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Highlights

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Ralph Baer one of recipients of the 2004 National Medal of Technology

President George W. Bush announced the recipients of the Nation's highest honour for science and technology, naming the recipients of the 2004 National Medal of Science and National Medal of Technology.



Ralph H. Baer (born 1922) is a German-born American inventor, noted for his many contributions to games and the video game industry. He is perhaps best known for leading the development of the first home video game console - the Magnavox Odyssey, which was introduced in 1972. Baer also invented Simon, an electronic pattern-matching game that was immensely popular in the late 1970s and 1980s.

The National Medal of Technology honours individuals who embody the spirit of American innovation and who have advanced the Nation's global competitiveness. Their vision and accomplishments have helped commercialise new technologies, create jobs, improve American productivity, and stimulate the Nation's economic growth and development. This award, established by Congress in 1980, is administered by the Department of Commerce.

Contact us:

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Readers - what would you like to see in this magazine? Drop us a line and let us have your suggestions!

Newsbytes

Midway Arcade Treasures unearthed on PSP - Mortal Kombat 1-3, Joust, Rampage, Defender, and other classic arcade titles debut on Sony's portable.

Having already conquered all current consoles and the PC, the Midway Arcade Treasures series has now arrived on the PSP. Today, Midway Games shipped Midway Arcade Treasures: Extended Play, the first version of the popular retro series for Sony's portable. It retails at the budget price of \$29.99 and is rated M for Mature.

Why would an arcade compilation carry an M rating, you ask? Because Extended Play features ports of the original Mortal Kombat games, which ignited controversy in the early 1990s for their blood-spraying, spine-ripping combat. The first three MK games--Mortal Kombat, Mortal Kombat II, and Mortal Kombat 3--are featured in the compilation. All three games will support multiplayer action via the PSP's built-in wireless functionality.

If you can't bring yourself to "finish him!", Midway Arcade Treasures: Extended Play also sports 17 other more family-friendly classics from the golden era of brass tokens. Among them are the King Kong-esque urban destruction game Rampage and Spy Hunter, which is being adapted into a film starring Dwayne "The Rock" Johnson. Also in the comp are Joust and Gauntlet, which are also available as à la carte Xbox Live Arcade games for the Xbox 360. The full list of games is as follows:

Multiplayer Wireless:

- Klax
- Joust
- Marble Madness
- Toobin'
- Wizard of Wor
- Xybots
- Arch Rivals
- Championship Sprint
- Cyberball 2072
- Mortal Kombat
- Mortal Kombat II
- Mortal Kombat 3
- Rampage (3-player)
- Rampart (3-player)
- Xenophobe (3-player)
- Gauntlet (4-player)

Single Player Only:

- Spy Hunter
- Sinistar
- Defender
- Paperboy

(GameSpot Dec 12, 2005)

Joystick games come back

Modern video game controllers have more buttons and triggers than humans have fingers and thumbs, so you can understand why controllers intimidate people who grew up in the Stone Age of gaming - roughly, the time between Pong and Pac-Man.

Back then, all you needed to rule the universe was a joystick (or a trackball) and a fire button. If today's menacing video game controllers make you long for a kinder, simpler time, put away your bell bottoms and leg warmers; the '70s and '80s are back in a big way.

A wave of nostalgia games has come along, bearing hits such as Asteroids, Centipede, even Pong. In the case of the Atari Flashback 2 (atari.com; \$29.99), the games are dressed in a console that looks like an old Atari 7800 video game system. There are no cartridges to plug in; all the games are stored inside. Plug the system into your television, grab the joystick, and play.

Jakk's Pacific TV Games is a growing line of palm-size consoles topped with joysticks. The Pac-Man game (tvgames.com; \$19.99) resembles a miniaturized arcade game, minus the screen. There are 21 TV Games. In addition to old-school games such as Breakout and Yar's Revenge, there are titles such as B.A.S.S. Angler Championship, Batman and Disney Princesses.

The NPD Group, a market researcher, recently found that these so-called plug-and-play video games usually are bought by households with young kids, but kids 6 to 12 and adults 35 and over are the primary users.

Not nostalgia but definitely cool: Some games don't have joysticks at all, using golf clubs, tennis rackets and other devices - boxing gloves, for instance, in Powerboxing for the Xavix system (xavix.com; \$59.99 for the gloves, \$80 for the XavixPort that reads the gloves' movements) - to get players off the couch and moving and swinging.

The coolest of these games by far is the EyeToy series for the PlayStation 2. The EyeToy is a tiny camera that captures your movements and puts your face - your whole body - into the game onscreen. Swing your arms and hit virtual targets, for instance, in the exercise game EyeToy Kinetic (us.playstation.com/eyetoy.aspx).

From Pong to EyeToy, there's no need to fear video games with complicated controls. (*Chicago Tribune* 10/12/05)

15 years of the World Wide Web – top 10 moments

At 15 years old, the World Wide Web has had impressive life.

In 1990, Tim Berners-Lee launched the World Web, a multimedia branch of the Internet. With Lee's "http protocol," computer jockeys the over began making the Net easier to use with and-click programs.

Browsers such as Mosaic and, later, Netscape



an
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Navigator would help popularise the Web, and let a billion Web pages bloom.

Anyone could access the network, and anyone could decide what went online. The Web became a powerful, liberating force that brought people closer together, and shaped new businesses.

Take Yahoo, which started as a quirky list favourite links that turned into the go-to site of the 90s. Or Hotmail, one of the first Web services to give away e-mail for free. And Ebay, which linked up buyers and sellers of nearly everything to become the world's biggest trading post. And of course Amazon, the online behemoth of books. These were the great companies of the so-called "new economy," fuelled by venture capitalist sugar daddies and excitable Nasdaq punters.

But with every dot-com blue chip, there were the dogs as well -- think of the likes of Pets.com and Globe.com. It all looked a bit too bubbly -- long on vision and way short on fundamentals. But today, the blue chips are still standing -- taller than ever.

Amazon is well in the black and has proved cyber-retailing is big business, online advertising is pulling in profits at Yahoo and eBay has become an economy in its own right, with millions of users set to trade goods worth more than \$40 billion this year. But it is Google that gets the most attention. It is the Goliath of the Web, with search, e-mail, e-commerce, instant messaging, classified ads, and even its own virtual planet with Google Earth -- all adding up to one mega-market cap.

The Web is a thrill ride yet again. It is bigger. It is faster. And the original spirit of community-building is still there.

Myspace -- a virtual hangout for wired teens -- has seen its membership rise to 40 million in the last year, prompting News Corp to pick up its parent for more than half a billion dollars. Skype is the new Hotmail -- linking millions of callers, turning the telecom market upside down, and attracting a \$2.6 billion buy-out from eBay. Yahoo, meanwhile, swooped in on Flickr -- the service that has transformed photography into a popular social pursuit.

The second boom is well underway. So watch this space. This may be a cyber-sequel built to last.

The top 10 list:

10. *WiFi hotspots* -- wireless Internet connectivity appears in airports, hotels and even McDonald's.
9. *Webcams and photo sharing* -- communication becomes visual, and inboxes fill with baby photos.
8. *Skype* -- telephony turns upside down with free long-distance calls, Ebay snaps it up in September 2005 for \$2.6 billion.
7. *Live 8 on AOL* -- five million people watch poverty awareness concerts online in July 2005, setting a new Net record.
6. *Napster goes offline* -- Regulators close the pioneering music swap site in July 2001 and file-sharing goes offshore.
5. *Lewinsky scandal* -- Matt Drudge breaks the Clinton/Lewinsky sex scandal in 1998. The blog is born.

4. *Tsunami and 9/11* -- two tragic events set the Web alight with opinion and amateur video.
3. *Boom and bust* -- trillions of dollars were made and lost as the dotcom bubble ballooned and burst between 1995 and 2001.
2. *Hotmail* -- went from having zero users in 1995 to 30 million subscribers 30 months later. It now has 215 million users.
1. *Google* -- redefined search. Invented a new advertising model and commands a vast business empire.

CNN 13/12/05

Museum of Computing news

Calculator exhibition

Preparations have been underway for the calculator exhibition to be held at the Museum in March 2006. It is hoped that Sir Clive Sinclair will attend the launch party plus some 400 visitors which will include local companies. Food and drink will be served at the end of the launch.

Publicity

The CNN and BBC have recently filmed at the Museum – the former as part of a series on collectors and the latter as part of the launch of the Xbox 360.

Computer Gaming Events

The Nintendo gaming days on Saturdays will be replaced by Atari gaming events starting in mid February 2006.

History Focus

The obscure Terak computer

The Terak was an early personal computer made by the Terak Corporation of Scottsdale, Arizona. It was sold from about 1979 until 1985.



One of the first models was the Terak 8510/a shown above. It was based on the popular PDP-11/03 processor, a 16-bit CPU. The Terak 8510 could have as much as 128K of RAM with the PDP-11/23 option. For storage, it has big eight-inch floppy drives in IBM 3740 format, holding roughly 256K, 512K or 1 mg each. Hard disks of five to forty mg were available. The Terak featured both RS-232 and 20 milliamp current loop serial connections, so you could connect to the printers and teletypes of the time. The keyboard included a numeric keypad and arrow keys arranged in a vertical column.

The Terak was advertised as a "Graphic Computer System." It featured a monochrome 320 x 240 square-dot display and relatively advanced video features such as a purely bitmapped display, allowing a customisable character set, the mixing text and graphics on the same screen, and raster operations like continuous smooth panning and scrolling. The system included a twelve-inch composite video monitor. It even had programmable sound and a two-inch speaker. The main system box was robust metal, weighing about forty pounds.

Available operating systems included the UCSD P-System and RT-11/85 version 4.0. Languages included Pascal, FORTRAN IV, APL and BASIC. Someone even ported an early version of Unix to the Terak.

In November 1981, an 8510/a with 56K of RAM and one floppy drive was \$8,935. And extra floppy drive was \$2,570. You could even upgrade to colour graphics at 640 x 480 by eight colours for \$10,550. A ten mg hard drive was \$7,985.

The Terak was popular for teaching Pascal to college kids. As such, all the oldsters who were in college then and used this computer have a great affection for it, meaning they can no longer remember how slow they were. Its flexibility in character sets led to its use as a text editor for Russian and Hebrew.

In his "An Unofficial History of Graphical User Interfaces", Stanford University Professor Anthony E. Siegman mentions the Terak in his "Histories of Individual Graphic User Interface Elements," saying the UCSD P-System used one of the first keyboard-based menus (where you selected functions by pressing the key corresponding to the first letter of the function, such as "F" for Filer and "L" for "directory." and under "Bitmapped displays", where Xerox PARC, PERQ and the Terak are mentioned as circa 1978 contenders. See http://www-ee.stanford.edu/~siegman/GUI_history.html

While compiling your UCSD Pascal program, the Terak adjusted the video display so that as the compile and link progressed, you could watch the compiler's memory usage bit-for-bit, watching the stack move toward the heap.

With its true bitmap graphics, Terak fans began to create their own custom bitmap character sets. These could be easily loaded into place, and used within all the screens of the P-System. Applications such as text editors and games could remap the character set, so the Terak saw early use as a word processor for Russian, Hebrew and Chinese.

The Terak lives on as an entry in 'termcap' files on Unix systems everywhere, because in its time its horsepower and serial port made it a good "smart terminal" that could access time-sharing computer systems of the time, uploading and downloading files to its local storage. It had its own custom terminal programs. The Terak port of Kermit, written mostly in UCSD

Pascal, was influential in the development and dissemination of that popular terminal program and protocol, becoming the basis of several other Pascal-based Kermits.

The Apple Macintosh's operating system was bootstrapped on an Apple Lisa computer. The Lisa's OS was written on the Lisa using a port of the UCSD Pascal compiler and P-System. The Lisa's port of the P-System was prepared on an Apple II, which had its own version of the P-System that was developed by Bill Atkinson, the Apple programmer who later wrote MacPaint. Atkinson ported the P-System to the Apple II while visiting UCSD, who helped Apple with the port using a Terak. Some people think he got the idea for MacPaint from the paint programs he saw in use on the graphics-intensive, square-pixel Terak.

Whatever happened to Terak Corporation? In November 1983, Terak Corporation went public on the NASDAQ at symbol "TCGS". In late 1985, it was purchased by CalComp, then a Sanders company, but now a part of Lockheed-Martin. Apparently the corporate assets were transferred to New Hampshire.

A potted history of Pac-Man

Pac-Man is the best-selling coin-operated game in history. Namco estimates that the original Pac-Man arcade title has been played more than ten *billion* times in its 20-year history. Namco's total Pac-Man revenues have reached \$100 million... one quarter at a time. Pac-Man has been licensed to more than 250 companies for over 400 products. Pac-Man was also the first video game to be as equally popular with women as it was with men.

In the game, the player guides the legendary Pac-Man around a single-screen maze eating dots. Pac-Man is constantly pursued in his task by four ghosts - Blinky (red), Inky (blue), Pinkie (pink) and Clyde (orange). Each ghost has its own unique personality and behavioural patterns and a single touch from any of the ghosts results in Pac-Man losing a life.

Four 'Power Pills' are situated in each corner of the rectangular mazes and eating one of these makes Pac-Man temporarily invincible; the four ghosts also change to dark blue in colour and can be eaten by Pac-Man. These 'Skinned' ghosts, now visible as a pair of eyes only, will then return to the pen in the middle of the maze, regenerate into their former selves, and return to the maze to continue their pursuit of Pac-Man.

Each maze contains 240 dots and 4 Power Pills, and all must be eaten to complete the level; whereupon the entire sequence begins again with an increased level of difficulty. Between every two, three, or four completed levels, animated intermissions, or 'cut scenes', are played. These intermissions are not seen after the 18th board (6th key) has been reached, however.

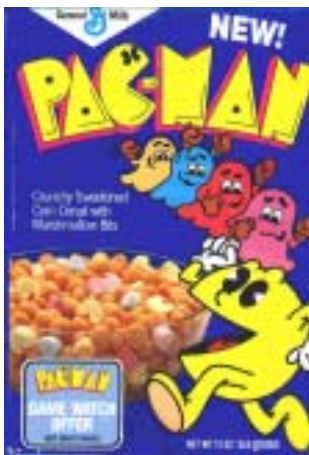
Occasionally, a bonus fruit or prize item will temporarily appear in the middle of the maze below the ghosts' pen. Pac-Man can eat these bonus items to receive extra points. Also, there is an escape tunnel on the left and right hand side of the maze that Pac-Man can use to escape any ghosts that are currently closing in on him. The ghosts can also use the tunnel, but take longer to pass through it than Pac-Man, making escape a little easier.

Pac-Man was first introduced to the arcades at the end of 1980. Developed by Namco, the original Japanese release was called "Puckman" but, due to the West's predilection with

changing words to vulgarities by scratching part of the word off (in this case, changing the word 'Puck' to something rather less socially acceptable by scratching off part of the letter 'P'), was changed to 'Pac-Man'. The name Pac-Man is derived from the Japanese slang word 'paku-paku', which in English means 'to eat'.

Pac-Man was, quite literally, conceived at lunchtime. The game's designer, the then twenty-six year old Toru Iwamoto, ordered himself a pizza for lunch. He took one slice, and, looking at the rest of the pizza, and Pac-Man was born. The game took 1.5 years to complete.

There was a lot of Pac-Man merchandise including a Pac-Man Drum Set, Pac-Man Ashtray, Chef Boyardee Pac-Pasta, Pac-Man Cereal and Pac-Man Hot Rod.



In the autumn of 1981, musicians Jerry Buckner and Gary Garcia spoofed Ted Nugent's song Cat Scratch Fever with a song of their own: Pac-Man Fever. Despite the bizarre lyrics, Pac-Man Fever climbed to number nine in the US.

Out of arcades, Pac-Man was enjoying worldwide fame. Hanna-Barbera made a Saturday-morning kids cartoon based on Mr. Chomp, simply entitled, 'The Pac-Man Show'. The cartoon was an instant success and ran for two seasons.

In 1982: Ms. Pac-Man was launched as an arcade game. It was moderately successful at luring fresh blood into dark arcades, but where it really succeeded was in its increased humanness. The lipstick, bow tie, and mole made Ms. Pac-Man resemble a human face much more than her husband did, and players flocked to her because of it. The off-yellow ghost Clyde was renamed Sue, giving Ms. Pac-Man an enemy of her own gender to fear and then destroy. Aside from a few minor musical changes, the game was essentially the same. Fruit was much harder to eat this time around, being constantly on the run. Many players prefer Ms. Pac-Man to the original, and it's much more commonly found in arcades or convenience stores.

Super Pac-Man was also launched in 1982 and represented a radical departure from the classic Pac-Man gameplay. Sure, the traditional "eat things while running for your life" style was still there, but it had been severely changed. Instead of eating bland yellow pellets, Pac-Man had to eat different types of food for his basic sustenance, like apples, bananas, and donuts. Power pellets still turned the tables on his attacking ghosts, but there was an additional power-up as well. The "super" pellets made Pac-Man triple his size and gain a tremendous boost of speed. While gigantic, Pac-Man could run right through the ghosts in the maze, but neither he nor the ghosts would take damage. The second major change was

the inclusion of doors that had to be unlocked by eating certain keys. When a key was consumed, more parts of the maze could be travelled through, though it was easy to forget to eat a key and be trapped against a door with a ghost blocking the only way out. When Pac-Man ingested a super pellet, he could eat the doors themselves, forever opening them and no longer having any need for the keys. It could be argued that the super pellets made Pac-Man too powerful, because he could race around the maze wherever he wanted, impervious to any and all damage. But the game was still fun to play, much more so than Pac-Man Plus.

Mr. and Mrs. Pac-Man Pinball was also released by Bally and over 10,000 of the machines were produced.

In 1983, Junior Pac-Man added a new level of depth to gameplay. While sticking to basics, power pellets turned all ghosts blue, there were no keys, no spinning cards and no super pellets. On the other hand, the bouncing bonus items (like a tricycle) would turn every regular pellet they came in touch with into a larger pellet that was worth 50 points instead of 10. The downside was that Jr. Pac-Man couldn't gobble these as quickly as he could the normal pellets, so they had to be avoided if ghosts were closing in. The bonus items would also destroy any power pellets they came in contact with, often leaving Pac-Man Junior high and dry. Junior Pac-Man even got a ghost of his own named Tim.

In July of 1999, Florida resident and die-hard Pac-Man fan Billy Mitchell achieved the first perfect score in Pac-Man (3,333,360) after playing for six hours straight. He beat all 256 screens eating every dot, fruit, and ghost (all four ghosts were eaten with each power pellet) - using only one Pac-Man!

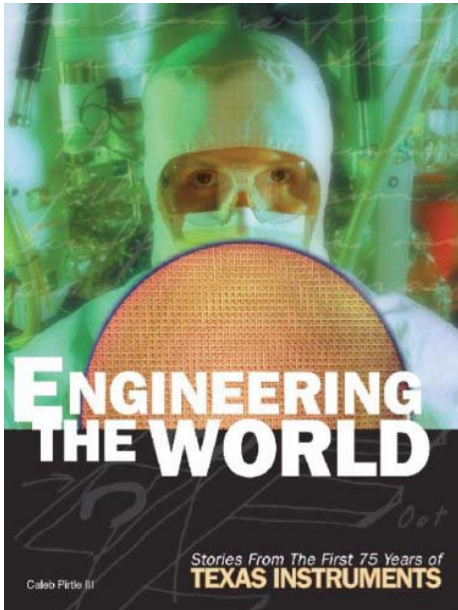
Chris Lindsey, director of the National Video Game and Coin-Op Museum in St. Louis stated,

'Everybody knows about Pac-Man, - and, I've noticed, almost everybody can play Pac-Man pretty well. Pac-Man makes just about the best use of the joystick one can imagine. It's so intuitive that it puts other games to shame in terms of how easy it is for a person to walk up, stick a quarter in the machine, and start doing something meaningful. At the time, Pac-Man introduced a completely unique style of game play and was also highly identifiable in terms of its music. With Pac-Man, everything was there. The video game industry needs another game that captures the public's heart like Pac-Man, and so far, no one has been able to come up with it.'

Book review

Engineering the World: Stories from the First 75 Years of Texas Instruments

This volume celebrates the can-do, risk-taking, creative pioneers of Texas Instruments from its inception in the 1930s as a tiny geophysical exploration company working out of the back of a truck in the oilfields of the Southwest, to its status in the world today as one of the world's leading electronics companies. From the determination of its founders - Eugene McDermott, Erik Jonsson, Cecil Green, and Pat Haggerty - to the genius of its inventors



such as Nobel prize-winner Jack Kilby, TI has transformed the world in seven and a half decades. In photographs and anecdotes, the book tells TI's history of innovation in products and technologies, including the development of the first commercial silicon transistors, the first integrated circuits, and the first electronic hand-held calculators. Today, this Fortune 500 company is at the forefront of digital signal processing and analogue technologies - the semiconductor engines of the Internet age. TIers are currently working on solutions for large global markets such as wireless and broadband access, and for a variety of emerging markets such as digital projection systems and digital audio. The seventy-five vignettes making up this history paint a picture of TI and its people, providing a window into a corporate culture that fosters the creativity and mental toughness to compare in the world semiconductor market. The stories, in addition, show TI's staunch sense of fiscal responsibility, civic mindedness, and high ethical standards in its business practices.

Hardcover 272 pages (August 2005); Publisher: Southern Methodist University Press

Industry interviews

Interview with Tom Griner, the creator of many Vic 20 games.

Tom Griner was a whiz-kid who came out of nowhere to write a burst of a dozen Vic 20 games. For a while it was impossible to open a game magazine and not see a review of something he had written. He later moved to the Commodore 64, updating one of his Vic 20 games and doing high profile ports of "Robotron" and "Stargate" for Atarisoft. He disappeared from the game world not much later.

How did you get started in game programming?

My first exposure to computer games was playing with an Atari 2600. Games like "Pong," "Adventure" and all the other classics. When coin-op arcades started to appear, I became a video game junkie. I would dig through coin-return slots looking for lost quarters so that I could get my next video game fix. As a dedicated fan of Williams arcade games, I would make the rounds to all the local establishments to make sure my initials were on all the top scores of the "Defender," and later "Stargate" and "Robotron," machines. There were some other faves like "Asteroids" and "Battlezone", but I never really got into "Centipede," "Pac-Man," "Donkey Kong" or the like. When I started to learn about programming, from dorking around with computers in high school, I decided to see if I could make my own versions of the commercial games that I loved to play. At first it was just for my own fun, but others noticed what I was doing, and it sort of evolved into a career.

What's the story behind your first Vic game?

Across the street from my high school was a small store called "Mr. Calculator". It was a calculator store owned by a Japanese company called "Systems Formulate Corp." They got a Vic 1001--a Japanese precursor to the Vic 20--as a demo machine to put in the glass case at the front of the store. It came with a couple simple games written in BASIC.

Since I was hanging out in the store to play with their Commodore PET, the store owner asked if I could convert their BASIC game demos from Japanese to English. I looked at the games, figured out what they did and said that I thought I could rewrite them better in machine code rather than try to fix them. After doing a few, I started writing unique games. The first couple were simple "Asteroids" and "Defender" clones called "Meteors" and "Guardian." They didn't really do much, but they were some of the first machine code games ever done for the Vic 20.

What other interests did you have at the time besides programming?

Not many! Well lets see: arcade game playing of course, skateboarding (not very seriously though), TV watching, and network "hacking"--for instance, playing "Zork" via the Arpanet from some public terminals at Stanford. I picked up a lot more hobbies, like flying and SCUBA diving, later in life after getting past my video game addict phase.

How did you hook up with Creative Software?

The president of Creative Software walked into the Mr. Calculator store and announced that he wanted to meet the programmer who was making machine code games for the Vic 20. He was a bit startled to find a kid sitting there programming, but he offered me a royalty-based marketing arrangement.

The Vic 20's technical limitations seem severe today. Did they give you trouble at the time?

The limitations all seemed like a fun challenge. If it were easy I might not have felt compelled to go to the effort. Of course, I cursed the machine now and then, and often wished for certain things to be different, but in the end it was just a puzzle that needed to be solved.

How did you develop your game ideas?

Mostly from daydreaming about arcade games. At the time I was playing so much that when I closed my eyes I could envision scenes of video game characters scrolling around in space. The ideas came very easily. At the time I had far more ideas than time to implement them. Once one game was done, I would just start right in on something else that was floating around in my head. Admittedly, much of my work was derivative of other ideas, so it is hard to say what I would have come up with if I hadn't been exposed to all the other games that had come before my work.

On average, how long did it take you to write a Vic game and how well did it sell?

From start to finish, the average game took about one month. Keep in mind that this was in my spare time while I was going to school. I was writing other software, which was never sold, during the same period--1982-1984--so I didn't quite produce a game a month during that time. I did not keep very close track of sales, but I know that they had lots of my games on the shelves at some big retail stores like Sears and K-Mart. As a very rough guess, I would say that all of my games combined sold somewhere around a million units. There were some side sales too, like reprogrammable cartridges and compilations which included my stuff along with others games. Also many of my games were pirated so some people got to play them but never actually bought them.

When did you move from the Vic 20 to the C64?

I remember considering work on C64 material when I was doing my last couple Vic 20 games. As I recall, there was a little concern that the higher price of the C64 would make it have less overall units sold, so some people were advising to not switch right away, unless the C64 proved to be a big seller. When I started Vic 20 programming, I had no idea or little care how many Vic 20s would ever

be sold, but by the time the C64 came out, people were starting to give me advice on what I should do.

Why was "Astroblitz" revived for the C64 as "Astroblitz Deluxe"?

All my idea. I just wanted to do some new tricks with the concept. People at Creative weren't all that thrilled with the idea, so if you like "Astroblitz Deluxe" you can thank me, otherwise you can blame me. I think sales were not very great on "Astroblitz Deluxe" so I guess it wasn't a big success. The original "Astroblitz" game got a number of very positive write-ups in Vic 20 magazines, so I consider it to be a success.

The C64 version of "Robotron" seemed like an impossible port. How did you manage it?

I think I once saw an alternate C64 "Robotron" that was done by a different programmer--Atarisoft may have hedged their bets--so you need to be careful to make sure you are talking about my version. You can tell mine by the "reverse spinning white highlights" on the spinning circles in the title page. And my "Robotron" was hacked by some pirates who removed my name and initials and put in some hacking club "greetz" instead, so it may be hard to identify.

Since "Robotron" was a favourite game of mine, I pretty much begged to get the assignment. I really wanted to have a home playable version of that game so I committed to the challenge. Doing the graphics and movement was pretty instinctive for me. Actually, the hardest part of programming all of the games I did was doing some good sounds. I struggled to make the SID and other sound chips do what I wanted. Many of my games were fully playable with no sound, and I went back and added on sound as an afterthought.

Which of your games was the biggest success? Which were you the most satisfied with?

Astroblitz got a lot of good press, so I was proud of that. I think sales of "Shamus" and "Choplifter" were very good, but I am less proud of those since they were basically ports of games that other people invented. Since, I had never played the original versions before being asked to do the Vic 20 versions, those games were not near and dear to my heart. Doing those two games was more like work rather than fun.

I am very proud of my "Robotron" and "Stargate" ports for the C64 since I highly respected the original games, and a lot of people told me that I did an exceptional job in capturing many small details of the originals, even though I wrote them from scratch. My memory of the original games was so vivid from playing so much that I did nearly all of the gameplay and graphic design from memory. When nearly complete, I double-checked my version against the arcade games and made a few minor adjustments.

I guess I always wished that I had more computer to work with. Every game was a compromise in many ways. What I really wanted to be doing was fully-immersive 3-D multiplayer virtual reality stuff, but I just wasn't in the right time or place to do that.

Did you write any games after 1985?

I was involved in some games for The Learning Company--"Reader Rabbit" and "Robot Odyssey"--but I just did some graphics code for a consulting company that built the finished product.

I became corporate and started doing business applications. Things like "molecular biology gene sequence database pattern match utilities" and "videoconferencing equipment control software."

Lately I have been doing Web security work and "business intelligence filtering engines." Not as much fun as game programming, but at least it pays the mortgage every month.

Have you played any of your games using the currently popular emulators? What do you think of them today?

Yes, I have played most of my old games on the emulators. I think the emulators are way cool, and I love being able to rekindle the memories when I fire up those old relics on my laptop computer. Now that I have forgotten many of the details of those old games, it is in some ways more fun than ever. I get tripped up by the secret things that I once knew from writing the game.

"Maze" and "Shamus" are the ones I am messing with lately. I guess the "bigger than the screen" playing field in "Maze" still seems fun to me. The one-screen games like "Predator," "Terraguard," and "Videomania" run out of steam pretty quickly. "Stargate" and "Robotron" are just too control intensive to play well without the original joysticks or exact keyboard layout.

Why did you get out of the game business?

A few reasons: I grew up--well, sort of, the home game market hit a slump for a while, I needed a change, there is a lot more competition these days, and game design changed. Mindless shoot-em-ups are not so big anymore. People want "Kung-Fu Karate battle of death" games, which don't interest me, or "watch a movie" adventure games, which can be fun but don't excite me too much.

Do you ever feel the urge to write another game?

One reason I used to write games, is that I wanted to have some fun things to play. I wasn't happy with what I could buy, so I thought I might be able to do better myself. Now there is a lot of good stuff available, so I have less reason to want to make my own. Yes, I do miss creating game characters and bringing them to life and I miss the tightly coded, optimised graphic routines. There still is a chance I might do some more; I do think about it now and then.

If you did write a game today, would you stick to the 2-D format you used in the past or would you move to 3-D?

My favourite games to play these days are "Super Mario World" on my N-64 (got all 120 stars!), "Shadows of the Empire," "Doom," "Quake," "Duke Nukem 3-D," etc. All of these are very lively 3-D games, so yes, I would be inclined to work in 3-D. I like immersive experiences; I'm an IMAX 3-D movie nut.

Multiplayer games also interest me. If I didn't have bills to pay, I would probably try to write some killer 3-D multiplayer Internet-ready game, but making money off of a game is unpredictable. Trying to take on Id, Lucasarts, Nintendo, and so on is a big challenge. Joining them as a staff programmer probably wouldn't be that lucrative for me.

James Hague
June 2002

Nostalgia

Telstar/Colecovision memories

"From unknown origins, we got a Telstar system. I was extremely young at the time (maybe 5), and I don't remember much about it other than it was brown, had a gun attachment, some paddles, and maybe even a steering wheel. Anyway as it had only a few games my older brother and I grew bored of it. To this day I don't know what became of that unit.

Jump ahead a few years...I had my allowance revoked until I cleaned my room, and since that wasn't about to happen anytime soon I rarely got to play coin-ops. I really sucked at just about every arcade game I played except for maybe Galaga and Astro Blaster. I still remember playing Astro Blaster in an arcade on vacation one year for what seemed like an hour.

Lots of people had Atari 2600s, but I don't think I ever liked the graphics enough to want one. When we saw the Colecovision though, it was as if everything changed. We needed one. We had begged, pleaded, and promised our souls to the room-cleaning fairies if we could get one for Christmas.

We came down the steps on Christmas morning and tore through our presents. No Colecovision. It was afterwards that my Mom pointed us over towards the TV. A big box and a smaller box with my brother's and my name on them. Sure enough, they came through. My Dad hooked it up and we played Donkey Kong all morning. Another hot game at the time was Zaxxon, and my Mom put herself on a waiting list for it, and we got that game too. I was better at the Colecovision than my older brother and he eventually stopped playing it. I think the third game we got was Cosmic Avenger, and the fourth was Venture which was bought with collected change that my Dad cashed in for us at the bank. The Colecovision migrated to the basement from the kitchen and the basement became my gaming domain. We got the occasional game at Kiddie City when they were cheap enough. I think I wound up with about 35 when the dust settled. The Adam computer got clearance tagged a few years later and I talked my Mom into getting it one Sunday.

I hooked it up and also managed to swing a data pack with Choplifter and another game on it. I really had little use for a computer at the time, and I didn't know that the whole system was going under. I was so curious and remember calling Colecovision Tech Support to ask how to turn the screen different colours in Basic. I think the extent of the computer's use other than the few Adam games we had was printing out my high scores and phone numbers. Eventually the printer string broke and it's use was strictly for gaming. I was also interested in the idea of the cassette. I cut holes in audio tape cases to match the Data pack holes thinking I could use audios for blank data packs. Eventually I got bored of the games I had and they stopped production of the system. It sat and it sat, but I had so many fond memories of it that I couldn't bear to put it away.

My brother eventually put it away when rearranging the basement. A few years ago I dug it out, but the controllers were shot. A few months later, one of my brother's friends fell ill and picked up a Colecovision at a flea market. My brother "loaned" him all our games. The guy eventually died and we didn't have the heart to call up his family and reclaim our games.

Last week I was playing a clone of Ms Pac Man on my computer at work, and wondered if someone, somewhere had made a Donkey Kong clone. After about 10 minutes of surfing I stared at my screen. The AdamEm Colecovision emulator stared back. We looked longingly into each other's eyes.

After a brief downloading interlude we tangoed. Armed with sixty-something games I dove into my childhood in the basement once again. I was once more sprawled out on the black and white chequered couch (which was the most comfortable couch ever made, by the way) playing the heck out of those games. So here I sit, telling my story to whomever has kept reading this far and think of how remarkable it is that so many memories have been rekindled 14 years later, and wonder if those programmers knew what kind of joy they were creating in a little kid's mind so long ago. Perhaps it's time I visited a few flea markets and yard sales of my own and reclaimed a few more memories."

Tim Stradling

International Museum Profile

TDK History Museum

TDK Corporation announced completion of the TDK History Museum in Nikaho City, Akita Prefecture, Japan, and its opening to the general public on December 8, 2005.



Centering on the main theme of "what has TDK created?" the TDK History Museum tells the story of TDK from the perspective of its manufacturing history. Through many exhibits, panels, and videos presented in an easy-to-understand manner, the museum introduces the magnetic substance ferrite, which was the starting point of TDK, and the many products that grew out of that beginning, such as ceramics, application components, recording media, and magnetic heads, as well as the development of

technology transfer by TDK, which has walked hand in hand with the development of the electronics industry in Japan.

The TDK History Museum has been constructed in the precincts of TDK's Hirasawa Plant in Nikaho City, Akita Prefecture, which has been a manufacturing base since TDK's founding, in commemoration of the 70th anniversary of the company. The facility has an exterior designed on the theme of red iron oxide, which is the basic material of ferrite, and ceramic materials and is surrounded by the abundant nature of Akita Prefecture. It will be operated as a facility open to not only TDK customers but also local residents and the general public. Admission is free.

Market place

We need your help!

The Museum will be interested in receiving donations of old technology items including computers, electronic games, books, publications, computer peripherals, software and other related ephemera. We cannot promise we will be able to accommodate everything but please ask if you are in doubt.

We are particularly keen to receive donations of A2 and A3 laminators and printers.