

## The Computer Museum

# NEWS

## Tools & Toys

### The Amazing Personal Computer

Over 120 million personal computers are in use today, according to International Data Corporation. Their small size and low cost make them accessible to millions of people worldwide. But many people never go beyond word-processing or spreadsheets.

*Tools & Toys: The Amazing Personal Computer*, an exhibit opening June 13, goes far beyond these uses, stretching the boundaries of today's applications. Music, group ware, graphics, video production, and simulations are some of the exciting and amazing new applications. The \$1 million exhibit will feature over 35 different interactive programs for visitors to try out.

Originally known as the Computer Discovery Center, *Tools & Toys* was initiated by The Boston Computer Society (BCS). Now, some 40 corporations and volunteers, a blue ribbon and junior high school advisory group, and Museum staff, led by Greg Welch and David Greschler, are busy creating the exhibit.

The exhibition is being divided into seven different personal computer applications: Making Pictures, Playing Games, Making Sound, Sharing Ideas, Writing, Adding It Up, and Exploring Information.

Over 75 percent of the interactive programs featured in the exhibit are not commercially available now, but characterize the cutting edge of future uses. Museum staff, a growing cadre of volunteers, and a number of software companies are creating and adapting these interactive programs for Museum use.

One of the most exciting is a networking game: two to four visitors communicate via live video images and audio, as they work together to solve a puzzle. Exhibit Developer David Greschler explains, "Most network games are about fighting with other players. Ours is about networking with each other.

The main message is cooperation—people exchanging information with each other to achieve a common goal." The program is being created by Museum staff in consultation

He is developing a 3D action game, called *Manic Episode*, where visitors don special red/green glasses that render the images on a computer screen 3-dimensional. Visitors then travel through space contending with abstract 3D flying objects.

Another application that is not widely available is being designed for the "Writing" area by American Management Systems. It is for a pen-based system enabling people to use a pen to write letters, numbers, and math symbols on a screen and then watch the computer turn their writing into print.

In the "Making Sound" area—built like a sound studio—visitors will be able to create songs using a *SampleStick*, a computer-based musical instrument being developed by *Airtight Garage*. This technology involves

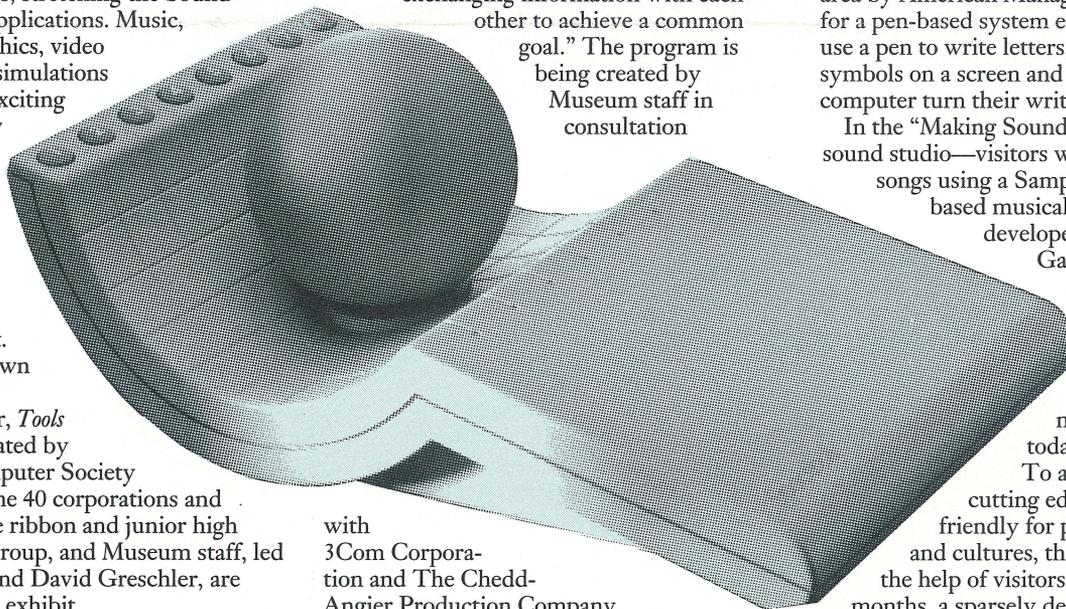
"sampling," rearranging recorded sounds, a technique popular with today's rap musicians.

To assure that this cutting edge software is user-friendly for people of diverse ages and cultures, the Museum enlisted the help of visitors themselves. For five months, a sparsely decorated, modest prototype area on the 5th floor, called the *Exhibit Lab*, became a center of activity, where visitors were asked to "road-test" the software.

The *Spaceball™* (at center) is a new hand-device people can use to interact with a personal computer.

Photo: Courtesy of Spaceball Technologies, Inc.

Continued on P.2



with 3Com Corporation and The Chedd-Angier Production Company.

For "Exploring Information," the Museum is writing entirely new software to use with a videodisc of experiments published by the American Chemical Society. The program takes a chemical explosion, which people find inherently fascinating, and makes it educational. Visitors can try out potentially harmful experiments in a safe environment, while also learning about the use of videodisc technology controlled by personal computers.

Another program is based on an original idea of volunteer programmer David Temkin.

Trip Report: January 5-9, 1992

# Dateline: Paris, France

In January, I was invited to speak at a conference on museums, science and technology at the Conservatoire des Arts et Metiers in Paris. This was part of a process begun by Francois Mitterand to refurbish four Paris museums by the end of 1994. It was great fun, very informative and an honor for The Computer Museum to be included. I chose to talk on "Hands on and Beyond: Computer Exhibits to Inspire the Layperson." Given the reactions of the audience of museum directors to The Computer Museum's exhibits and Exhibit Kits Program, the clamor for science museums to enter the computer age has certainly struck in Europe.

The trip gave me the opportunity to visit those organizations with significant collections of artifacts and those that are at the cutting edge of new exhibitions the Museum is interested in developing. At Groupe Bull, for example, I saw their glorious collection of refurbished machines that

go back to Bull's founding in 1931. In contrast, my visit to IRCAM (Contemporary Institute of Musical and Acoustic Research), the premier computer music institute located beneath the Pompidou Center, reinforced my conviction that there is enormous scope for a fascinating exhibition on computers and music.

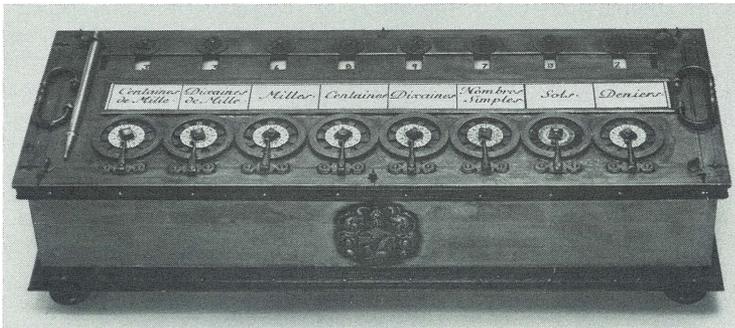
On the advice of Museum Exhibit Committee member, Brian Randell, of Newcastle, UK, I visited Claude Hennebert, Chief Engineer of the Paris Subway. The control of the suburban express line that travels at 100km per hour—with 50 second station stops and trains every two minutes, handling 50,000 people per hour, per track—was truly amazing. While the switches, signalling, and even train speed, are all computer controlled, the display of the subway system in the control room is ancient technology—a large cylindrical wall, back-illuminated with incandescent lights. This is a fascinating application of computer networks, but creativity is needed to turn it into a compelling interactive exhibit.

Getting back on the plane to return to The Computer Museum, I felt re-energized. And, I was delighted to see the Museum featured on an inflight entertainment video segment as we approached Boston.



Dr. Oliver Strimpel  
Executive Director

Courtesy: The Computer Museum



Pictured is a replica of the first calculator, designed by Blaise Pascal in 1645 and known as a Pascaline. Five of the world's seven Pascalines can be found at the Conservatoire des Arts et Metiers in Paris, where Dr. Strimpel spoke.

## Tools & Toys (continued from P.1)

Photograph: Aso Chibas



Shahi Smart (left) and Mercedes Manning try out "Making Your Own Movie" in the Tools & Toys Exhibit Lab. The students are from the Martin Luther King School's 8th grade computer class.

In a process known as formative evaluation, visitors contributed over 300 evaluations of various software interactives in the form of written comments, general suggestions, and observations. Many of these are being incorporated into modifications of the software. For example, the Making Your Own Movie program is being changed so that visitors will be able to record and edit more than one video segment of themselves.

At the end of the exhibit, the visitor is helped with the

question, "Where Do I Go From Here?" Along with practical advice, digital video provides a live forum on the subject: "Do computers save people time?" This final interactive station is being designed by Fluent, Inc., Founder and Museum Board Member Dr. David Nelson. He is modifying his company's state of the art technology to create what will be a first-of-its-kind Museum exhibit, where visitors will enter their own opinions via a digitized video image of themselves.

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Members Priority 10-noon April 25

# Two Days in "Virtual Reality"

Photograph: David Bohl



"Virtual reality" is coming to the Museum, Friday, April 24, from noon-5pm, and, Saturday, April 25, 10am-5pm. On April 25, 10-noon, Museum Members will have priority to explore this remarkable technology to climb into and manipulate computer-generated universes.

The Museum will have one of the first public demonstrations enabling two people to meet in one networked virtual world and cooperate on a virtual task.

**"A whole new kind of 'being there'" (Smithsonian)**

Wearing headmounts with goggles and sonic trackers that let them see and hear, they will move around the virtual world using joysticks. The object is to help each other build a wall out of virtual bricks, using wand-like devices.

In addition to being fun, this application is a model for a "collaborative design" process that doctors, researchers, architects, homeowners, and others can use to work together on projects.

Exploiting the latest advances in computer power, display technology, and force and motion sensing, VR is mainly the province of researchers. Because of recent innovations in technology, the Museum can offer VR on a personal computer. On a station that will be part of *Tools & Toys*, visitors can explore a house's interior and a fantasy landscape, using a hand-held spaceball from Spaceball Technologies. It was programmed by Eben Gay using WorldToolKit™ Software.

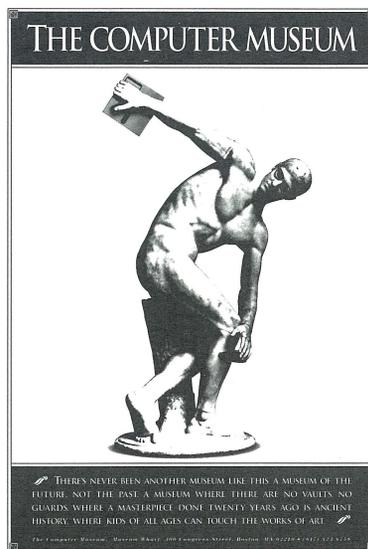
From the Museum's collection, Ivan Sutherland's Experimental Vision System, and a video showing how it works, will be on display. As early as the 1960s, Sutherland led efforts to create virtual environments. The vision system used a helmet with a pair of small CRTs, projecting images through mirrors to the user's eyes. The helmet was hooked up to a large device that hung from the ceiling, tracking movements of the person's head. Innovative hardware and software generated images consistent with the user's movements.

With the support of Intel Corporation, the Museum is using personal computers with 486 Intel microprocessors, Intel ActionMedia™ digital video boards, and Sense8 software to create this exhibit.

Sutherland's Experimental Vision System

## Disk Thrower?

This is one of four posters created recently for the Museum by the award-winning advertising agency, Mullen, South Hamilton, MA. "We wanted to say in a lighthearted way that the computer is as timeless as any great work of art and that this is why there is The Computer Museum," said Mullen Creative Director Paul Silverman. He and Senior Art Director Margaret McGovern donated their creative services in designing the posters. Eastern Rainbow donated separations and printing. Each poster is available at the Museum Store for \$10.00. Call (617)426-2800 ext. 307.



Creative: Mullen; Type: Williams Micrographics; Separations and Printing: Eastern Rainbow; Retouching: Dom DeNardo; Illustration: Ron Toelke

# TOOLS & Toys

## The AMAZING Personal Computer

### Who Is Creating This Exhibit?

#### Museum Staff

**Exhibit Development** Greg Welch, David Greschler, Lauren O'Neal, Oliver Strimpel, Gwen Bell

**Design** Theodore Groves, Åsa Chibas

**Construction** Don Greene, Wayne Cookson

**Education** Natalie Rusk, Nancy Boland, Jim Boyd, Noah Southall

**Programming** Dan Griscom, Stina Cooke, Ben Tremblay

#### Volunteer Programmers

Don Abrams, Michael Allen, Marcia Cohen, Thomas Flotte, Dan Freedman, Dick Gage, Eben Gay, Gloria Jacobs, Edmund MacKenty, Michael McCormick, David Owen, Joyce Sailor, Michael Stein, David Temkin

#### Contract Programmers

Maria Flanagan, Notable Productions, Ruth Schmidt

#### Software Evaluators

The BCS User Interface Group, Sharon Fenick, Brad Larson, Kathy O'Neill

#### Companies Building Interactives

Airtight Garage, American Management Systems, CAST, Fluent, Inc., Graphic Simulations Corp., Kurzweil AI, LCSi, MathSoft, Maxis Software, Pacer Software, Scholastic Software, Wolfram Research

#### Advisors

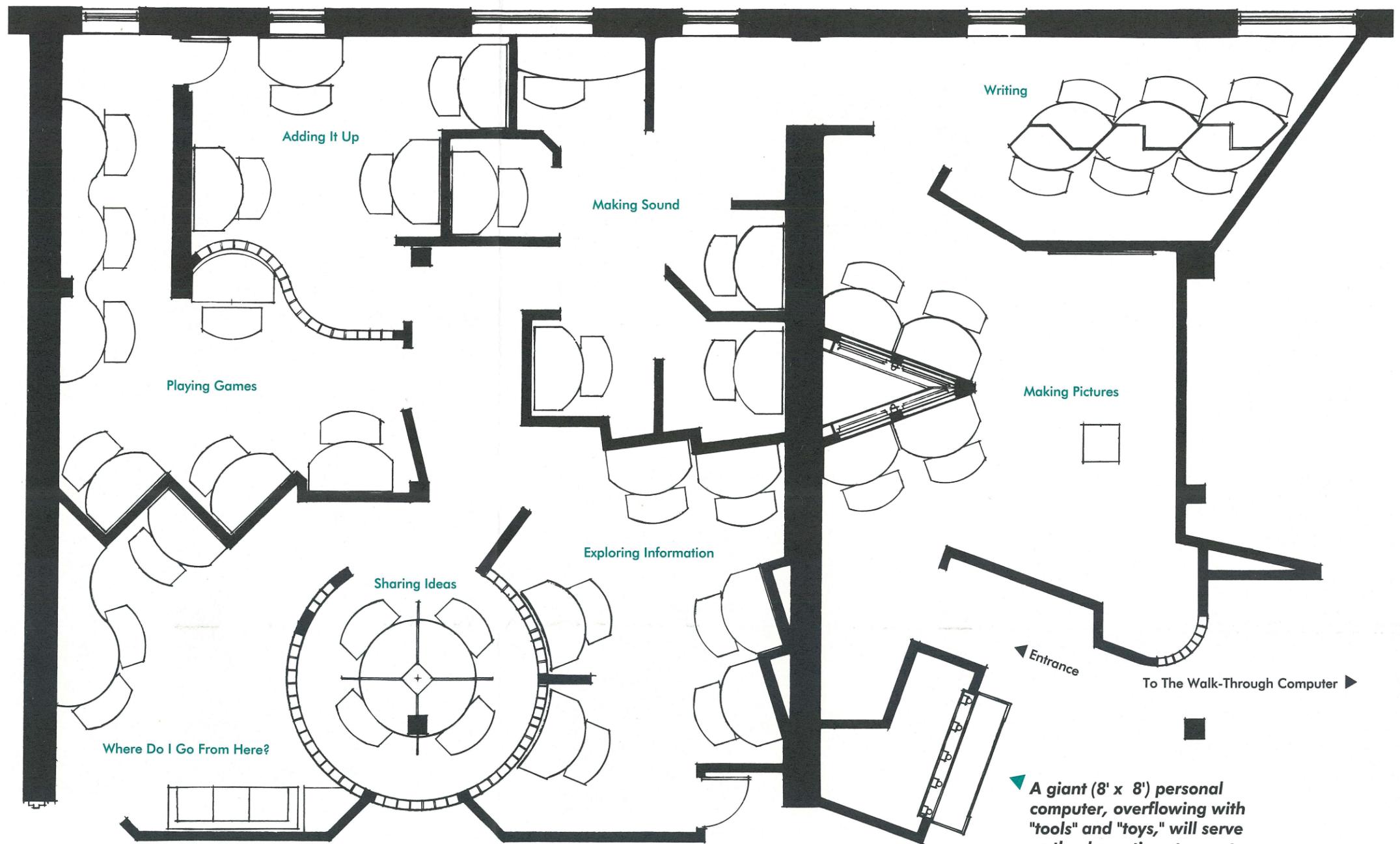
Gwen Bell, Director of Collections and Founding President, The Computer Museum, Richard P. Case, IBM Director of Technical Strategy Development, International Business Machines Corporation; Gardner C. Hendrie, Sigma Partners; Tracy Licklider, former President, The BCS; Ike Nassi, Director, Eastern Research, Apple Computer, Inc.; Ed Belove, Vice President, Software, Ziff Desktop Information; Steve Stadler, President, Finanz Inc.; James Starkey, former founder and CEO of Interbase Software Corporation; Dr. Oliver Strimpel, Executive Director, The Computer Museum

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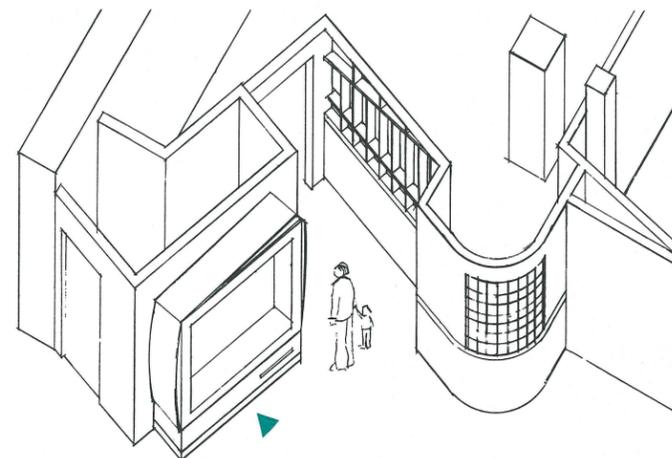
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◀ To The Image Gallery

Exhibit floor plan

▶ A giant (8' x 8') personal computer, overflowing with "tools" and "toys," will serve as the dramatic entrance to the exhibit. The Museum now seeks all manner of "tools" and "toys"—from teddy bears and trombones to slide-rules and typewriters. Please send contributions to Åsa Chibas at the Museum.



Axonometric projection of exhibit entrance

## Up & Running

### Sail Along With Captain Bill

The Museum is tracking Chicago sailor, Captain Bill Pinkney, 55, via satellite transmissions and the Enhanced Location Software for Argos (ELSA) computer program. He is trying to become the first African-American to sail solo around the world. The Museum is the only Boston site to follow his 27,000 mile journey.

Pinkney began the second half of his voyage in Hobart, Tasmania, on December 24, 1991. He should arrive in Boston in late May 1992. He hopes his voyage will teach students the importance of perseverance.

Here's how the Argos System works: A transmitter on Pinkney's 47-foot ship, *Commitment*, sends radio signals to a satellite which relays them to a ground station and then to a data processing center. The Museum logs into a computer network to find out the ship's position.

Pinkney is navigating with the help of a Global Positioning System (GPS), like one used by American soldiers in Operation Desert Storm. This portable, hand-held positioning and navigation unit is also being demonstrated. In conjunction with Boston Voyages in Learning, 54 Boston area schools have been following Pinkney. Many will visit the Museum to see how the system works. Call the Pinkney Hotline for his current location (617)426-2800 ext. 628.



Captain Bill Pinkney aboard his 47-foot cutter *Commitment*.

## Education

### Students Help Build Tools & Toys

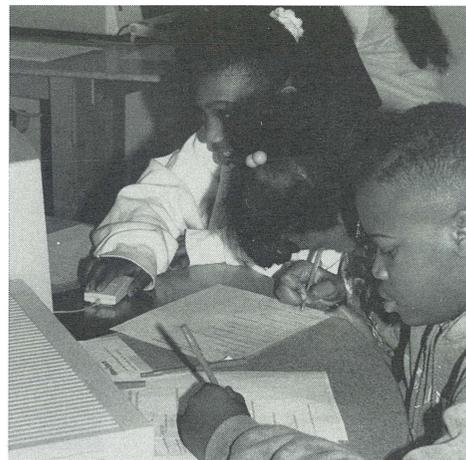
To assure that the *Tools & Toys* exhibit is user-friendly, the Museum asked an 8th grade computer class at Dorchester's Martin Luther King, Jr., Middle School to serve as the exhibit's Official Student Advisory Team.

On visits in January and March, the students tried out computer interactives being tested in the Museum's Exhibit Lab. Student Rose Hicks suggested that the Museum build a maze at the beginning of the exhibit. This encouraged the designers to add an element of mystery to the entrance. Two other students liked the word game program, but wished it were available in Spanish. The Museum is now developing a bilingual version. When students called out to each other in the Lab,

Designer Ted Groves saw that walls or columns got in the way at times. He now plans to build fewer walls and to use glass to aid visibility throughout the Museum.

**The Team** Ajoah Barkon, Eileen Custodio, Patrice Faucher, Shavon Fulcher, Tamesha Gilliard, Antonio Gonzalez, Elba Gonzalez, Rosemary Hicks, Damian Huggins, Tracey Jarrett, Mercedes Manning, Frances Perez, Moses Prince, Prissilla Robinson, Yakaira Rojas, John Saenz, Shahi Smart, Ferra Thomas, Ryan Thompson, Irischa Valentin, Sheree Weekes, Lester Young.

From the left: Rosie Hicks, Patrice Faucher, Damian Huggins evaluate interactives in the Exhibit Lab.

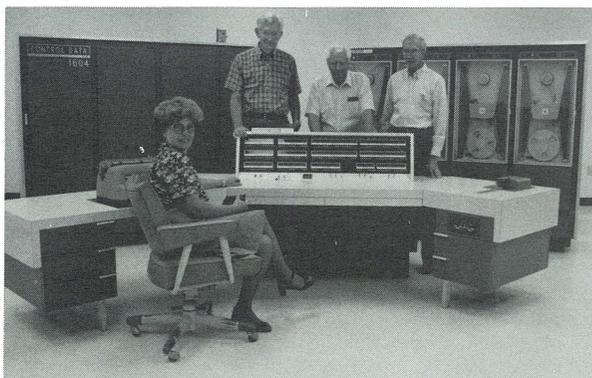


Photograph: Ajo Chibbas

## Collections

### Artifacts on the Go

How does the Museum use the thousands of artifacts in the historical collections? One way is to loan retired computer systems to Corporate Members and other museums. Cray Research, in Chippewa Falls, Wisconsin, has borrowed a 1959 Control Data Corporation CDC 1604 computer system (serial number 27), donated to The Computer Museum in 1987. Cray Research is developing a corporate museum to celebrate the accomplishments of its founders at companies like Univac and Control Data and to document Cray's own achievements in supercomputing.



Courtesy: The Computer Museum

Standing (from left to right) with Control Data Corporation's CDC 1604 are founders Frank Mullaney, George Hanson, and Les Davis. Janet Robidoux, Cray's museum project staff consultant, is seated at the console.

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We apologize for any inadvertent omissions from our donor list. Please inform us of any errors so that we may correct our records.

## Upcoming Events

### Exhibits

**Friday, April 24, 1992 noon-5pm**  
**Saturday, April 25, 1992 10am-5pm**  
**(April 25, Members Priority 10-noon)**

#### Two Days in Virtual Reality

Meet another person in an artificial world, created on a personal computer, and then together build a wall out of virtual bricks. You can also use a hand-held "spaceball" to explore a house's interior and a fantasy landscape. Also on display: Ivan Sutherland's Experimental Vision System with a video showing how this 1960s VR prototype works. Free with Museum admission.

#### Through May 1992

**Demonstrations daily: 11:15am and 2pm**

#### Sailing, Satellites and Software

Follow Captain Bill Pinkney, as he tries to become the first African-American to sail solo around the world. Free with Museum admission.

**Opens June 13, 1992**

#### Tools & Toys: The Amazing Personal Computer

Music, group ware, graphics, video production, and simulations are some of the exciting and amazing new applications featured at 35 different interactive stations. Over 75 percent of the interactive programs are not commercially available, but are the cutting edge of future uses. Free with Museum admission.

### Events

**Friday, May 1, 1992**

#### The Computer Bowl

**6:00pm** Cocktails and Dinner, *Park Plaza Hotel*  
**9:00pm** Pre-Bowl MVP Playoff, *Park Plaza Castle*  
**9:30pm** The Computer Bowl, *Park Plaza Castle*  
**10:30pm** Awards Ceremony and Champagne Reception, *Park Plaza Castle*

This now classic industry event returns to Boston as the East Coast defends its title, "Computer Masters of the Universe." Broadcast live by satellite from The Park Plaza Castle, Boston, to Xerox Palo Alto Research Center, CA. For ticket information and West Coast schedule, call (617)426-2800 ext. 399.

**Thursday, July 2-Tuesday, July 6, 1992**  
**(Harborfest)**

**Saturday, July 11-Thursday, July 16, 1992**  
**(Sail Boston)**  
**11:15am and 2:00pm**

#### "Sail Wars"

This NOVA film shows how the American team used computers to redesign the hull and sails of their boat for the 1987 America's Cup Race. In the 5th floor auditorium. Free with Museum admission.

## VIRTUAL REALITY IS HERE ON A PC!

**WINTER: The Computer Museum is open Tuesday-Sunday, 10am-5pm. Closed Monday, except Boston school holidays and vacations. Closed Thanksgiving, Christmas and New Year's Day.**

**SUMMER HOURS BEGIN JUNE 21: Open daily 10am-6pm, Fridays until 9pm.**

**ADMISSION: Adults \$6.00, students and seniors \$5.00. Half price Saturday 10am-noon. Free to Museum Members and children under five. For more information on exhibits or special events, call our talking computer at (617) 423-6758.**

### To Join:

Members get free admission for one year; The Computer Museum *NEWS*, a quarterly newsletter of Museum activities; the *Annual*, a richly illustrated journal of computer history; invitations to exhibit previews and members-only events; advance notice of exhibitions and lectures; a 10% discount on purchases over \$5 in The Computer Museum Store. For more information, call the Membership Department (617)426-2800 ext. 338.

#### Individual Memberships

- \$30 One-year  
 \$50 Two-year  
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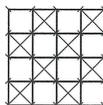
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