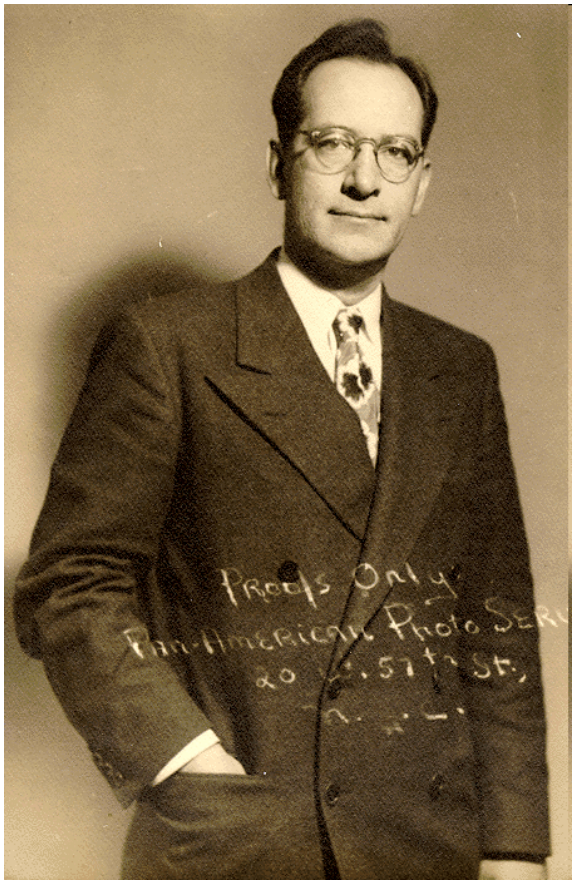
Mid-Atlantic Computing History

Mid-Atlantic Retro Computing Hobbyists
Evan Koblentz
Bill Degnan

John Mauchly

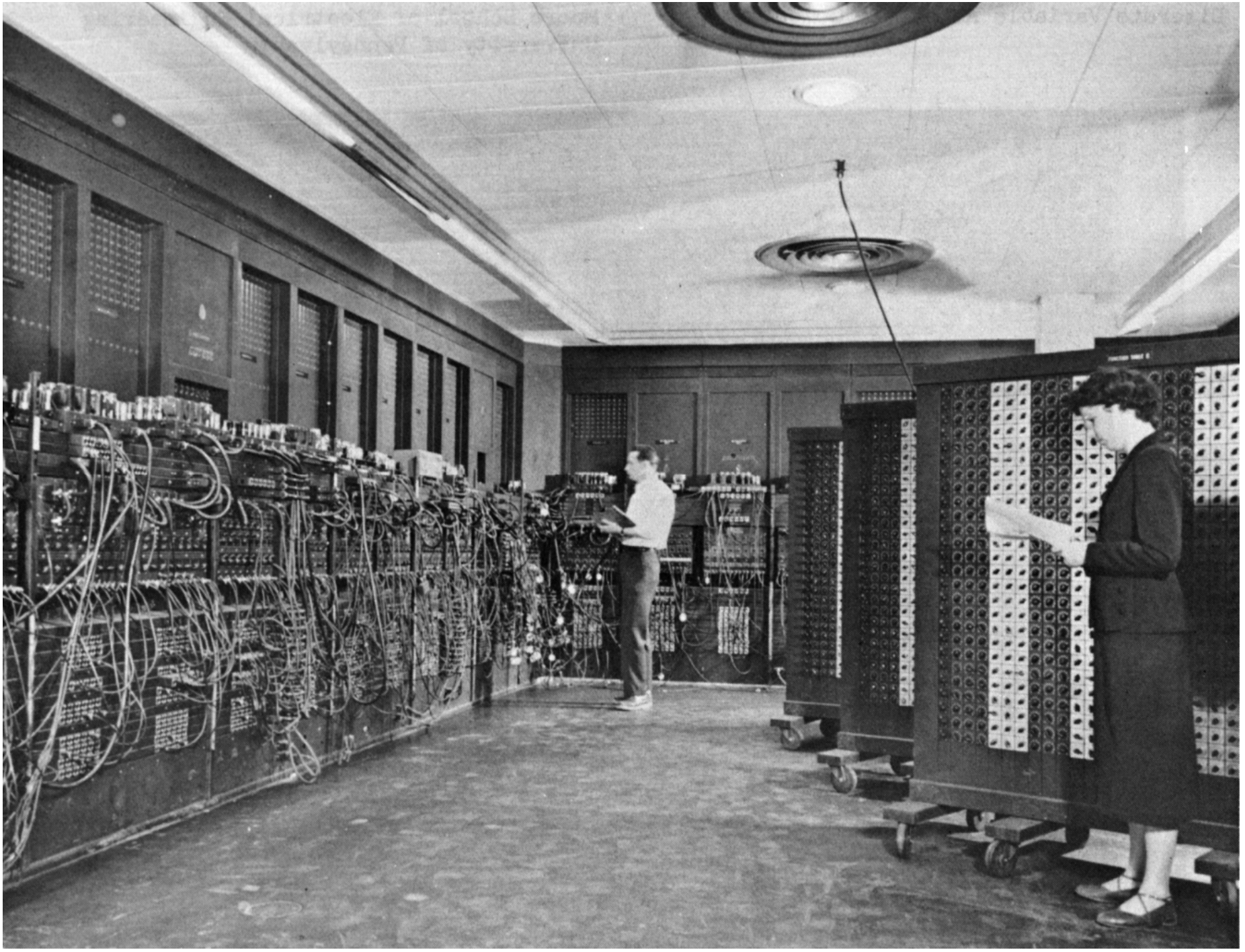
- 1941: Designs for a parabolic radar antenna, which researchers believe was a Camp Evans project
- Inspired University of Penn. physics Prof. John Mauchly to expedite his digital computer ideas leading to the secret Project PX – his pioneering ENIAC in 1943.
- ENIAC was not the first computer, but its general-purpose design augmented with stored-program methods began the modern computer age.



- ENIAC – 1946

- Wiring panels (not papertape) electronic

- ENIAC recognized patterns of instructions set up in advance on wiring panels.

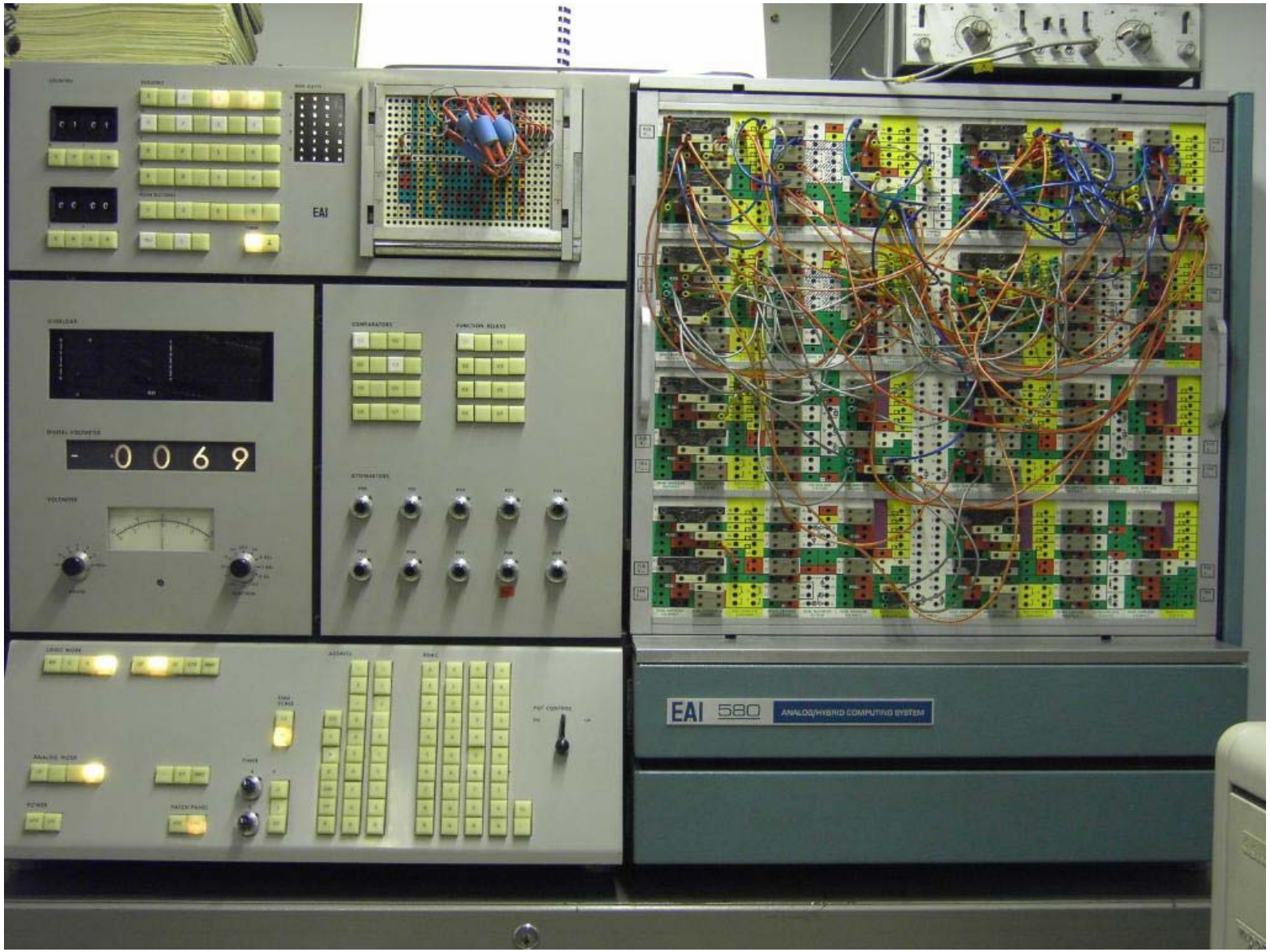


Vacuum Tube Development Committee

- **1943-1945:** Several members of the Evans staff join top American engineers and scientists on the National Defense Research Committee's Vacuum Tube Development Committee, based in the Empire State Building.
- VTDC pushed for commercial development and military applications of this essential technology.

Electronic Associates (EAI)

- **1945**: Veterans of the camp led by Arthur Adamson and Lloyd Christianson form their own company, Electronic Associates (EAI), which became a leader in analog computing.
- Based in West Long Branch, New Jersey

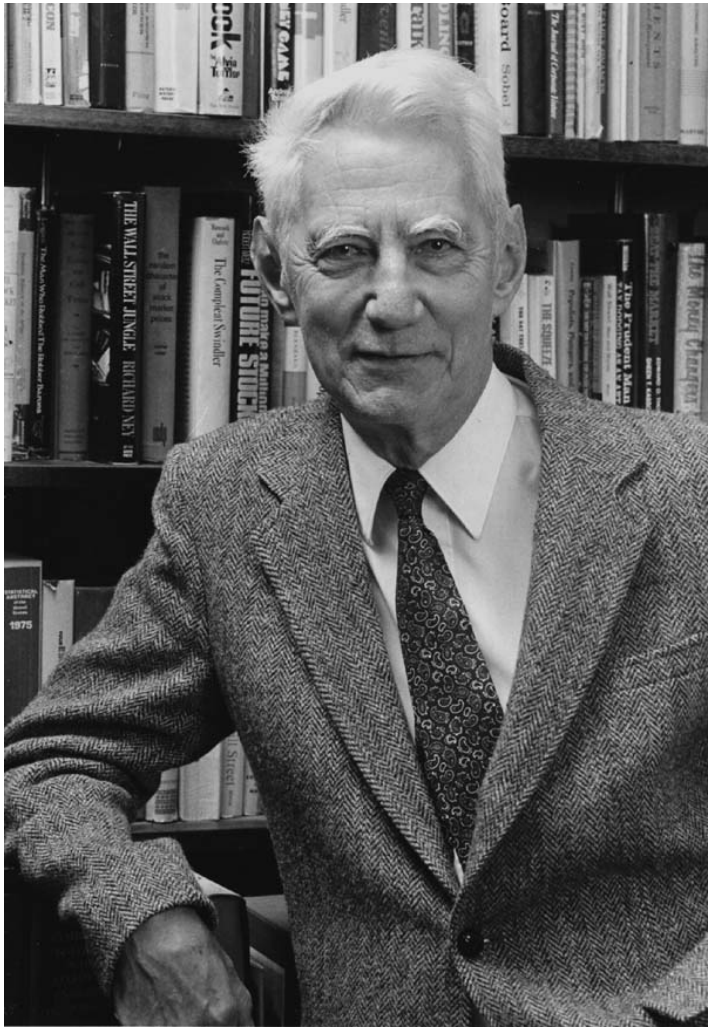


EAI 580 Computer 1968

The Transistor

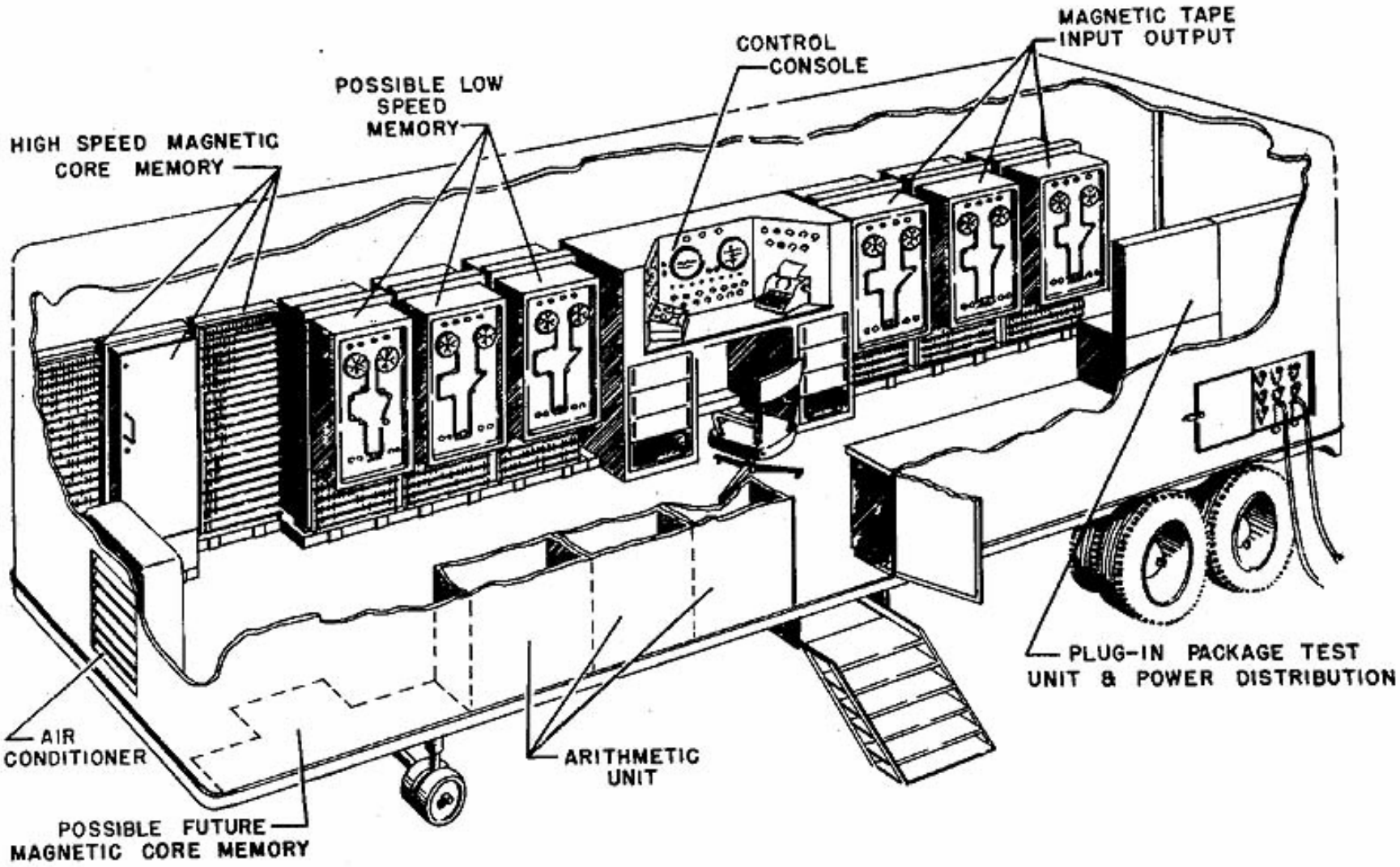
- **1948**: Evans research director Harold Zahl witnesses Bell Labs' new invention, the transistor, and becomes a strong advocate for its use in the Signal Corps. Zahl also ensured that the invention was made public, thereby helping spawn the modern electronics industry.

Claude Shannon



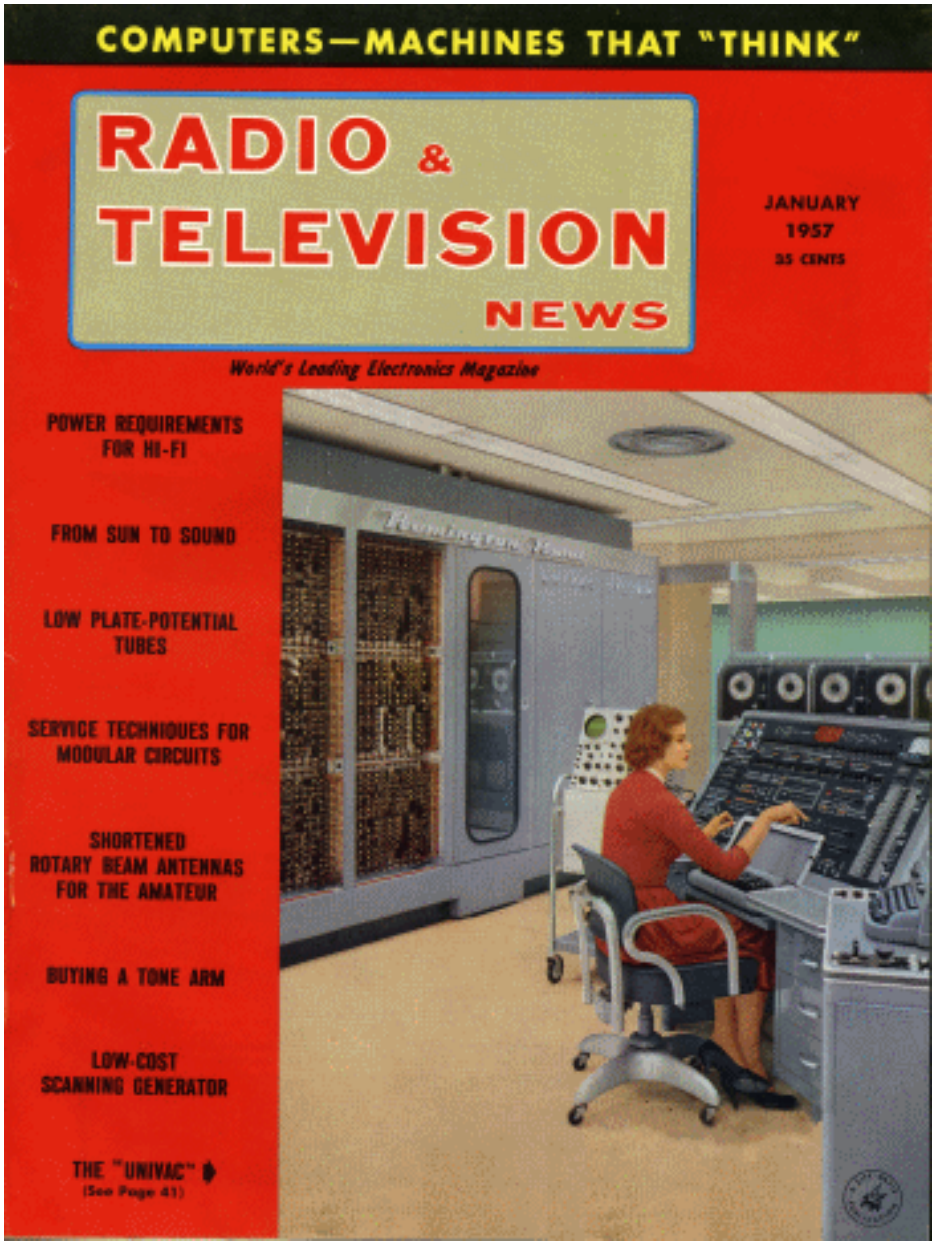
- **1948**: Claude Shannon, also at Bell Labs, publishes "A Mathematical Theory of Communication" which sets theory of computing and communications for decades to come.

1956: MOBIDIC (Mobile Digital Computer)



MOBIDIC (Mobile Digital Computer)

- **1956**: With an Electrodata 205 computer and Litton Digital Differential Analyzer becoming inadequate, and no funding available for a new IBM 704, Camp Evans decided to build its own computer.
- Sylvania won the contract, resulting in MOBIDIC (Mobile Digital Computer)
- “Mobile” meant it was small enough to fit inside a 30-foot Army truck.
- Several MOBIDIC systems were used at Evans and in Europe.
- They were among the first all-transistorized computers, and possibly the first to share data between computers. MOBIDIC also led to Fieldata, which became the modern ASCII system.

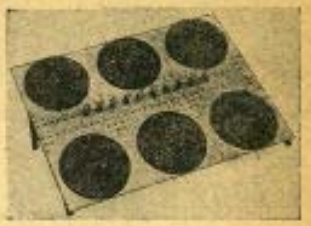


January 1957 Radio and Television News. "The UNIVAC" Computer

BUILD 125 COMPUTERS AT HOME WITH GENIAC®

ONLY $19.95

With the 1958 model GENIAC®, the original electric brain construction kit including seven books and pamphlets, over 400 parts and component rack, and parts tray, and all materials for experimental computer lab plus DESIGN-O-Matic®.



A COMPLETE COURSE IN COMPUTER FUNDAMENTALS

The GENIAC Kit by itself is the equivalent of a complete course in computer fundamentals, in use by thousands of colleges, schools and industrial training labs and private individuals. Includes everything necessary for building an astonishing variety of computers that reason, calculate, solve codes and puzzles, forecast the weather, compose music, etc. Included in every set are seven books described below, which introduce you step-by-step to the wonder and variety of computer fundamentals and the special problems involved in designing and building your own experimental computers—the way so many of our customers have.

ANYONE CAN BUILD IT!

You can build any one of these 125 exciting electric brain machines in just a few hours by following the clear cut step by step directions given in these thrilling books. No soldering required . . . no wiring beyond your skill. But GENIAC is a genuine electric brain machine—not a toy. The only logic and reasoning machine kit in the world that not only adds and subtracts but presents the basic ideas of cybernetics, boolean algebra, symbolic logic, automation, etc. So simple to construct that a twelve year old can build what will fascinate a PhD. In use by thousands of schools, colleges, etc. and with the special low circuitry you can build machines that compose music, forecast the weather, which have just recently been added.

TEXT PREPARED BY MIT SPECIALIST

Dr. Claude Shannon, known to the readers of "ASTOUNDING" for his invention of the electronic mouse, that runs a maze, learning as it goes, formerly a research mathematician for Bell Telephone Laboratories is now a research associate at MIT. His books include publications on Communication theory and the recent volume "Automat Studies" on the theory of robot construction. He has prepared a paper entitled "A Symbolic Analysis of Relay and Switching Circuits" which is available to purchasers of the GENIAC. Covering the basic theory necessary for advanced circuit design it easily extends the range of our kit.

The complete design of the kit and the manual as well as the special book DESIGN-O-Matic® was created by Oliver Garfield, author of "Minds and Machines," editor of the "Gilford Child Magazine" and the "Review of Technical Publications."

KIT IS COMPLETE

The 1958 GENIAC comes complete with the following books and manuals and over 400 components.

1) A sixty-four page book "Simple Electric Brains and How to Make Them."

2) Beginners Manual—which outlines for people with no previous experience how to create electric circuits.

3) "A Symbolic Analysis of Relay and Switching Circuits" By Dr. Claude Shannon provides the basis for new and exciting experimental work in the kit owner who has finished Book No. 1.

4) DESIGN-O-Matic® introduces the user to over 50 new circuits that he can build with GENIAC and outlines the practical principle of circuit design.

5) GENIAC STUDY GUIDE updated is a complete course in computer fundamentals, this guides the user to more advanced literature.

6) A Machine to Compose Music shows in an actual circuit what other GENIAC owners have been able to do on their own in designing new devices.

7) A Machine to Forecast the Weather—again a new advance in scientific thinking created by one of our users who was inspired on his GENIAC kit.

Plus all the components necessary for the building of over 125 machines and as many others as you can design yourself.

OVER 20,000 SOLD

We are proud to announce that over 20,000 GENIACS are in use by satisfied customers—schools, colleges, industrial firms and private individuals—a tribute to the skill and design work which makes it America's leading scientific kit. People like yourself with a desire to inform themselves about the computer field know that GENIAC is the only method for learning that includes both materials and texts and is devoted exclusive to the practical hand in computer study.

You are safe in joining this group because you are fully protected by our guarantee, and have a complete question and answer service available at no cost beyond that of the kit itself. You share in the experience of 20,000 kit users which contributes to the success of the 1958 GENIAC—with DESIGN-O-Matic® the exclusive product of Oliver Garfield Co., Inc., a GENIAC is truly the most complete and unique kit of its kind in the world.

COMMENTS BY CUSTOMERS

We know the best recommendation for GENIAC is what it has done for the people who bought it. The comments from our customers we like best are the ones that come in daily attached to new circuits that have been created by the owners of GENIACS. Recently one man wrote: "GENIAC has opened a new world of thinking to me." Another who designed the "Machine that Forecasts the Weather" commented:

"Several months ago I purchased your GENIAC kit and found it an excellent piece of equipment. I learned a lot about computers from the enclosed books and pamphlets and I am now designing a small relay computer which will include arithmetical and logical units . . . another of my pet projects is information to a weather forecaster. I find that your GENIAC kit may be used in their construction. I enclose the circuits and their explanations."

Eugene Dowling, Malden

Oliver Garfield Co., Inc. Dept. ASF-10
108 East 16th St., N. Y. 3, N. Y.

Please send me at once the GENIAC Electric Brain Construction Kit, 1958 model. I understand that it is guaranteed by you and may be returned in seven days for a full refund if I am not satisfied.

☐ I have enclosed $19.95 (plus 50c shipping in U.S.A., $1.50 west of Miss., $2.00 foreign). 3% New York City Sales Tax for N. Y. City Residents.

☐ Send GENIAC C.O.D. I will pay postman $19.95 + postage and C.O.D. charges.

Name.....

Address.....

1958 Geniac Analog Eduacational Computer Kit (Oliver Garfield Co. N.Y.C.)

R.E.S.I.T.O.R.S

- 1965-1970:
- Claude Kagan and
- Burroughs 205
- PDP-8 “straight 8”
- A first amateur computer club (~1966) in Hopewell NJ
- Project Might and social awareness

Interdata

- 1966: Interdata formed by EAI employees to challenge DEC in the booming minicomputer field.
- Eatontown, NJ

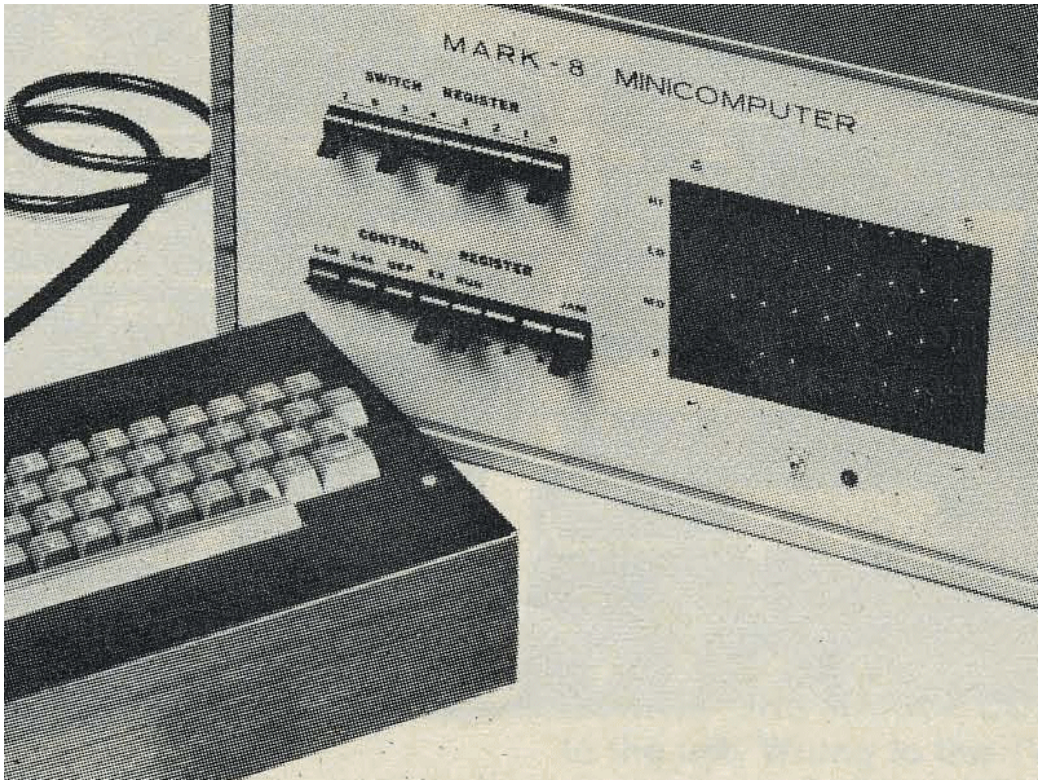
The 1968 Interdata Model 3 Control Computer could handle 16 and 32 bit instruction word lengths, had 1024 bytes of memory expandable to 65,536 bytes, 2 microseconds cycle time, and had 16-bit arithmetic and 16 general registers. It sold for about $6,000.

The Pre-Market Period (1971-1973)

- 4004 and 8008
- TV Typewriter and other pre-computers, hardware hobbyists computers

TV Typewriter at InfoAge Museum, Wall, NJ (MARCH)

Radio Electronics Mark 8



Radio-Electronics micro-computer
Engineered by John Titus. Radio City Station NYC 1974

Amateur Computer Group of New Jersey

- Founded by educator Sol Libes, 1975
- Based in Scotch Plains, NJ
- Community workshop environment
- Processor-based SIG meetings
- Teaching students about computers

Sol Libes

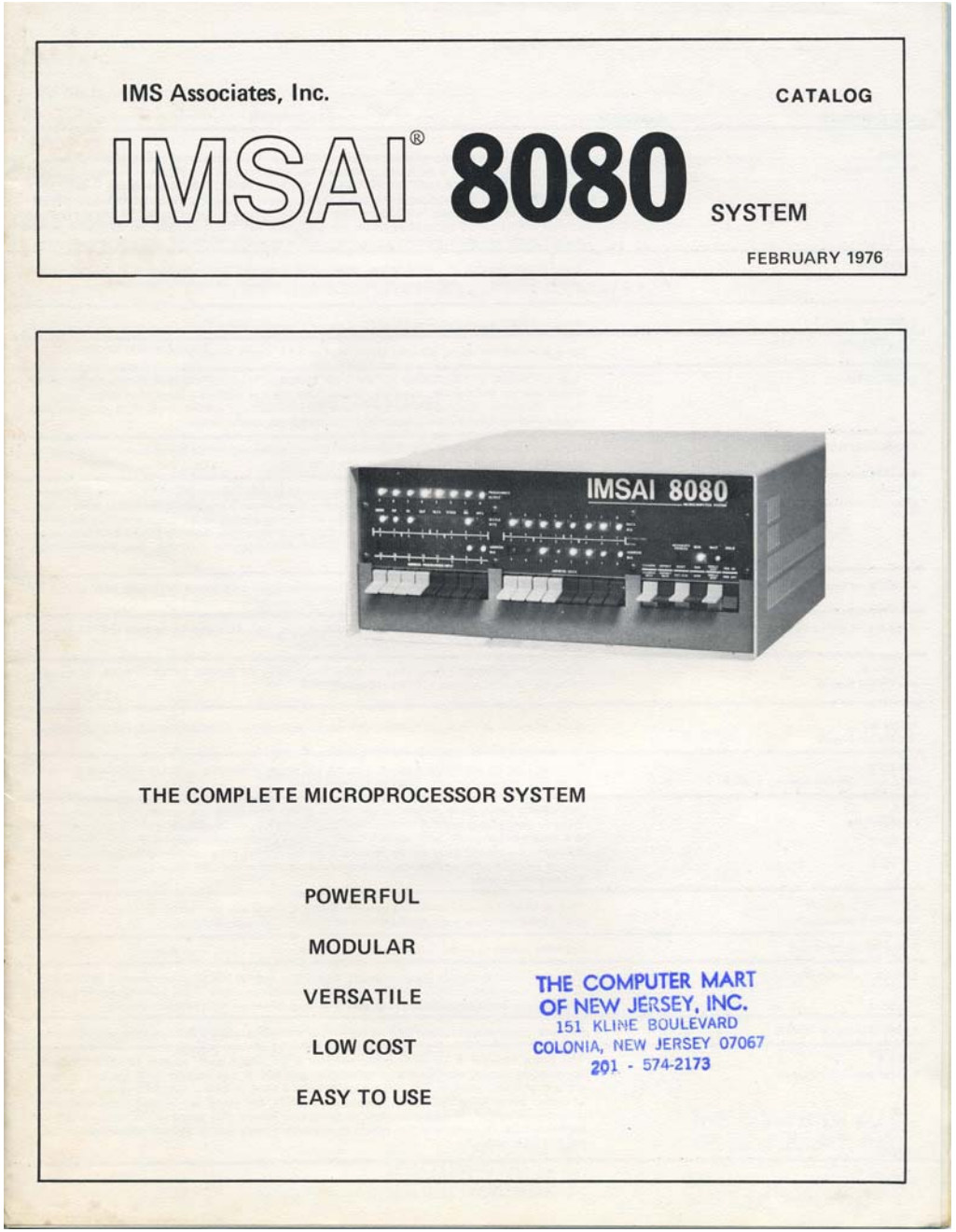
1975 Computer Stores

- Larry Stein's Computer Mart (Woodbridge township)
- Robert Radcliffe's Hoboken Computer Works

IMSAI 8080 Computer

February 1976

The Computer Mart of New Jersey, Colonia



An ad from Teletypewriter Communications Specialists, Inc

Berkeley Heights, NJ

cir. 1976-1977

The teletype was 4 devices in one, and it was the most popular I/O device during the mid-1970's

TELETYPE MODEL 33

TWX or COMPUTER INTERFACE

$840.00

- 33ASR PRIVATE-LINE
- FRICTION FEED
- COPYHOLDER & STAND
- ANSWERBACK
- MANUAL READER
- GUARANTEED 30 DAYS
- F.O.B. NEW JERSEY
- CRATING INCLUDED
- NOTHING ELSE TO BUY

Options:

- AUTOMATIC READER ADD $50
- READER RUN CARD (DEC) ADD $75
- SPROCKET (PIN) FEED ADD $100
- TAPE WINDER (ELECT.) $55 - WINDUP $22
- EIA INTERFACE $110
- TAPE UNWINDER (NON-ELECT.) $33
- PAPER WINDER (ELECTRIC) $50

--- NEW FREE CATALOG AVAILABLE NOW ---

TELETYPEWRITER COMMUNICATIONS SPECIALISTS, INC.

550 SPRINGFIELD AVENUE
BERKELEY HEIGHTS, N. J. 07922

PHONE - 201-464-5310 TWX - 710-986-3016 TELEX - 13-6479

BUY * SELL
SERVICE * LEASE

* OVERHAULING & MODIFICATIONS
* REPLACEMENT PARTS
* PAPER--TAPE--RIBBONS
* VIDEO TERMINALS
* DECWRITERS
* ACOUSTIC COUPLERS

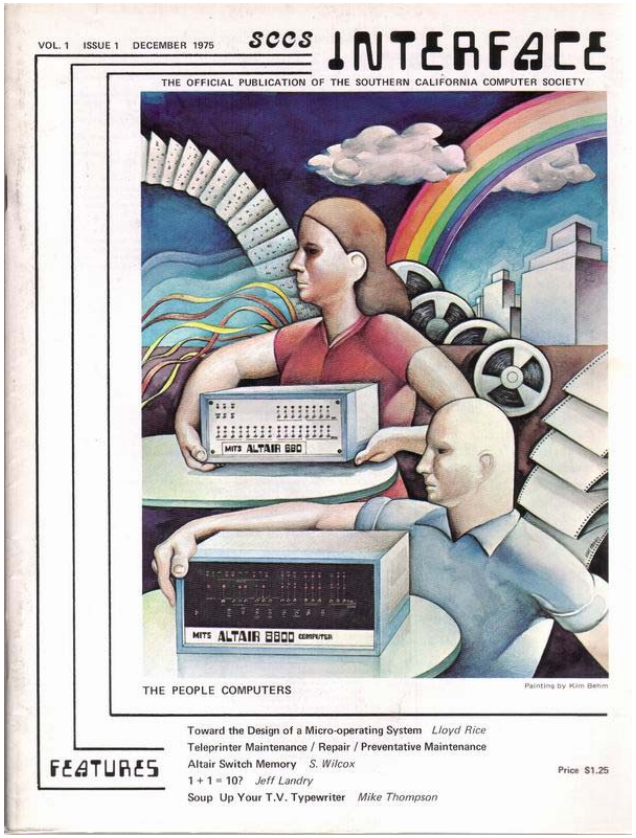
S.C.C.S. INTERFACE

Delaware Valley Chapter of SCCS

- SCCS – Southern California Computer Society
- Largest chapter (?) outside of Southern California

"…But I think if you want to know where the most important area is in The country for members and microcomputer activities I'd say Philadelphia. It's not in California – It's Philadelphia."

Creative Computing Sept-Oct 1976 Interview by David Ahl of SCCS President, Lou Fields.



NEW JERSEY COMPUTER FESTIVAL

Over 2K hobbyists are expected to attend the May 2nd Amateur Computer Convention in Trenton, NJ. The gathering, called the "Trenton Computer Festival," will include exhibits, technical talks, panel discussions, and (perhaps most important) ample opportunity for personal interchange. It will be held at Trenton State College.

It is sponsored by the TSC Digital Computer Society, and the Amateur Computer Group of New Jersey. For details, contact: Prof. Sol Libes, Union County Technical, Scotch Plains NJ 07076, (201) 889-2000; or Dr Allen Katz, Trenton State College, Trenton NJ 08625, (609) 771-2487.

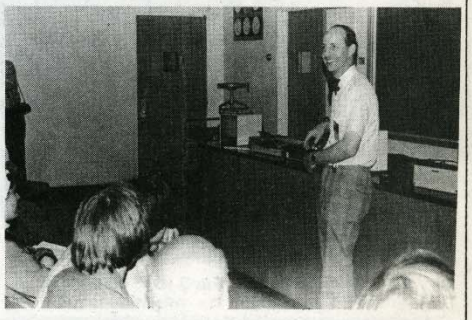
TRENTON COMPUTER FESTIVAL

TCF™

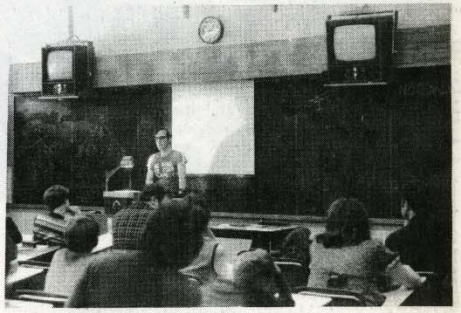
Trenton Computer Festival, Trenton State College

- 5-2-1976
- Founded by Prof. Sol Libes and Dr. Allen Katz
- "..first manufacturer-independent computer convention of national scope for computer hobbyists" - Sol Libes
- 45 exhibitors including MITS, IMSAI, Processor Tech., OSI, SWTPc, Cromemco, The Digital Group
- Attendance 1500
- Outdoor flea market – a "ham fest" for computers and components

MORE flea market



DR. ROBERT SUDING talked about, and demonstrated his new Z-80 microcomputer system.



DAVE AHL (Creative Computing editor) spoke on computer games.

PACS is born

DEC PDP 11/40

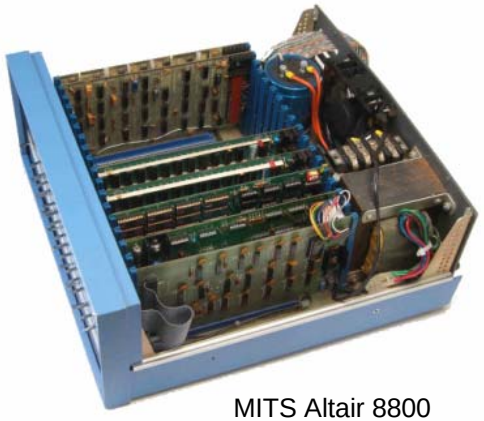
The PhiladeIphia Area Computer Society, PACS, was founded in June 1976 by Dick Moberg.

MOS KIM-1 and SWTPC 6800

- The first PACS members were generally engineers and ham radio operators, plus mainframe software specialists

- Engineers using the microprocessor not as a computer, but as a simple electronic controller replacing dozens of discrete components

- No SIGS, just one main meeting centered around building a computer and sharing software.



MITS Altair 8800

PC'76

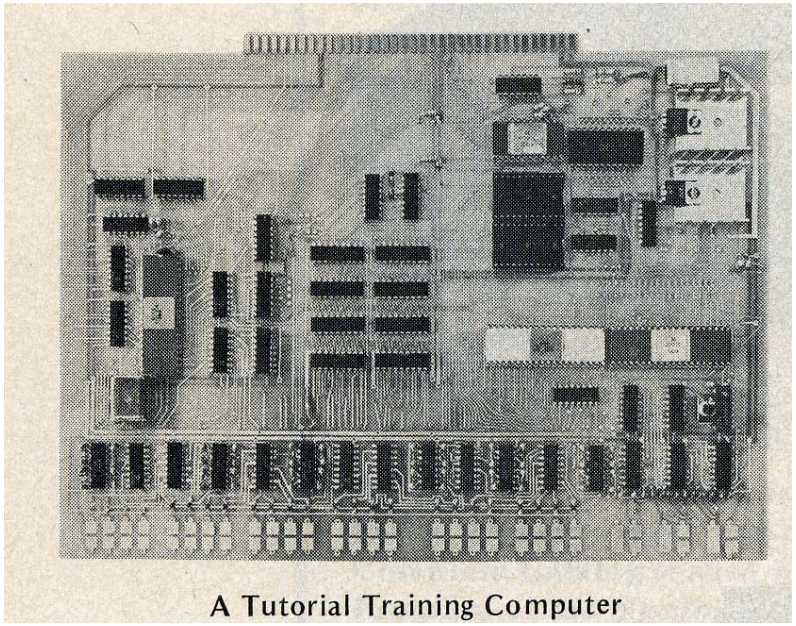
John Dilks‘ PC’76 was the first MidAtlantic PC trade show

Processor Technologies Sol-20

IMSAI 8080

DATAC 1000

- A single board computer (SBC)
- Designed by PACS members Carmen DiCamillo and Roland James (Datac Engineering)
- Introduced many PACS members to microcomputers
- Featured in Byte Magazine July 1977



A Tutorial Training Computer

- Datac Engineering, POB 406, Southampton PA 18966.
- Two models, the tutorial version ($185) and the fully populated version ($345). Both were assembled, with power supply.
- 6502 processor
- Instantly usable computer with expansion capabilities
- Touch sensitive input keypads
- Documentation package

MOS TECHNOLOGY, INC.

VALLEY FORGE CORPORATE CENTER

950 RITTENHOUSE ROAD NORRISTOWN, PA. 1940

TEL: (215) 666-7950 TWX:510/660/403

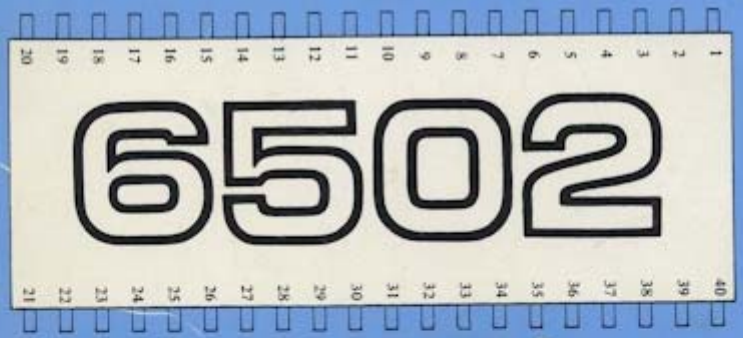
- Will Mathys – MOS Technologies, helped groups get 6502 chips
- 6502 Processor
- Chuck Peddle
- KIM

MOS 6502

- By 1977 the MOS 6502 had become the number one selling microprocessor chip.
- MICRO is a magazine dedicated to just computers using the 6502 microprocessor and related information
- MOS was headquartered in Norristown, PA

The BEST of MICRO™

AIM 65 SUPER JOLT PET KIM-1 Apple II



SYM-1 DATA HANDLER Challenger II DATAC 1000

Volume 1

Evolution - 1978

Began to depart from a primary function of sharing software and building component hardware.

New members wanted to jump in with a working system, packaged software. More SIGs form.

PC’78 moves to Philadelphia Civic Center.

First PACS Music Show

Size of US market in 1978:

- 180,000 – 250,000 units
- 15,000 PET’s
- 8-20,000 TRS-80’s
- 13-27,000 Apple II’s
- 75-100,000 – Everyone Else.

Before the WWW became widely available, there were dozens of MidAtlantic-based bulletin board systems

BaphoNet	1-718-499-9277	Brooklyn NY	Tony Iannotti	1200
Hitch Hikers Guide	1-315-589-7361	Williamson NY	Fritz Howard	1200
GEOMAKER BBS	1-203-762-7211	Wilton CT	Mark Grand	1200 7p-7a
SEAboard	1-201-694-3348	Wayne NJ	Andy Foray	1200
SEAdog Leader	1-201-472-8065	Clifton NJ	Thom Henderson	2400 MO:
Wizards Tower	1-201-288-9076	Teterboro NJ	Karl Schinke	1200 DA:24hrs
The Wizard's BBS	1-201-379-2185	Springfield NJ	Rick Siegel	2400 DA:24hrs
Spider's Web	1-201-782-7640	Flemington NJ	Rich Karas	1200 DA:24hrs
Cloudbase	1-201-292-1365	Morris Plains NJ	Bill Aubin	2400 DA:24hrs
The Xtra BBS	1-201-284-2198	Clifton NJ	Marv Shelton	1200 WK:5p-7a
Dance Studio	1-201-247-0573	E Brunswick NJ	Gee Wong	2400 WK:6a-12p
Cork Board	1-201-943-2226	Ridgefield NJ	Steven Linhart	1200 DA:24hrs
Wolfpack Fido	1-201-822-8325	Madison NJ	Admiral Bartsch	1200 DA:3p-6a
Metatek Fido	1-201-286-2567	Toms River NJ	Thomas Kenny	1200 DA:10p-1pm
Dumps R Us	1-201-885-7404	NJ	Gee Wong	1200 DA:3a-6a(mail only)
DEC-House	1-609-429-6630	CherryHill NJ	Brian Sietz	2400 DA:12m-530p
Gandalf BBS	1-609-799-4643	Plainsboro NJ	Frank Petillo	1200
Blackbeards	1-609-266-0517	Atlantic City NJ	Dan McGahn	2400
The Morning Zoo	1-609-424-5823	Cherry Hill NJ	Bruce Kramer	1200
PHiDo	1-609-652-2921	Pomona NJ	Dr. Ken Tompkins	1200 DA:24hrs
Pinelands BBS	1-609-354-9259	Cherry Hill NJ	Bob Pritchett	1200
QUG BBS	1-215-743-1799	Philadelphia PA	Mort Lightman	2400 DA:24hrs
SoftShop	1-215-663-1487	Elkins Park PA	Brad Karp	2400
Stone Wall	1-215-367-6558	Boyertown PA	Peter Weilnau	2400
Rydal Board	1-215-884-6122	Rydal PA	Randy Mananka	2400 DA:24hrs
The Labyrinth	1-215-862-5403	New Hope PA	Dave Shevett	1200
LANCO Fido	1-717-354-5027	New Holland PA	John Strittmatter	1200 WK:7p-7a
First State	1-302-764-7522	Wilmington DE	Bob Klahn	2400
Stockware	1-302-655-6342	Wilmington DE	Van Olmstead	2400 WK:8p-8a
PCPUG Central	1-302-328-3435	Bear DE	Dan North	1200
dWolf	1-302-478-8703	Wilmington DE	Lee Wolf	1200
Beagles Nest	1-302-731-7842	Newark DE	Joel Garrett	2400 WK:10p-5p
GoldenRetriever	1-302-737-2294	Newark DE	Jim Goldschneider	2400
Basset Board	1-302-656-8003	Wilmington DE	Garry Cantwell	2400
Hubbin's Board	1-302-239-3969	Hockessin DE	Van D Olmstead	2400
Scholar's Workbench	1-302-451-8045	Newark DE	Ed Ferrara	1200
K-9 & Company	1-302-475-2201	Newark DE	Mike Jacobs	1200
TurboPointer	1-302-774-5579	Wilmington DE	Bob Klahn	2400 WK:5p-8a

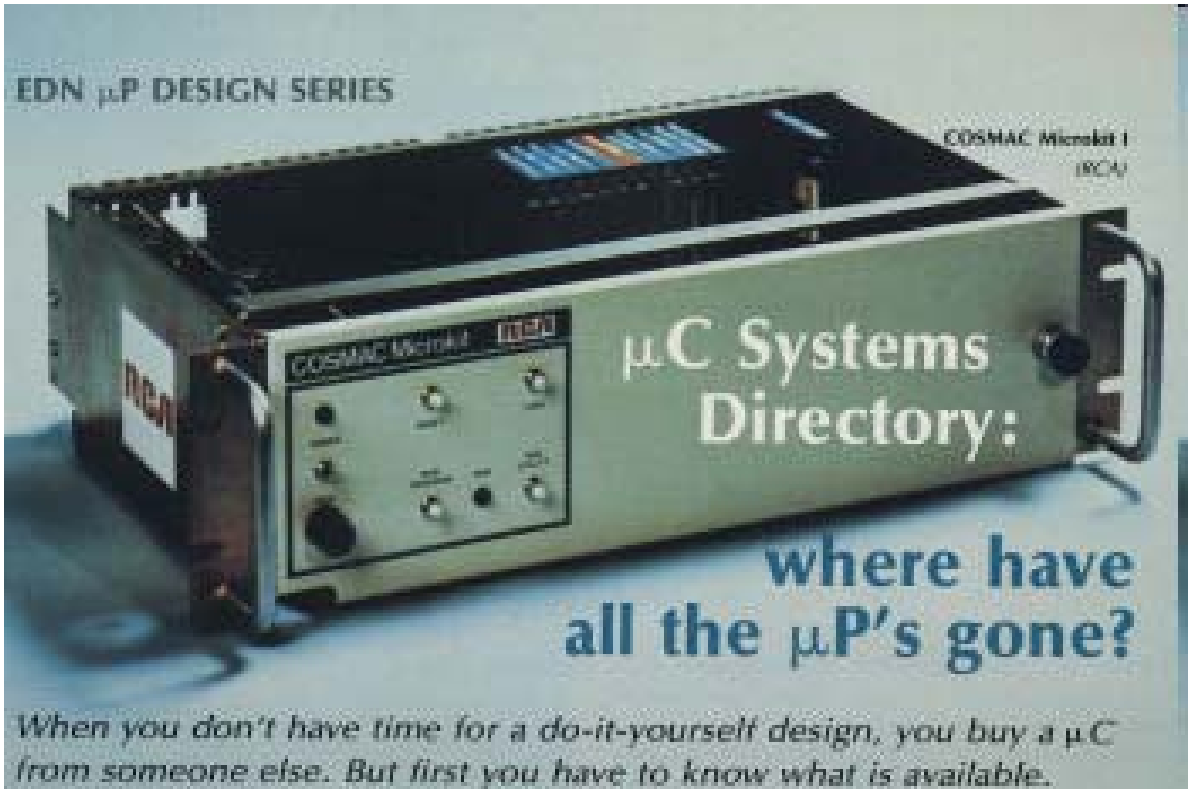
Dela-where?

- Computer Data Systems "Versatile 2" s-100 computer 1977 (Newark, Delaware)
- Project Delta (U of Del)
- Plato (U of Del.)
- DuPont / IBM

AT&T

The AT&T Model 6300 PC

RCA COSMAC Microkit 1



The COSMAC Microkit 1 (RCA) was an early 1801 microcomputer kit from 1975.

The Franklin ACE1000

Image courtesy OldComputers.com

Commodore C-64

Introduced:

January 1982

10-17 Million units sold through 1993.

For only **$595**, you get

- powerful graphics that approach those of the Apple and the Atari,
- a complete sound synthesizer unlike anything else available
- 64K of memory

Casio

Casio FX-730P

Pioneer in hand-held computing

Image courtesy Pocket Computer World

Vintage Computing Today

- OldComputers.net
- The DigiBarn Computer Museum
- ClassicCMP
- Vintage Computer Festival
- Bitsavers.org Software and Document Archive
- Erik Klein's vintage-computer.com
- Old-Computers.com Virtual Museum
- Ebay.com

Vintage Computing Today

- 2005: MARCH forms!

•http://www.midatlanticretro.org

•Over 225 Members in MidAtlantic Region

•Computer Museum At InfoAge Science Center, Wall NJ

•Host of Vintage Computer Festival East

•Preserver of Computers and Computing History

•Workshops, Swap Meets, Rescue Missions

•Fun, Education, Community Service

Cir. 1966 Digital PDP 8

Vintage Computing Today

Vintage Computers In Education