presentation.

Like, Uh, Wow: Dr. Timothy Leary communes at a General Meeting. Not digging his act, one member stands up, tells him he's full of you-know-what, and stomps out.

Budget Buster: When Jonathan moves the office out of his bedroom, the annual BCS budget is $1,000.

First Substantial Financial Donation: From Sinclair Research, $10,000 in 1981.

Contributing to the Delinquency of a Minor: Show promoter Gerry Milden invites Jonathan out for a drink. Jonathan declines; he is 15.

You Know You've Arrived When: We finally rent a normal meeting hall, meaning ecstatic Board members no longer have to fold and unfold the chairs for every General Meeting, or sweep the floor afterwards.

Hold all Calls, Please: Business contacts who call BCS headquarters in Jonathan's bedroom office are told he's out of town. He is—at summer camp.

Most Interesting Consultants & Entrepreneurs Meetings: When companies talk about their start-up successes.

Second Most Interesting Consultants & Entrepreneurs Meetings: When the same companies return and talk about Chapter 11.

Excuse me, but is that a booth on your roof? Jonathan and Mary careen around corners in downtown Boston, holding the BCS show booth on the roof of Mary's car as they head for the Northeast Computer Show. Mary drives with one hand, holds booth with the other. Jonathan hangs out the passenger window so he can get a better grip.

Most Popular Software Package: Someone sneaks a program featuring a naked woman onto one of Apple/Boston's public-domain disks.

Things We'd Rather Forget: EasyLink. M.M.

BCS USER AND SPECIAL INTEREST GROUPS

Amiga

This group is for people using Commodore Amiga computers. It holds two meetings a month, one general in nature and one for members having more technical interests. It also publishes a newsletter.

Apple

One of our very first groups, this one is alive, well, and going strong. It offers monthly meetings with guest speakers, special discounts for members, its own bulletin board, a growing public-domain software library (including free catalog), and a regular quarterly newsletter (which may soon turn bimonthly). It has some interesting speakers and demonstrations lined up for the year ahead. Come join them. (Richard Bloom)

Artificial Intelligence

Fast becoming one of our most popular groups, the AI Group is devoted to a subject which is currently one of the most popular and controversial in the industry. Group director Park Gerald does a wonderful job at lining up interesting and provocative speakers, keeping track of the newest AI books and software, and informing members of latest developments through the group newsletter.

Atari ST

The Jackintosh Boston User Group, commonly known as J-BUG, was formed in February 1986 for Atari ST users. J-BUG sponsors two meetings each month, a public-domain library of over 2,000 files, a bulletin board, and a bimonthly newsletter. Our first meeting, our General Meeting, which serves as a forum to new members and users of the ST, usually has a guest speaker and shows the latest ST products. The second is our Tech or Special Interest Group meeting. J-BUG has special interest groups for C, Pascal, Modula-2, Forth, Fortran, Midi, BASIC, and LISP.

With over 900 products currently available for the ST, the recent introductions of desktop publishing, two- and four-megabyte STs and laser-printer availability, the release of Macintosh and IBM emulation, and the finest software for business, productivity, education, and recreation, the group promises to grow and expand. It plans to put on an Atari Fest this coming summer. *(Alan Glick)*

Atari 8-Bit

This group supports all products for 8-bit Atari computers. We have monthly meetings, scheduled for the second Wednesday of each month, at which we review new products, have

Question-and-Answer sessions for problems, and cover various other topics. We also have theme meetings on communications, music, word processors, databases, application and utility programs, and other subjects; as well as speakers from major software development groups and magazines. We have a large public-domain library of over 100 disks, and a bulletin board system that's operational 24 hours a day, seven days a week. (John Faber)

Business

Started by Allen Sneider several years ago, the Business Group went through a period of great activity followed by a period of slow decline. It is currently being revived under the directorship of Les Squires and promises big things for the future. We expect that in no time it will be one of our largest groups.

Commodore

This group has been around for several years and continues to provide a number of fine services for its members. Its monthly meetings fea-

ture lively speakers, and it sporadically publishes a newsletter. It has been very successful at cosponsoring fairs with other New England-based Commodore user groups.

C & E

The third largest BCS group, the Consultants & Entrepreneurs Group is for people interested in business management, particularly in the management of high-tech companies in the microcomputer field, whether hardware, software, or related products. It's also for people who want to learn how to manage their own consulting practices. The group

publishes a newsletter 11 times a year, ranging in size from 16 to 32 pages. It offers meetings where people learn about various business topics from the leaders of microcomputer companies, and from bankers, venture capitalists, accountants, and attorneys. It also offers meetings where people get together to help each other by exchanging information, ideas, leads, and contacts. It also cosponsors courses on various business topics. (John Sturm)

CP/M

In 1976, a California company called Kentucky Fried Computers introduced its first product, a floating-point math board for S-100 bus-based PCs. It renamed itself North Star in time for its next product announcements, the North Star MDS and the Horizon. Through word of mouth and bulletin board ads, a growing community of North Star users gathered in 1980 for their first meetings, which were held under the auspices of Computer Mart in Waltham, Mass. The fo-

cus of the group gradually broadened to accommodate all CP/M users and machines. In 1981, the group became an affiliate of the BCS.
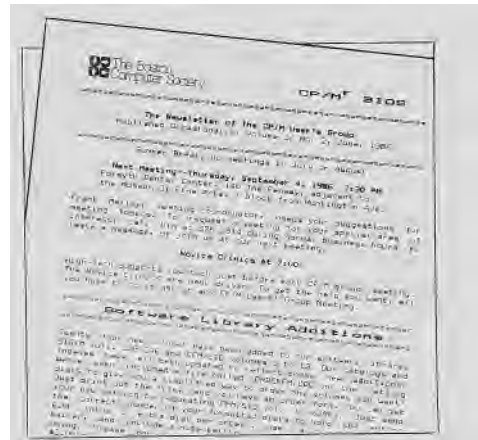
As the CP/M operating system enters its second decade along with the BCS, the CP/M User Group continues to provide support and encouragement for users of CP/M software and its supporting hardware, with special emphasis on S-100 and X-80/8080-based systems. The group maintains an extensive and up-to-date CP/M public-domain software library and provides copies in a variety of machine-dependent formats at nominal costs. Monthly meetings are held in Boston and begin with a novice clinic. Visitors are always welcome! (Brad Thompson)

Database

In existence for some years now, the Database Group offers monthly meetings on a variety of subjects such as RBASE, DBASE, and Paradox. It publishes a quarterly newsletter for members.

Digital

This group provides a goldmine of user and technical support for most of Digital's PCs. And for those of you Rainbow users who feel lost, cry no more—between 15 and 100 Rainbow users show up at each meeting. Meetings are held the second Monday of every month without fail, even if it's a holiday—that's how dedicated these group members are! Our meetings have the largest attendance of any Digital user group in the United States and are a lot of fun besides. Come join us! (Mark Bornstein)

Disabled/Special Needs

This group provides information to disabled individuals, their families, and the professionals who serve them regarding the latest developments in computer hardware and software. A large population needs this information—those physically disabled individuals whose lives can change from passivity and boredom to activity and involvement once they have access to computers. The group performs a networking function to guide people to the right source of professional help when they need it and to a convenient source of volunteer help when it's available. Its primary focus is on physically disabled, non-vocal, visually impaired, hearing impaired, and mentally impaired people. Problems affecting students, people desiring more independence in living, and adults interested in vocational opportunities are among the topics of interest to group members. The group holds monthly meetings and produces a regular newsletter. (Arthur Wood)
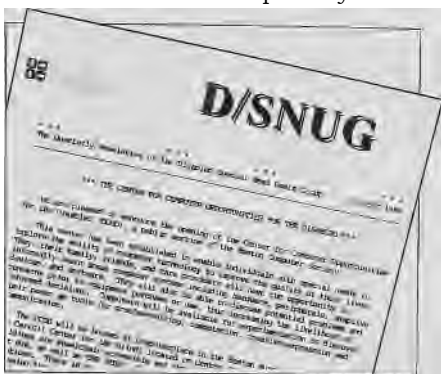
Education

Over 2,000 people interested in computer education belong to the Education Group. An equal number of members are computer educators, educational software reps, and families interested in information for their children. The group features such impressive speakers as Seymour Papert at its monthly meetings, and it publishes a bimonthly newsletter. 1987 will bring Tom Snyder, who will talk about the role of computers in the classroom and present some of his newest creative software. Alan November, of MASSCUE, an organization of computer educators, will talk about high school projects he's done. Reps from Apple, as well as educators from leading colleges and universities, are also interested in presenting programs.

Janet Gould, Pat Hand, Joan Hamilton, Michelle Harlow, and Gerri Abrams, all educators involved with computer education in their school systems or universities, are the people who make this group work. Come join them! (Gerri Abrams)

Graphics

The Graphics Interest Group was founded four years ago to provide a forum for exploring the broad reach of computer graphics into business, home, industry, and art. Today, the group is over 2,300 strong, with meetings on the fourth Monday of each month, covering topics ranging from graphics software development tools to applications that combine computer graphics, sound, and video.
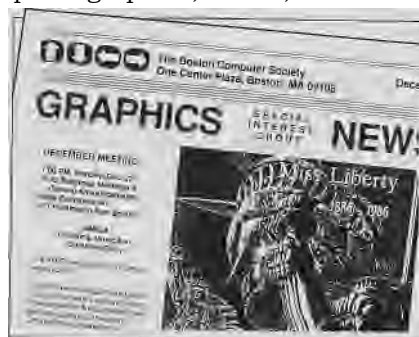
This past December, the group resumed publishing its newsletter with a beautiful, brand-new format. (Cathy Betz)

Heath-Zenith

This group has been in existence for a few years now and holds regular monthly meetings for its members. Anyone interested in Heath-Zenith machines or related products should join.

Hewlett-Packard

This is a small but energetic self-help group, where meetings are devoted mainly to discussion of members' problems and how to solve them. A regular group of diverse and interesting people come together monthly to talk and help each other out. For three years now, we've been exchanging tips and information about HP computers, printers, plotters, and related equipment. (Roland Jahn)

IBM

This year is the IBM Group's fifth anniversary. Its first meeting was held in a small classroom at MIT in January of 1982. Then as now, the coordinator was Mike Rohrbach, who has seen membership grow from 40 to almost 12,000. The group's 150-plus dedicated volunteers help offer services that most nonprofits would envy. Its monthly newsletter, begun within a month of the group's founding, has grown to 50 pages under the direction of Art Bevilacqua. Monthly meetings

include a main assembly preceded by the gathering of 10 subgroups. Under the direction of Marilyn Seelye, the group conducts beginning-to-advanced-level weekly workshops on subjects from introductory DOS to Lotus 1-2-3. The group offers 100 dial help numbers on a variety of topics, with more being added each month. Doug Roberts had the first major vision for extended educational outreach in 1984: He videotaped and marketed his successful summer Assemblers Forum for those who couldn't be there. His series of lectures has since become a full-scale annual project.

In 1986, the group hired its first employee, established an office in Newton, and issued a "Newcomers Guide." Doug Chamberlin expanded the bulletin board, and Ruth Green wrote an easy manual to help use it. Group members are forging ahead to meet the future and invite all interested people to join and meet it with them! (Jan Buerger, Barbara Lee Chertok, Doug Roberts)

International

If you're a BCS member living in New England, you may never have considered the importance of the BCS to those who aren't so fortunate. But our members who live in such remote places as Zaire, Samoa, and Poland depend on the BCS for the information and support that many of us locals take for granted. International membership doubled in 1986, and a recent survey of these members indicates that they represent a broad range of interests, expertise, and occupations.

The BCS has other international links. Recently, the Personal Computer Society of Denmark became the first BCS overseas affiliate. The Danish group is modeled after the BCS

and has profited from the practical and moral support of many BCS members. Although still in its infancy, the group provides services that BCS members may enjoy when visiting Europe. Phone support and bulletin board access are the most attractive. We hope this affiliation will be a model and inspiration for others. With the growing concentration of members in countries such as Australia, Germany, and France, there should be the human resources to make this possible.

Finally, the BCS offers pre-departure support if you wish to compute abroad. Voltages, Bell/CCITT, network access, national keyboards, phone jacks, plugs, even paper length, are some of the incompatible standards waiting to delight you. Through our network of volunteers, we'll try to prepare you for this experience. Upon your return, we hope you'll share your experiences with us. With your help, some day we'll be able to say, "Your BCS card—don't leave home without it!" (Beverly Kleiman)

Investment

This group is for all you folks interested in investment-related software. Under new directorship, the group is currently trying to get volunteers to put together its newsletter and to help plan meetings, etc. Join them!

Kaypro

The Kaypro User Group (called BOSKUG) sprang up in 1982 to support BCS members who used Kaypro 8-bit computers. While at the time most members used CP/M machines, they were joined in 1985 by MS-DOS users, when Kaypro begin selling 16-bit IBM compatibles. The dilemma: how to accommodate both segments? Well, BOSKUG has been doing just fine at pleasing everyone and offers a full array of services to

members, including meetings, a regular newsletter, a bulletin board, a public-domain library, special educational programs, and much more.

Laptop

This group started out a few years ago as a subgroup of the Radio Shack/TRS-80 Group, for folks who
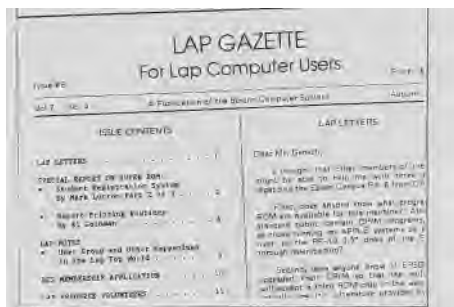
used the Radio Shack Model 100. It quickly spun off on its own, and today continues to attract and support users of other laptop computers, too. One nice event, in addition to regular meetings, is the group's annual summer picnic, where members manage to balance not only their computers but the potato salad as well, on their laps! The group has a public-domain software library that is just getting on-line and publishes the Lap Gazette quarterly. It hopes to create a Lap Users Corner at the BCS Resource Center in future months. (Bill Gerber)

Legal

Founded over three years ago with little more than three members, the Legal Group's ranks have since swelled. The group presents lively monthly discussions on computer law and law office automation. Past meetings have included such speakers as Lindsay Kiang, general counsel for Lotus; a panel on software developer liability; presentations on networking law office computers; and a time and

billing software fair. (Rich *Anders,* Mike Lytton)

Logo

One of our oldest groups, the Logo Group is for people interested in using the Logo language for teaching computer science. Still going strong under the directorship of Nola Sheffer, the group publishes a newsletter and holds monthly meetings featuring speakers demonstrating

Logo programs and talking about related ideas for a variety of machines.

Lotus

This group began about three years ago when Lotus Development Corp. ran a local ad asking if anyone in the Boston area was interested in starting a user group for its new product,
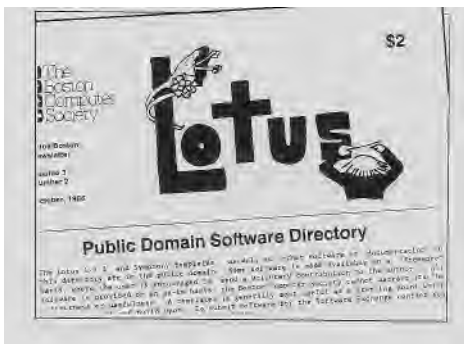
1-2-3. People were indeed interested, got together for a few meetings, and then decided to become affiliated with the BCS. The group now holds monthly meetings featuring speakers delving into different aspects of *1-2-3,* Symphony, or related products. It also offers a public-domain software exchange and a monthly newsletter. *(Allen* Moulton)

Macintosh

The Mac Group began with six members and one meeting in March of 1984. Today, we are the second largest BCS group, with 5,300 members on over six continents, and we hold 10 meetings a month in eight

different locations over central New England. Our subgroups cover the Design, Legal, Medical/Dental, and Technical/Programming aspects of the Macintosh. We produce a monthly 40-page newsletter and distribute 1,500 public-domain/shareware disks each month as well as operate two electronic bulletin board systems. (Robert Hafer)

Medical/Dental
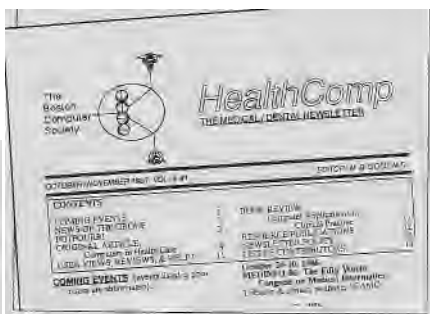
The M/D Group keeps all our medically inclined members informed of current happenings in this broad field. Under the directorship of Dr. Donald Sherman since its inception a

few years ago, the group meets twice a year and publishes a newsletter.

MicroVAX

One of our newest groups, it's small but gaining organizational steam. Although some consider the MicroVAX to be a minicomputer, it's beginning to blur the boundary of "micro" and "mini." New VAXes cost under $10,000 and are being bought by those who might have bought MS-DOS machines a short time ago. Their operating systems aren't as easy to manage as most micro-built ones, but they're powerful and flexible. Their combination of high power and low price make small VAXes a special challenge to the beginner. In the spirit of user advocacy typical of the BCS, the group hopes to open up the "mystery of the micro-mini" to members. (Shava *Nerad)*

Music

The Music Group *came from the need* to know
The desire to find, both high and low
People who had a piece of *the* puzzle
And could together *remove* the creative muzzle.

MIDI had come like a big gun to town
But reports few *and* scattered turned *smiles* into *frowns.*
Sampling sounds made quite a splash
But who could come up *with all* of that cash?

Software created to answer the call
Came with documentation to confuse us *all*
And support lines to *help* when you had a question
Left it clear as cement, feeling you had *been* bested.

But now *we're* united with our pool of skill,
Of talent and *knowledge,* experience; still
It will *take* quite a lot of effort by all
To make sure this ship keeps *on* sailing this *tall.*

So come one *and come all* with a

song in your heart
We still have room, come do your
  part
To be with a group of which to be
  proud
As we pave the way to the future of
  sound.

(Robert Calcagni)

NEC

Faced with a serious lack of information for the new NEC APC I had just purchsed, I formed the NEC User Group in March 1984. A dozen people met in Brian Russell's living room for our first meeting. Since then, we've grown to over 300 members throughout the United States and abroad. Our newsletter, CommandLine, first published in August 1984, quickly became recognized as the premier NEC information resource.

All major introductions by NEC, including pinwriter printers and NEC's newest 80286 machine, the APC IV, have been previewed at our meetings before they went to market. Some meeting highlights have included: (1)
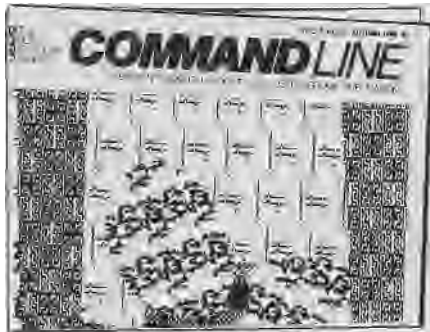
a panel discussion with top NEC management in April 1985; (2) a field trip to Woods Hole Oceanographic Institution, courtesy of Ken Prada, in February 1986; and (3) a field trip to NECIS national headquarters in Boxborough, Mass., in October 1986 to preview unreleased hardware and software. (Peter Van *Ness)*

Networking/ Multi-Users

The most recent revolution in the world of computers involves a development that will affect us for the next ten years and beyond: connectivity! The Network/Multi-User Group continues the BCS tradition by providing valuable information on key issues relevant to members—new products, network management techniques, micro-mini-mainframe connectivity options, multi-user software, and other significant subjects. The group plans to test new products and train new members. Meetings include a combination of manufacturer presentations, panel discussions, educational seminars, and hands-on demos. Join us for what promises to be an exciting second decade! (Russell *Frye)*

Nonprofit

The purpose of this group is to help nonprofit organizations with their computers. After a hiatus, the group is becoming active again and needs help from volunteers to plan meetings and start other services.

Osborne (BOG)

Adam Osborne now markets reasonably priced software. His former company, Osborne Computer Corporation, with its bundled software, gives many a chance to enjoy PCs with a CP/M 8080, eight-bit portable. BOG's past director, Dr. Margaret LeGendre, had a baby and is now a member of the BCS Board of Directors.

The Boston Osborne Group has experienced the above and continues to hum along. Our public-domain software library contains over 350 disks of good stuff, with more coming. Hardware, software, service, and help are readily available. Young, old, and middles enjoy doing things that once only computer gurus did. New members pick up the ball as others convert to new machines. BOG's local bulletin board links members to 26 boards across the country; the group holds two monthly meetings. (John *De*Meritt)

Otrona

The group was started in November 1983. Although the company folded in 1985, and although group members now meet only via the regularly published newsletter, members have accomplished their ultimate goal—to use their computers to get real work done.

In the beginning, when the group met regularly, members got to know not only each other, but the Otrona staff and other Otrona user groups from around the country and the world. Everyone was attracted to the Otrona for the technical excellence it offered, and loyal group members stay with the machine because it gets the job done. (Avram Tetewsky)

Publishing

The Publishing/CAP Group was first proposed to the BCS Board in February of 1985. At its first meeting in April of that year, it was clear the group was on to something-15 folks were expected; 43 showed up! It all started with the idea of putting computer folks and publishing folks in the same room and seeing what would happen. The two were an inevitable combination and needed a comfortable forum for discussion. The group's charter is based on a broad definition of publishing, including everything from the writer/author's thought processes to the actual distribution of

the final, published product.

Things have worked out. The group is successful, with membership growing at an astounding rate and meetings attracting more crowds than ever. Members receive an information-filled newsletter and are kept up on latest developments at meetings. (Brian Skidmore)

Real Estate

The Real Estate Group is going strong, with monthly meetings and a newsletter. Director Doug Wales has some exciting plans for future meetings and services; come join him!

Robotics

One of the very first BCS groups, this group held lots of meetings and published a newsletter under the early directorship of Ted Blank. It then became dormant for a while, but now is being revived, with great hopes for future services. Check it out in your Calendar.

Science/Engineering

This is another of our "revival" groups, revving up after a two-year period of dormancy. It held its first meeting in February and has already published a newsletter. Members have great plans for a public-domain software library and a bulletin board, among other services. They need help, so join them!

Sinclair/Timex

The little Sinclair computer, and then the Sinclair/Timex, has gone through a lot of changes and upheaval in its lifetime. Through it all, the BCS Sinclair/Timex Group has stuck by it, faithfully holding meetings, special
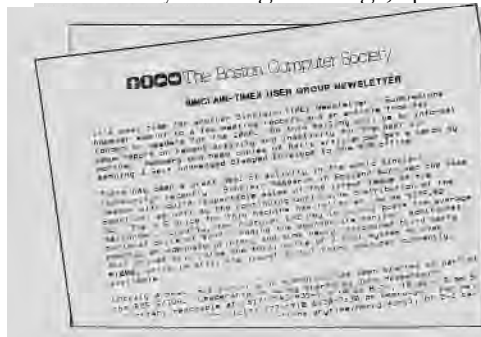
computer fairs, anniversary celebrations, etc., for the little machine. The group currently supports all Sinclair and Timex computers, including the new 32-bit machines from Sinclair.

Social Impact

This group has a threefold purpose: (1) to provide a forum for discussion of social and ethical concerns relating to the use of computer technology; (2) to provide a network for the exchange of ideas among computer users working with social issues; and (3) to in-

crease public awareness of the use of computers in addressing social areas, such as technical assistance to Nicaragua. Upcoming meeting topics include Developing a Free Public Service Bulletin Board and the Use of Computers in Education. One exciting goal for 1987 is to put together a multinational teleconference, with the hopes of joining such countries as Russia, Australia, and Denmark, where the group already has contacts. Volunteers are needed, so please join us! (EMarie Pope)

80/Boston

This group, for Radio Shack/Tandy users, is one of the oldest in the BCS and used to be one of the biggest. We're still hanging in there with over 750 members signed up for our newsletter, which we try to publish every other month. Other services offered are the 80/Boston bulletin board (617-686-5735), and a small but growing public-domain library. Monthly meetings bounce around the Boston area and include a variety of topics—in-depth analysis of DOS; general in-

troductions to word processing, telecommunications, and other applications; new product introductions; and, of course, our annual public-domain software free-for-all.
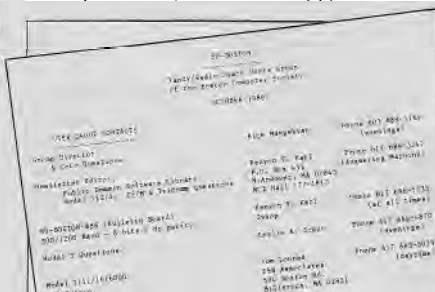
The group's biggest challenge is how to improve support of the new Tandy machines, which conform to the IBM PC standard, while maintaining support for the older Radio Shack users. Among other things, the group is trying a Tandy subgroup of the IBM PC Group, a Color Computer subgroup, and more general topics at monthly meetings that apply to all Tandy/Radio Shack machines. The group asks its members to get involved and make 80/Boston what they want it to be. (Richard Mangekian)

Telecommunications

The Telecomm Group had its origins back in the days when the upgrade for 110 bps to 300 bps was fast. Back then, the word "baud" hadn't even entered the vocabulary.

Yes, the early pioneers certainly had arrows in their backs. Glenn Meader struggled through the acoustic-coupled, dumb modem era when he began the group. Soon, ventures such as electronic mail and online commercial databases started to spring up. When Jack Sullivan took the helm of the group, the interconnecting of remote computers through an animal known to hackers as a "bulletin board" was gaining momentum rapidly. Today, the group deals with electronic mail gateways, online database technologies, micro-to-mainframe or LAN configurations, videotex and audiotex, and satellite downlink technologies. But we haven't forgotten our primary mission: to get out the good word on

telecommunications opportunities. To that end, the group has just completed its "Online Starter Kit," a 48-page manual that covers the basic (and not-so-basic) topics in the field. The group also has a bulletin board dedicated to telecommunications applications, a newsletter, and a terrific spirit. We're looking forward to another great ten years! (Dick tenEyck)

BCS 99ers (TI 99/4A)

This user group was formed around a specific machine, but we don't think of it as a Texas Instruments User Group even though TI originally manufactured our machine. (And therein lies our tale of past, present, and future.)

TI did a good job both of engineering and documenting the 99/4A, but did such a poor job of marketing it that in October 1983, it pulled out and left us as orphans. This was the best day in the life of our group. Today, there are products available for the 99/4A that take their shape from products produced for other computers that aren't orphans. There's even a new computer on the horizon.

And our future? Our past has been shaped by the obstacles we've had to overcome, and the group has been strengthened by that. We continue to face the obstacle of compatibility with our legitimate computer cousins, but have big plans for the future. (Justin Dowling)

TI PRO

This group, for users of the Texas Instruments Pro Series, used to be a
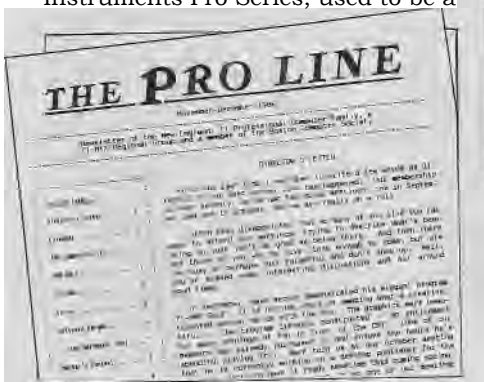
subgroup of the TI Group until it spun off on its own. It holds regular meetings and produces a newsletter for members.

Training/ Documentation

This group, founded and directed until recently by Les Squires, is over four years old and currently has about 1,650 members. Its purpose is to support trainers and writers of documentation, who meet monthly to reflect

on state-of-the-art computer techniques such as authoring languages, online documentation, decision-support systems, graphics design, and so on. The group, which also publishes a newsletter, is looking for a new director. (Les Squires)

Victor
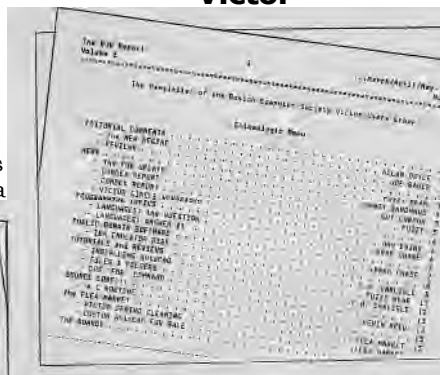
Another one of our groups for users of an orphaned machine, this group got going under the enthusiastic directorship of Mike Handa. For the past few years, it has been led by Michael Wishnietsky, who just recently moved on, both literally and

figuratively, when he moved out of Massachusetts. The group, under new directorship, is going strong, holds regular meetings, sporadically publishes a newsletter, and has lots of bulletin board contact with other Victor users nationwide.

Wang

The Wang Group has grown tremendously over the past four years. It acts as a liaison between Wang Laboratories, Inc. and users in the group. We now have a large public-domain library, and we run the world-wide center for Wang bulletin boards. The group is currently working on a hardware and software

library similar to what the BCS Resource Center offers. One nice service of the group is that when local members' computers break down, they have spare parts to loan out while the machines are being fixed. The group is currently forming alliances and sharing programs with other Wang-related user groups throughout the world. (Dan Crawford)

And also...

Added to the above groups are some fledgling and potential groups, such as Women and PCs, CD-ROM, AT&T, Epson, and a Church group. An increasing number of groups are also starting satellites outside the greater Boston area. If you wish to find out more about any of the groups mentioned, to be put on their mailing list, or to jump in and help produce the wonderful services they offer to you, our members, please contact the office.

CIA File: BCS-87

Subject: Staff of The Boston Computer Society
Investigation: Reported leaks of TOP SECRET Hi-Tech information
Operative: Michael Murie. Planted inside BCS, working undercover at the Resource Center as their newsletter editor.   Code Name: 'Kaped Kiwi'

Boston Computer Society

(handwritten: who?)

...: ...ood Morning, BCS.

453: This is Bill Gates, is Jonathan there?

BCS: I'm sorry, who did you say that this was?

453: Bill Gates. You know, Microsoft, the people who own IBM (ha,ha). *(handwritten: what's IBM? ...nter Ballistic Missile?)*

BCS: Sure, sure. Now who is this really?

453: It's me, really! Can I speak to Jonathan please?

BCS: OK, OK... Bill. I'm sorry, but he's talking to Mitch Kapor. (click) *(handwritten: C+E? conspirators + eliminators?)*

BCS: BCS, good morning.

454: Yes, I'm trying to find where the C&E Group is meeting.

BCS: That information is in your Calendar sir.

454: I, uhhh, I didn't get one.

BCS: The information you request is on the Info Line sir.

454: It cuts off before it tells me where...

BCS: That's what they all say, sir. (click)

Jonathan Rotenberg, President
Code Name: JR II
aliases: El Presidento, The Big Cheese, The Boss, Prez, This is the Big One, The One in Whose Image was Created... The Buck Stops Here. Claims to be the founder of the BCS; however, evidence suggests that he would have been three years old at the time. The size and entrenchment of this clandestine organization suggest that it was set up by professionals and that he was planted to divert suspicion.

(handwritten note:) Jon - SDI dept of DOD called. Have a large number of hackers who don't know what they are doing. Perhaps we should start an SDI group? Dee *(sounds like a good idea J)*

(handwritten message slip:) To Jon. Date at... WHILE YOU ... President IBM M. IBM Phone 1-800-VERY BIG TELEPHONED / CALLED TO SEE YOU / WANTS TO SEE YOU / PLEASE CALL / WILL CALL AGAIN / URGENT / RETURNED YOUR CALL Message Should they release the new PC?

Dee Maddic, Director, Member Services
Code Name: Tiny Dancer
In charge of coordinating the various groups. Has an unexplained aversion to being photographed (protecting something from her past perhaps?) Claims to be a fan of Credence Clearwater Revival, but evidence gathered at BCS functions suggests an aversion to dancing in public.

Phoebe Savonell, Membership/Office Manager
Code Name: CD
While spending a large amount of time running around looking busy, she often assumes other identities to disguise her clandestine activities. The photograph attached shows her impersonating Jack Hodgson.

455: Hello, hello?
BCS: BCS, can you hold for a minute, please (click)
455: Sure, I...hello?

BCS: BCS, hello.
456: This is Zakharov at the (garbled) Socialist Republic's UN Mission in New York.
BCS: What can we do for you?
456: We haven't received the latest issue of PC Report.
BCS: Just a minute, and I'll check it. Ahhhh, the latest issue is at the printers, and you should get it within (inaudible) weeks. (click)

55: Hello, hello?

7: Hello?
CS: Can I help you?
7: Yes, can you tell me what you do?
S: I do all kinds of things sir, usually during the morning I...
No, no, the BCS, what does it do?
(snort), Just my little joke, sir, something to relieve the tension. We do it all really, and if you would give me your name and address, we'll even do it to you - send you information that is!

455: Is anyone there?

Hello, can you tell me when the next issue of Active Window will be out?
ust a minute. Ahhh, it was elivered to the Post Office last nth. Your guess is as good irs!

clean carpet, last party le it a mess! What's the party?

Mary McCann, Executive Director
Code Name: First Edition
Editor of well-known computer publication, Computer Update, primary source of hi-tech leaks. Believed to be in contact with an agent that has infiltrated CIA offices. We are investigating this latter further.

PLEASE PRINT OR TYPE

Name Union of Soviet Socialis
ublics U.N. Buildi
legation

Martha Healy, Member Relations Manager
Code Name: Rolodex
Spends an unusual amount of time on the phone talking to field agents. Believed to use a disk labeled "Martha's Rolodex" to distribute Top Secret messages. This disk also contains a list of active operatives.

CIA

an equal opportunity employer
Langley, VA
and offices throughout the world
1 (800)   779-7787
(SPYSRUS)

Sir,

It has come to our attention that your organization has been supplying information of a classified nature to the UN mission of the Soviet Socialist Republics (Ruskies).

Let me remind you that there is a directive in place preventing the disclosure of such information to the Ruskies. In wartime your kind would be shot and ordered to decease from such subversive activities. Of course, as this is regarded as 'peacetime' by many, we are unable to do this -officially.

I hope this makes clear your next course of action - and ours, if you fail to remedy the situation immediately.

Yours faithfully

Director

Not affiliated with the National Security Agency

(handwritten note pinned)
JANET
20 January 1987
Investigated invisible ink for SDI newsletter. Bleeds badly, but no one notices.
Janet

(handwritten)
Called CIA.
Spoke to someone in Dispatch section. He said this was
NO JOKE

Janet Cole, Publications Manager
Code Name: Postage Paid
In charge of publications, along with being editor of the BCS Activist. Her mission appears to be to disrupt communications by sending thousands of misaddressed newsletters through the Post. Believed to have been involved in an attempt to blow up the Central Post Office two days prior to Christmas.

**Gillian Newson,
Member Relations
Manager**
Code Name: MapleLeaf
A "Snow Back"
(immigrant from Canada)
who claims to be here legally. (Immigration is investigating.)
Discovered that she is responsible, amongst other things, for depositing large numbers of checks to various bank accounts. We are investigating her lifestyle. Notice the strange spelling of Jill - possibly *French-Russian* in origin

Knowledge Gathering Bureau Account

Centra...
Pay to:
...et Socialist Republics
5 JAN
38
я 123-

(handwritten note)
The Director of the SDI group,
Mr X, tells me the Post Office refuses to accept the initial security cabinet they are mailing their newsletter in.
Phoebe.

Bill Rafferty, Controller
Code Name: America's Cup
Our agent risked life, limb, and expensive equipment to secure a half-dozen scratchy and out-of-focus photographs to distribute to our operatives.
Unfortunately, this suspect managed to slip away before he could get the lens cap off. Anyone in possession of a good photograph of Rafferty should contact our agent or Dept. of the Treasury, immediately.
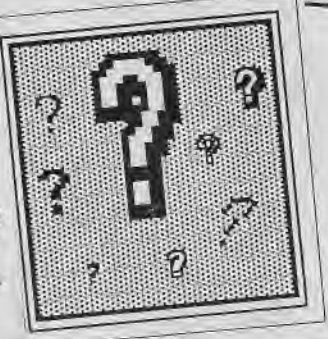
BCS SERVICES AND SPECIAL PROJECTS

Calendar

Published monthly, Calendar is sent to BCS members throughout New England. It lists over 100 BCS meetings, events, classes, workshops, clinics, and seminars for each month, as well as other events of general interest to members. It also includes phone numbers for BCS bulletin boards and online services that carry BCS information. (Janet Cole)

Activist

The BCS Activist, the bimonthly newsletter sent to active BCS volunteers, keeps activists up to date on BCS policy, staff changes, and major events happening within the BCS. It includes several regular columns written by BCS staff, as well as minutes from Board, Executive Committee, and Member Services Committee meetings. (Janet Cole)
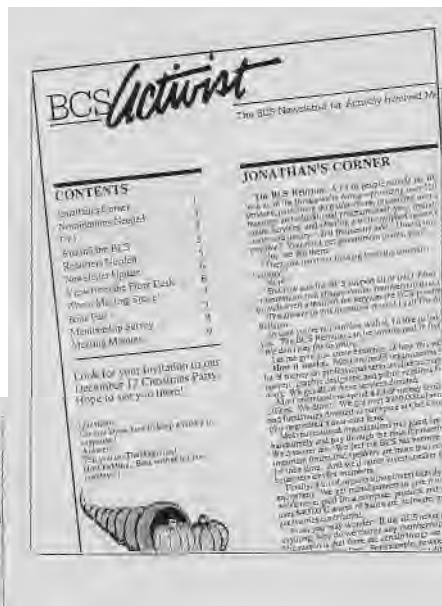
Buying Guide

Twice yearly, in May and November, we publish The BCS Buying Guide, a listing of companies that of-fer BCS members a discount on products and/or services. The current Guide includes over 400 listings of retail and mail-order products (both hardware and software), as well as companies offering consulting, electronic services, repair and maintenance, and much more. (Janet Cole)
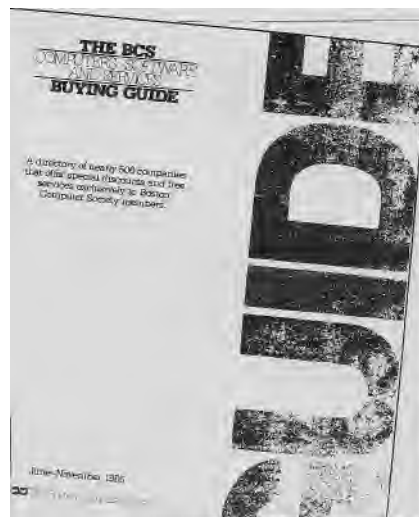
Computer Update

In an effort not to belabor the obvious, it's what you're currently clutching in your mitt(s)—or, for those of you eating, drinking, knitting, or otherwise involved in manual endeavors, it's what is currently nestled on your table, chair arm, crook of elbow, knob of knee, etc. It comes out six times a year and strives mightily to keep you informed and amused about a gaggle of Society and industry happenings.

Clinics

In the beginning there were four clinics, recurring monthly, on these simple topics—beginning basics; hardware; word processing software; and financial software. These have since spawned a series of other clinics, seminars, and workshops, all planned and put on by BCS volunteers, that provide a wealth of information at minimal charge to members. We have plans for an even more ambitious program of educational classes—for all levels of expertise—in the months ahead. Check your monthly Calendar for listings and details.

CCOD

The Center for Computer Opportunities for the Disabled, one and a half years in the planning, is off to an exciting start under the directorship of Arthur Wood. The center was established to enable individuals with special needs to explore the ability of computer technology to improve the quality of their lives. They, their families, friends, and care providers can informally learn about computers through the CCOD and can discuss potential problems before buying.

The CCOD is currently available on an appointment basis only, so that trained volunteers can have the computer set up with the adaptive devices and/or programs appropriate to the individual. Volunteers are trained specially to match individual clients' needs. People interested in donating volunteer time, money, or equipment should call Arthur Wood at 617-244-7607, or write to him care of the BCS office. (Arthur Wood)

Library Project

The Library Project was started over a year ago under the coordination of Gerry Lukos, with the idea of establishing a permanent site for a complete collection of computer reference materials. It contains as its nucleus contributions made by David Ahl, editor of the late Creative Computing, which folded in 1985. It has since received a number of other donations (including a complete set of Byte magazines), which have been organized and catalogued. The library, which is currently housed at The Computer Museum, is not a lending library; people must call the Museum first and ask permission to examine the materials on the premises. The Library Committee is looking for suitable donations so that they can employ someone with librarian skills to take charge of the collection. Corporate individuals who want to support the project should write to the director of The Computer Museum. (Park *Gerald)*

MSC

The Member Services Conference is a twice-a-year meeting of user group directors, board members, and BCS activists. The MSC meets at various locations such as The Computer Museum, the Museum of Science, or various local universities. The half-day meetings include presentations of possible plans for future activities and policies, discussions of issues important to members, and suggestions for changes or improvements. (Peter Miller)

Online Services

Once the province of hackers only, telecommunications and online services are now the realm of the common user. More and more groups are starting their own electronic bulletin boards and tapping into commercial information services. More members are buying modems, or if not at that stage yet, are at least aware of what these services can do. A lot of this is due to the wise and patient counsel of a number of BCS volunteers skilled in these areas, who have devoted an enormous amount of time to setting up and maintaining these systems. With the help of these volunteers, the BCS is currently investigating new local and national services that may have long-range implications for new membership services.

Public-Domain Software

BCS volunteers manage many of the most comprehensive and best documented libraries of public-domain and shareware software in the world. For example, the Macintosh Group has a library of over 500 programs and a 200-page catalogue. The IBM Group has 73 disks, and the Apple II Group has over 100. There are 20 user group libraries in all, with over 1,500 programs ranging from the tiniest of useful utilities to some of the best, most powerful programs available. Some public-domain programs have become standards that almost everyone

BCS•Mac Software Exchange Library

January, 1987
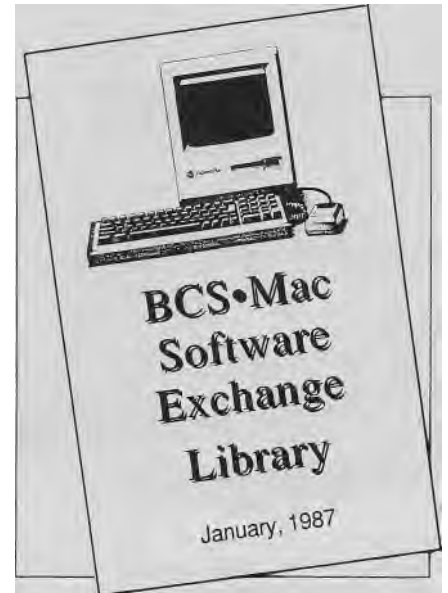
uses. PCTa1k III is the telecommunications program of choice for IBM PC users.

Many members find that these libraries can be one of the best reasons for joining the BCS. Usually, the various group newsletters provide descriptions of software and mail-order forms, so that members nationwide can take advantage of the libraries. In addition to being a most valuable member service, disk sales often provide a group with an alternative source of funds for additional member services such as bulletin board systems, larger newsletters, better meeting locations, and so on. (Robert Hafer)

Resource Center

Like a secret room in the attic, the BCS Resource Center was an inaccessible treasure, tantalizing members who happened to appear in the BCS office for other business. "But you have all these computers in there, why can't I use one?" was the cry. "But we can't staff it and run the BCS at the same time," came the reply. From the shadows came the heroic figure of Ben Calica. "I'll do it!" he cried selflessly. (Actually, I had just quit my job and was bored.) Ben set to the task of first soliciting volunteers and then doing his best to dodge their calls.

Despite his best efforts, a band of

hardy and determined travelers decided to take on the task of first organizing, then making available to all BCS members the troves of donated hardware and software. Manned by the sturdy crew of Abby Ash, Kent Borg, the musical Joe Burgio, Jeff Cataldo, Tony Collins, Jim Crump, April Kirpalani, Margaret Menzies, Michael Murie (the serious member of the group), Fran O'Neil, John Roll, Bill Saunders, Cynthia Schweppe, Susan Vecchione, and the oh-so-gentle Larry Wild, the Resource Center took off. Crowds were awed by the beautiful stacks that arose, Phoenix-like, from the clutter of mislabeled software.

Soon the Center was open for business, inviting every one of our 23,000 members in for a quick product evaluation and a cup of tea. (Just kidding about the tea, folks.) The Resource Center is now open many nights a month; just call and reserve an hour's time slot and the machine and software of your choice (provided we have it), and all this can be yours. Three cheers for the crew of volunteers that have made it happen! (Ben Calico)

Summer Computer Institute

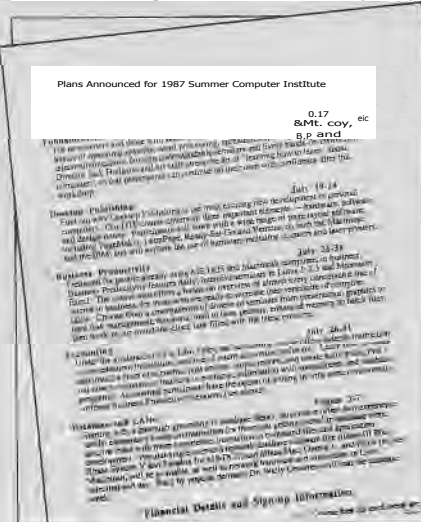BCS's Summer Computer Institute may be the only BCS activity that's older than the BCS itself. This nationally known program of intensive seminars, now in its fourteenth year, was begun by Russ Walter with the goal of providing intensely professional but approachably informal instruction, guaranteed to demystify all aspects of computing. When Russ retired from the program in 1983, its current director, Cynthia Harriman, took over. Already a BCS user group leader, Cynthia worked to make the SCI an official BCS program, a move that was finalized last year.

The SCI is now an important part of the BCS, functioning as a cross between a week-long user group meeting and a hands-on computer show, offering an outstanding educational opportunity not only to local BCS members but to out-of-town members who can't readily attend most meetings. Hardware and software vendors donate more than $350,000 worth of products to the Institute each summer, much of which ends up in the BCS Resource Center permanently.

This year the SCI will offer five week-long courses to BCS members at its Newton, Mass., campus: Fundamentals (July 12-17; Desktop Publishing (July 19-24); Business Productivity (July 26-31); Accounting (also July 26-31); and Database and LANS (August 2-7). Call Cynthia Harriman at 603-436-1608 for more details.

by Jonathan Rotenberg

THE BOSTON COMPUTER SOCIETY: 1987-1997

P eople often ask me, "What is the future of the BCS? What are you planning to do over the next few years?" I generally tell them that in such a fast-changing industry, we're lucky if we know what we're doing next week.

They usually don't look very satisfied with this answer.

"Okay," I suggest, "look at the BCS's logo—the four arrow buttons. This clever insignia has two meanings that sum up everything you need to know about the BCS. First, we're a computer organization. Second, we're always going in all directions at the same time."

This is about the best brief answer I can give. It's hard enough trying to describe all the things the BCS does today, let alone what it might do in the future. In fact, I find it remarkably difficult just trying to explain what the BCS is.

This point became intensely clear to me about three years ago when I was on vacation. **I** met some people who had no familiarity with computers, and I was trying to explain to them what I did in Boston. After several confusing attempts, I finally explained that the organization I work for "kind of does for personal computer owners what the AAA does for people with cars."

"You mean you tow computers?" someone asked.

"Not quite," I said.

The BCS's mission. To understand where the BCS is going, perhaps it's easiest to start with our mission and how it is evolving. The BCS is chartered as a nonprofit, educational corporation dedicated to educating people on all aspects of personal com-

puters. We serve three different kinds of audiences: personal computer users, personal computer buyers, and the nontechnical public. Our goal is to be there when people need us to answer their questions and to fulfill their information, education, product support, and moral support needs.

This is, admittedly, a broad mission. Many BCS members today aren't even necessarily aware that they have "information or education needs"; they might realize, however, that they can't seem to get a new software package to work with their printer, that their operating system is acting bizarrely, or that they are utterly confused and terrified by computer salespeople.

Although our mission is essentially the same in 1987 as it was in 1977, it manifests itself in very different ways today. In 1977, very few BCS members actually owned or even used personal computers, but all were curious about the possibilities. Today, nearly every BCS member regularly uses a computer, and most own at least one as well. Most BCS members today seem less interested in the overall personal computer phenomenon, but, rather, are more focused on accomplishing specific tasks with their computers. As a result, most of the Society's newer services are much more narrowly focused on helping people with very specific kinds of problems.

Planning for 1997. I suspect that the needs of BCS members in 1997 will be as different from those of today's members as today's are different from those of members ten years ago. We don't believe that personal computer technology will mature in the near future, and we think that users and

Jonathan Rotenberg is president of The Boston Computer Society.

> Among our 23,000 members today, there are enough new ideas and people willing to carry them out to make the BCS an exciting place for many years.

the general public will continue to look to the BCS for new kinds of services to address their changing needs.

The key to planning for 1997 is not so much being able to predict what those needs will be. In fact, history virtually guarantees that whatever predictions we make, we will probably be wrong. The key is being able to position the BCS to react quickly and responsively to needs as they arise.

Ultimately, it is the needs of BCS members and the general public that will dictate the future directions of the BCS. These needs will largely be driven by developments in the technology, and by the ways that these developments are absorbed into society.

Some BCS members today seem to live in fear that we might be partial to certain needs over others. For example, some Apple users think that the BCS is partial to IBM users, while an equal number of IBM users believe we favor Apple. We have enthusiasts who think we favor professional users, and professionals who are certain we're partial to enthusiasts; as well as orphan computer users who seem to think that everyone is against them.

In reality, none of these positions is true. Every BCS project or group begins with a member stepping forward and suggesting an idea. New ideas receive remarkably little scrutiny. If a member really believes in an idea, if it fits within our broad educational mission, if it doesn't compromise our commitment to independence and objectivity, and if it's legal and doesn't jeopardize our tax-exempt status, we generally say, "Go do it. What do you need to make it work?" Coupled with what we call The BCS Religion (a.k.a. "We don't pay for anything"), this approach works very successfully to create new services that respond to members' needs.

The BCS Board of Directors doesn't generally pass judgment on services or favor one service over another, but tries to provide the support, resources, and TLC to help make

new services blossom and flourish.

The real key to making the BCS as viable an organization in 1997 as it is in 1987 is continuing to make it a friendly, approachable, fun environment where new ideas and new services can prosper. Among our 23,000 members today, there are more than enough new ideas and people willing to carry them out to make the BCS an exciting place for many years. Our challenge as an organization is to make sure that everyone has the resources, support, and motivation they need to develop them.

Getting down to specifics. After telling you that predictions are usually wrong, let me go ahead and make a few anyway. Spending a lot of time talking with BCS members and active volunteers, as well as observing trends in the personal computer industry, I do see some trends emerging that I think may help shape the BCS over the next ten years.

Keep in mind that the most dramatic breakthroughs in computers rarely ever seem to emanate from trends, but prefer to burst out of nowhere, stymieing prognosticators and market researchers alike. (As proof of this, consider electronic spreadsheets and desktop publishing.) So you may want to take the following with some small quantity of salt.

In any event, it should be interesting to read the 20th anniversary issue of Computer Update and compare what actually happened with these predictions.

1. More volunteer support

Regardless of what happens in the personal computer industry, the BCS will definitely work toward expanding its support for members who volunteer time to the Society.

We've developed a simple formula to determine which services we organize centrally in the BCS office, and which we leave to the active volunteers. Quite simply, the office does the things that volunteers don't like to do, leaving volunteers time to do the

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> as it was in 1977. It just manifests itself
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things they really want to do. This generally means that the interesting, creative jobs, like writing newsletters, organizing meetings, and developing software, are the total responsibility of volunteers, while back-up jobs, like newsletter mailings, telephone answering, and bookkeeping, are handled by our cheerful, hardworking office staff.

In the last few years, we've created central services to help user and interest group volunteers produce newsletters, recruit additional volunteers, get software and equipment, and manage special projects. During the next few years, the BCS will work toward a number of new goals: building a permanent meeting facility for groups; expanding newsletter support; providing greater resources for developing, cataloging, and distributing public-domain software; creating new incentives to promote volunteerism; and making it easier to offer services online.

2. More specialized user groups

As the BCS gets larger, it seems to get better at providing user groups for specialized applications. Many of our special interest groups today, such as our Medical/Dental, Investment, Special Needs, and Social Impact groups, could not have existed five years ago, because there was not a large enough base of interested people among the membership to form viable groups.

Today, the BCS is spawning new groups that are more tightly focused than ever. For example, a few years ago, we were able to start the world's first personal computer Graphics User Group, dealing with a wide range of graphics applications. More recently, we launched a group specifically for professional designers who use the Macintosh computer. In the near future, we may be starting a group for architects that focuses exclusively on a computer-aided design software package for architecture.

Besides being more narrowly focused, I see new groups catering to specific levels of experience and technical expertise as well. An ongoing concern in the BCS is to make

sure that all of our services are accessible to and understandable for beginners. The best way to meet this goal seems to be having special beginners groups that provide extra support and service. At the same time, we realize that among our membership we have many of the world's most talented computer designers and programmers, who want advanced forums that go at a much faster speed. Special advanced technical groups are a good way to address this need.

3. Integration of user groups

It is said that most modern civilizations have, at one time or another, gone through a feudal stage of social organization. If it's any proof that we're following in the footsteps of great civilizations, I think the BCS has gone through a feudal era as well. Many of our user groups existed for several years essentially as self-contained fiefs, having little communication or interaction with one another.

The nature of the technology may have been one of the primary reasons for this. For years, there was little reason why different user groups needed to talk with each other. Each brand of computer was essentially an island unto itself, unable to share hardware or software with other machines, or to effectively communicate with other products. Today, with the advent of local-area networks and advances in telecommunications, this is all changing. As a result, BCS user groups are increasingly finding that they have much more in common with one another than they ever had before.

This point occurred to me a few months ago while reading our IBM PC Report newsletter. My jaw dropped when I came to a word that I was certain I would never see printed in that publication: Macintosh. In fact, the newsletter carried an entire article about transferring information between Macintosh and MS-DOS systems.

In the last few months, we've begun to see more BCS user groups organizing joint meetings and special projects together. Over

> The needs of BCS members and the public will dictate the future directions of the BCS. The key is to react quickly to these needs.

time, I think the groups will begin to carve out more specialized niches for themselves and become key resources not only to individual members, but to each other as well. In the future,. I think they will form a much more tightly interwoven network of services, mirroring the networked technology of new personal computers.

4. Wider geographical service

If one thing has become clear about The Boston Computer Society in the last few years, it is that we are no longer just a Boston organization. As BCS membership has spread to all 50 United States and 40 countries, the most common complaint that we now get from members is that we don't do enough for people outside of the Boston area. This situation is changing, however,

Several BCS user groups have established satellite meetings throughout the six New England states. Last year, the Personal Computer Society of Denmark became our first international affiliate, and subsequently helped to launch a new program of special services for BCS members who live or travel abroad.

The next step in our evolution might be to. follow the American Automobile Association and establish regional affiliates throughout the United States. Although I think this could happen between now and 1997, I don't believe it will happen soon. An important difference between the BCS and an automobile club is that we are so dependent on volunteers. In order to make a BCS affiliate work in another part of the country, we would need a large group of very dedicated volunteers who are willing to work through all of the hassles of building a new organization. Although this isn't impossible, it's not likely to happen quickly.

5. Serving the nontechnical public

Over the coming years, I see the BCS getting back to its roots and really beginning to advocate not just people who already

own computers, but people who are still baffled by them. Although personal computers have grown enormously in popularity throughout our ten years, most Americans still have little idea how they might be able to benefit from them. The BCS can play an important role in filling this gap.

If all goes well, Computer Discovery Center/Boston should open in 1987, establishing our renewed commitment to serving the nontechnical public. An equally important project, called the Center for Computer Opportunities for the Disabled, should also take off this year. Started by our Special Needs Group, the CCOD provides free access and training for disabled people on personal computers with adaptive devices.

Many ideas are developing on how the BCS can leverage its current resources to provide a much richer program of public service. For example, BCS members often ask us for worthwhile charities where they can donate their used computer equipment. We could serve as a more active intermediary to help facilitate getting equipment to needy organizations.

Another idea is to get BCS members involved in local school systems and community organizations to help improve the quality and availability of public computer education.

We believe that Computer Discovery Center can be an important platform for launching many other public outreach services, not only in the Boston area, but throughout the United States and in other countries as well.

6. Serving business users

We're finding that many of our members who use personal computers in their businesses are grappling with issues today that simply didn't exist five years ago. Members in larger companies are facing new kinds of organizational issues; strange new job titles, like "microcomputer manager"; the need to rethink internal communications; conflicts over standardizing on specific hardware or software; and challenges in planning for new technologies. Members in small compa-

> I see new groups catering to specific levels of experience and technical expertise, with emphasis on special support for beginners.

vies face other kinds of problems, such as investing in accounting software without knowing enough about accounting, or needing a database management system without knowing how it should be organized.

We see a new genre of user group emerging in the BCS that deals less with specific hardware and software, and more with helping professionals and organizations solve business problems that will ultimately require computers. Realizing that actual hardware and software is only a small part of a solution, this type of group will cover the other parts of a solution: management, training, service, support, buying, planning, and business skills. Working in tandem with the BCS's existing hardware-, software-, and application-specific groups, this new type of group will help make the BCS a full-service educational organization.

7. Delivering services online

For much of the history of the BCS, telecommunications with personal computers has been more of a novelty for computer enthusiasts than a viable product for the average personal computer user. But we see this changing rapidly.

As telecommunication technology has improved—producing faster, less expensive, more reliable modems and software—telecommunications has begun to emerge as a viable communication alternative to telephones and the printed page. Today, only a small percentage of BCS members regularly use any of the Society's 11 electronic bulletin boards or the special services we offer on commercial information services. The main reason for this is that most members have not yet been able to justify the purchase of a modem and telecommunications software. But current trends suggest that, by 1997, nearly all BCS members will have modems and will be using them regularly.

Under the leadership of Telecommunications Group director Dick tenEyck, the BCS is undertaking a serious long-term exploration of new online services, both locally and on a national level. What these services will ultimately be is hard to say now. There are dozens of ideas in development, ranging from having General Meetings online to producing an online database of product reviews. Again, changes in the technology will have a major impact on how this aspect of the BCS evolves. One big change we see coming is the integration of low-cost scanners, high-speed modems, full-page graphics displays, and graphically-oriented information services which may displace some existing communication channels, such as fax machines and printed newsletters. Such changes aren't in the immediate future, but do seem to be emerging on the horizon.

8. An alternative for software support

If current trends pan out, it's likely that few software manufacturers will offer free telephone support for their products in 1997. Although pay-as-you-use-it telephone support for software isn't necessarily a bad thing for corporate software users (it's generally more reliable and effective than free support), it can be prohibitively expensive for individuals who have to pay for it themselves.

Quick, reliable telephone support for software users is becoming absolutely essential as software packages grow increasingly complex. Individual personal computer users who can't afford to spend megabucks on telephone consultants are going to need an alternative kind of support. The BCS may be able to provide this support.

We currently publish the phone numbers of several hundred BCS members who have offered to help other members with software problems. Although this is a very successful service today, it's basically limited to members in the 617 area code, and it doesn't guarantee that you'll be able to reach someone who has just the right expertise to help you (or, if you've volunteered to be listed,

> The most common complaint we
> now get is that we don't do enough for
> people outside the Boston area.
> We hope to change this.

that you won't be deluged with more calls than you're willing to handle).

We have an idea on how to greatly expand and enhance this service with a little help from computers. We've found that most BCS members are willing to volunteer some of their time and expertise as telephone consultants to help other members with computer problems. Telephone consultants can generally learn a lot from helping others and enjoy making new contacts. The challenge for the BCS is to figure out how to get one member in touch with another member who happens to have the exact expertise that he or she needs and who is in his or her local calling area.

We envision a sophisticated audiotext expert system that could provide this networking function. The way it would work is that BCS members from all over the country would fill out a questionnaire indicating in what areas of expertise they can provide telephone support, what their phone number is, what hours of the day they are willing to be called, and how many calls they're willing to accept. This information would be stored in a large database.

When you have a software problem, you would call our special audiotext phone number. A person's voice would instruct you to press a button on your touchtone phone corresponding to the type of computer you're using. It would then lead you through a series of questions in which it would narrow down what your problem is and who can help you. Finally, it would give you the phone numbers of three BCS members in your area who could help you.

This would clearly be an ambitious project to organize and operate. But given our penchant for taking on ambitious projects, I wouldn't be surprised if we started experimenting with it in the near future.

9. Consumer advocacy

As the largest organization of personal computer users in the world, it seems ap-
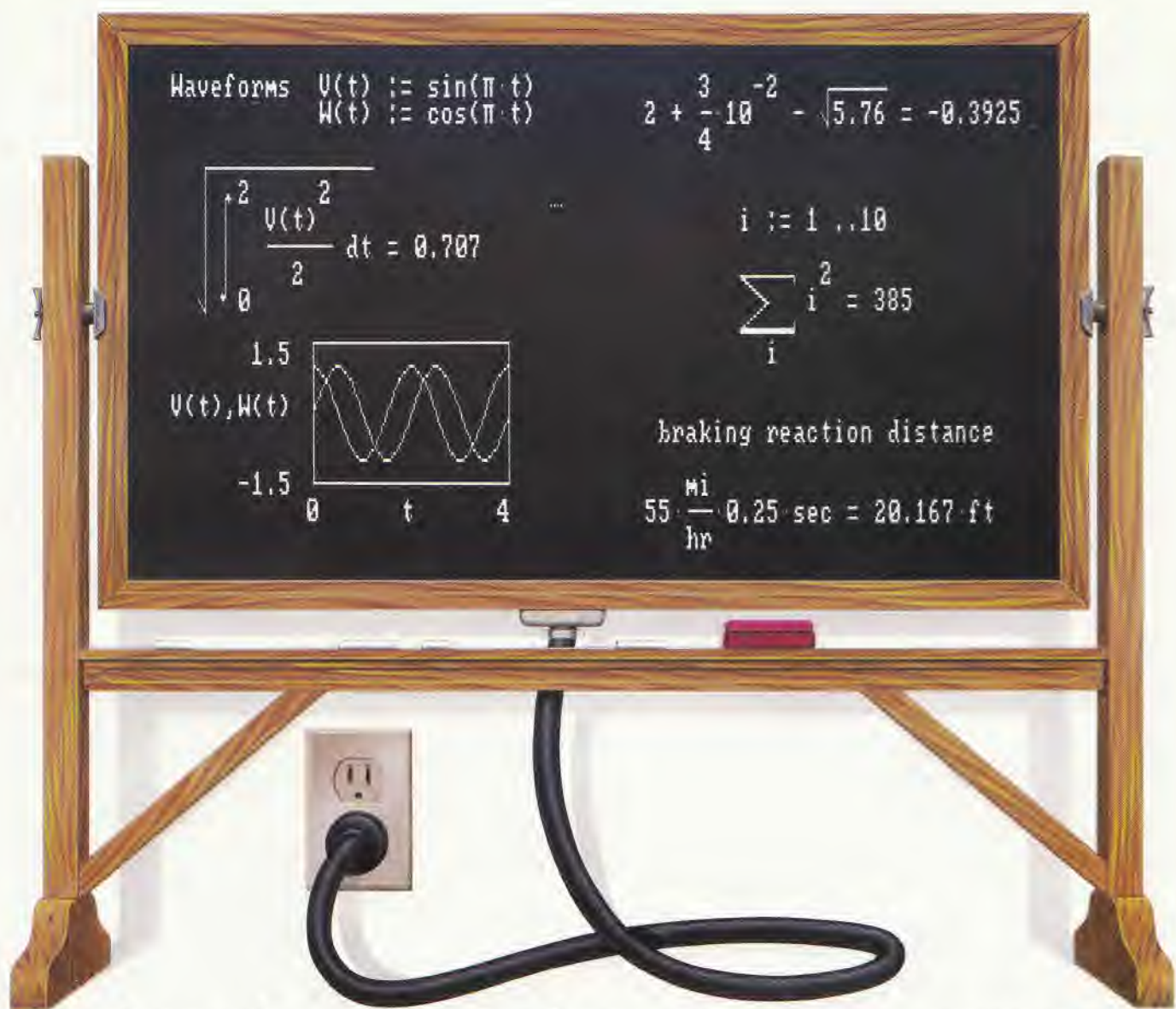
propriate that the BCS take a leadership role in advocating the rights and concerns of personal computer users. During the last year, we've been encouraging members to send ideas in to Computer *Update* on how they'd like to see the BCS expand its consumer advocacy programs.

Ideas for many new programs have started to arrive. These include lobbying for consumer legislation, serving as an arbitrator between consumers and vendors, doing various comparative tests of products and services, and developing joint projects with organizations like the Better Business Bureau. Given the strong interest in this area among members, I would expect to see a lot of development in the consumer advocacy area over the coming years.

10. Setting standards

Going hand in hand with consumer advocacy, it's often been suggested that the BCS could take a role in establishing standards in the industry for what consumers should expect from personal computer products. Computers and software are such extraordinarily complex products, it's nearly impossible for an average consumer to take into account all of the different requirements of a particular application, or all of the features and shortcomings of a particular computer product. The BCS could help in this area by establishing some basic standards that consumers could come to depend on.

A BCS standard could define certain basic features that a consumer should expect from a product, such as a reasonable warranty policy, a certain amount of manufacturer support, compatibility with other products, free correction of software defects, etc. Products that meet these fundamental requirements could then receive a BCS "seal of approval," giving consumers greater peace of mind, and letting manufacturers know what minimal expectations users have of their products.

Waveforms $V(t) := \sin(\pi \cdot t)$
$W(t) := \cos(\pi \cdot t)$

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$\int_{0}^{2} \frac{V(t)^2}{2} \, dt = 0.707$

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$\sum_{i} i^2 = 385$

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Benchmark run on a 6 Mhz IBM AT using Turbo C version 1.0 and the Turbo Linker version 1.0; Microsoft C version 4.0 and the MS overlay linker version 3.51; Lattice C version 3.1 and the MS object linker version 3.05.

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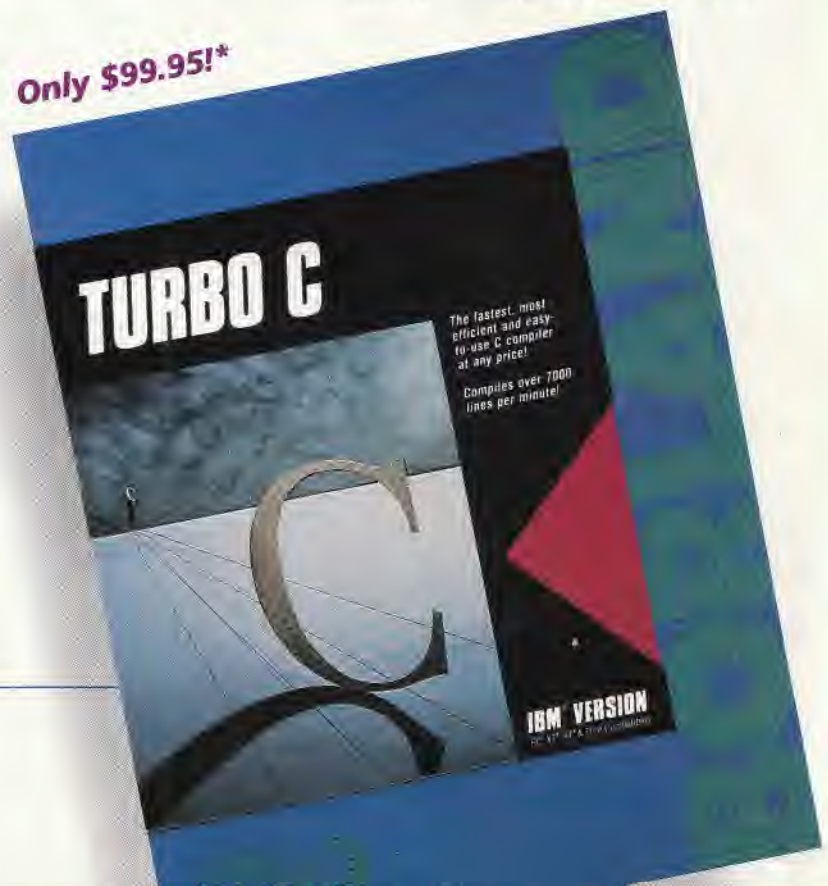
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