Case History: Where in the World is Carmen Sandiego?
“A Mystery Exploration Game”

Brotherhood at Brøderbund

In the summer of 1964, Doug Carlston attended a summer engineering program at Northwestern University: his first computer programming experience. He later worked at Harvard’s Aiken Computation laboratory, and graduated magna cum laude from Harvard in 1970 with a degree in social relations. In 1975 Carlston received his JD from Harvard law school and established his own law practice in Maine. But he continued to develop games for his Radio Shack computer – the TRS-80 Model 1 – during his college and attorney years. Doug’s programming efforts soon eclipsed his legal practice, and in 1979 he left Maine for Eugene, Oregon to join his younger brother Gary.

Doug and Gary Carlston co-founded Brøderbund (pronounced “Brew-der-bund”) Software Inc. in 1980; relatives donated the entirety of their $7,000 in working capital. Indeed, the company’s name reflects its family-based origins – “Brøder” is a blend of the Swedish and Danish words for brother, and “bund” is German for alliance. Initially, the “family alliance” sold Doug’s software – Galactic Empire and Galactic Trader – directly to software retailers, but in the summer of 1980 Brøderbund secured an agreement with Japanese software house StarCraft that facilitated both the development and distribution of its arcade-style product line. In 1983 Brøderbund moved from Eugene, Oregon to Novato, California; the company boasted over 40 employees, and its software for the Apple II, Commodore Vic 20, Commodore 64, and Atari 800 yielded millions of dollars in annual revenue.

Brøderbund published The PrintShop, their first best seller, in 1984. Written by David Balsam and Marty Kahn of Pixellite Software, The PrintShop was one of the first desktop graphics programs designed for the personal computer. It provided pre-configured layouts and type configurations that enabled even the most graphically inept to create artistic labels, signs, banners, stationery, greeting cards and more. Doug Carlston affirms, “When David Balsam and Marty Kahn first showed us an early version of a program later to be called The PrintShop, we were struck with the extraordinary creativity it permitted even the most artistically hopeless of us.” (The PrintShop Saga, par. 4)

---

1 Sister Cathy joined the company in 1981 as vice president of educational planning, and their mother worked in the submissions department. The sibling trio is represented by the company logo, three crowns, which is also the Swedish national emblem.
2 As of June 1999 The PrintShop brand products had sold over 15 million units.
In 1985, Brøderbund released Where in the World is Carmen Sandiego? (hereafter abbreviated WWCS?) for the Apple II, and IBM/Tandy compatibles. Players assumed the role of a rookie investigator for the Acme Detective Agency and tried to apprehend the Eiffel-tower-stealing, mysterious globetrotting spy named Carmen Sandiego or one of her cohorts. To arrest the thief, the gamer tracked the villain across continents and solved increasingly complex clues that required the help of an atlas or encyclopedia. Teachers and students (eventually) loved it. By 1998, the Carmen Sandiego product line had sold over 6 million units, – 400,000 copies to elementary schools – earned over 70 awards, spawned three popular TV shows, a line of books and puzzles, a live-action movie, and numerous software sequels. WWCS? was the first smash hit in the soon-to-be-coined “edutainment” subclass of entertainment software.

In response to investors’ “cashing out,” and skyrocketing production costs, Brøderbund went public in November 1991. In the same year they published KidPix – a PrintShop for kids – and further promoted their Living Books series. In 1994 Brøderbund published Myst, possibly the most popular computer game ever with over 4 million copies sold since its debut. The CD-ROM game contained over 2,500 original 3D-rendered graphics, over one hour of video, and an original soundtrack that together created a nonlinear, surrealistic world. That Brøderbund insisted on sophisticated graphics and in-house talent to shape the material in final form gave its software titles a unique graphic and content identity.

The mid and late 1990s beheld several, albeit unsuccessful, mergers between Brøderbund and other software companies. Until Electronic Arts Inc.’s share price dropped dramatically in 1994, the company sought to acquire Brøderbund in a $400 million stock swap. In 1995 Brøderbund attempted a friendly takeover of competitor The Learning Company (TLC), but SoftKey International Inc. topped Brøderbund’s $440 million bid. SoftKey International Inc. later took TLC’s name. By 1998 Myst sales had leveled off and its 1997 sequel, Riven, had not matched its predecessor’s success. Consolidation in the industry – TLC had accrued more than 500 software titles and 14 companies including Mindscape Inc., and Creative Wonders L.L.C. – pared margins in the fiercely competitive education and personal-productivity categories. Brøderbund confirmed reports of possible acquisition and enlisted a New York investment-banking firm, Donaldson, Lufkin & Jenrette, to explore its options. TLC bought Brøderbund for $416 million in June 1998. Later that year, toy maker Mattel announced that it would acquire TLC.

Mattel completed the $3.6 billion acquisition of TLC in May 1999; TLC remained as a brand and became a division of Mattel Interactive. But the high returns of TLC products from distributors and a $50 million write-off of bad debts caused $206 million in losses in 1999 and the resignation of Mattel’s chairman and CEO. Consequently, Mattel put TLC up for sale in April

---

3 Myst was developed by Red Orb Entertainment, Brøderbund’s entertainment division. Suitably, Red Orb is Broder spelled backwards. 4 Brøderbund had secured the help of software house EA in 1992 in order to publish Where in Time Is Carmen Sandiego? for the Commodore 64 and the Sega Genesis.
On September 29, 2000, Gores Technology Group, a buyout firm that acquires and manages technology businesses, bought TLC/Mattel Interactive; this included the Learning, Productivity, and Entertainment Divisions. TLC maintained its name and its Learning Division continued to produce the Carmen Sandiego series. TLC's Entertainment Division is now called GAME Studios™, and serves both as third party publisher and internal developer of PC and console-based content.

When Lauren met Portwood...

Lauren Elliott entered Brøderbund headquarters in 1983, chatted with Gary Carlston, and was hired on the spot. He was employee number twenty-three at Brøderbund, and the company’s first full-time game designer. In the past programmers designed the games themselves, but “they were running out of ideas.” (Elliott, 3/2/01) Resident code monkeys hesitated in trusting the unproven game designer, but Elliott’s architectural programming experience and capacity for new ideas won them over. Indeed, over the next nine years Elliott developed over eighteen original games for Brøderbund: five Carmen games, Shufflepuck Café, Science Toolkit, etc. He soon joined forces with Raymond Eugene – “Gene” – Portwood.

Gene Portwood had skipped college and joined Walt Disney’s animation army of more than 200 in 1950 at the age of 17. He worked on films including The Lady of the Tramp, Sleeping Beauty, and Peter Pan. After Disney, Portwood reinvented himself as a successful game designer; his contributions to Choplifter in 1982 and Lode Runner in 1983, both published by Brøderbund for the Apple II and Commodore 64, demonstrated his aptitude for artistic brilliance. Doug Carlston recalls Portwood’s talent for creativity: “Other people could talk it. [Gene] could see it.” Portwood was originally hired to manage Brøderbund’s programmers, “but his wit and design sense got [he and Elliott] both working full time designing games.” (Elliott, 3/2/01)

Portwood and Elliott shared a passion for wristwatches, Monty Python movies, Captain America comic books, and of course, Carmen. The two enjoyed “good books, good characters, and pushing the limits of the machine.” (Elliott, 3/2/01) In retrospect, the pairing was inevitable. Elliott and Portwood would enter the office at 8:30 a.m., eat lunch at noon, and drink a Diet Coke at 3 p.m. They co-inhabited a generous toy-and-gadget-filled office during the day, and suffered late nights together in Brøderbund’s auxiliary San Rafael office, an old liquor warehouse. Off hours, they and their wives were close friends. Elliott notes, “We [didn’t] see ourselves as joined at the hip, but the company [did].” (Lazzareschi, par. 23)

The design duo operated from Brøderbund’s “rubber room,” a place to bounce ideas around, and the creative nucleus of the company. The ex-Disney animator and former architect were responsible for coming up with new designs, and “any creative stuff that needed help,” including packaging and marketing. (Elliott, 3/16/01) The rubber room, like their office, overflowed with toys and often harbored employees who sought respite from the daily grind. It boasted a
couch too, and induced many a nap over the years. Interestingly, the rubber room was habitually
the subject of official company tours. The Carlstons notified Elliott and Portwood of visitors, and
they “performed” – drew pictures, talked about games – for the passersby. The two didn’t attend
many meetings, however: Portwood hated them. (Elliott, 3/16/01) Amidst the corporate circus,
their project strategy was simple, and effective: if they could discuss a particular concept longer
than a week, then they knew they had something to write home about.

In 1992 the two men left Brøderbund and founded Elliott Portwood studios. They
developed games on a contract basis for Maxis, EA, and Time Warner, to name a few. Portwood
retired in 1996, and with it Elliott Portwood studios. Elliott then founded Dream Zero, which he
sold to The Big Network. In 1998 he founded SodaMail, L.L.C., a source for e-mail newsletters,
and remains the company’s president.

From English Crowns to Geographical Capers

The original idea for a geography game stemmed from Doug Carlston’s childhood: “I
shared a bedroom with my two brothers, and we used to play geography games to get to sleep.”
(CARMEN!, par. 2) That boyhood pasttime made its way to a product idea list in 1983, and from
there Gary Carlston, Lauren Elliott, Gene Portwood, and Dane Bingham played key roles in
bringing the game to fruition. The project’s preliminary title was Six Crowns of Henry VIII and its
object was to find crowns hidden throughout the English countryside. But Elliott and Portwood,
co-designers of WWCS? decided, “there were enough male bad guys,” and besides, “girls [could]
be just as bad.” (Elliott, 3/2/01)

The name “Carmen Sandiego” came out of a meeting in the “rubber room” that included
Lauren Elliott, Gene Portwood, Ed Bernstein, then head of the design department, and lead
programmer Dane Bingham. Both Portwood and Bingham allegedly conjured up Carmen’s
namesake, but Doug Carlston explains, “There’s some controversy surrounding [the creation of
Carmen]. Success has many authors, and everyone remembers playing a part.” Lauren Elliott
adds, “I believe it was Gene’s idea, but when you toss ideas around for an hour, who knows
anymore?” (Elliott, 3/2/01) (Later, developers took some heat from a group that maintained that
attaching a Hispanic name to a villain encouraged an ethnic association with crime. In response
Gary Carlston, head of product development, released more of Carmen Sandiego’s “biography”
to critics in the form of a letter. There, Carlston informed would-be censors that Sandiego was
Carmen’s married name. Her maiden name was Sondberg, and she wasn’t Hispanic, but
Swedish.) After cementing the general theme of the program, Lauren Elliott handled the
geographical, historical, and other factual components of the game. Portwood worked on the
graphics, and Dane Bingham wrote the code. But “A lot of what we did just happened,” Elliott says.
“We didn’t think much about it.” (Lazzareschi, par. 20)
Prior to Brøderbund’s Carmen project, the majority of financially viable video games boasted twitch-like, arcade-style game-play. That Brøderbund had flourished money-wise by simulating arcade titles for the personal computer demonstrated this fact. For this reason, some employees suggested that WWCS? combine arcade-like challenges with educational puzzles; insofar as twitch games accounted for $2 billion in video game sales in 1984, the inertia of fiscal gain conflicted with untested creativity. But Elliott and Portwood maintained that they “didn’t want any arcade games in [Carmen Sandiego].” (Elliott, 3/2/01) Instead, WWCS? made success a function of knowledge; it basically guaranteed that the player could “win” if they stuck with it. “The point was to make [Carmen] a smart crook.” (Elliott, 3/2/01) Thus, the player exercised their mental muscles in order to apprehend the villain; and unlike its shoot ‘em up predecessors, WWCS? made honest attempts at character development.

A Day in the Life of a Gumshoe Detective

The Chase is on...

Monday, 5 a.m. A ringing sound jars you awake. You grope for the phone and drop the receiver on the floor. Out of the darkness comes the voice of your boss. "Wake up, kid. Got an Assignment for you." You stumble out of bed, turn on the light, and grab your brand new detective’s notebook.

“Ready, chief,” you answer, your voice thick with sleep.

“Just got a call from Interpol. Looks like Carmen's gang's pulled another caper.”

“Any leads?”

“Not with this bunch. They're too slick. Can't give you any more details on the phone. Better get down to the office double quick. It's going to be a rough one.”

“Right, chief.”

As your trembling hand replaces the phone on its cradle, you wonder why you ever got into this line of work. Before this morning, Carmen Sandiego and her Villains’ International League of Evil (V.I.L.E.) were just sensational headlines in the newspaper. For more than five years, Carmen and her gang of felons had managed to stockpile the world's most valuable treasures, while outwitting every so-called "crime expert" from New York to Sydney. Now they've struck again. And you, the newest employee of the Acme Detective Agency, have been given the near-impossible assignment of tracking them down.

Your Assignment

---

5 Adapted from the original Where in the World is Carmen Sandiego? user’s manual
The thief is hiding in one of 30 cities. Your job is to track him or her down, using clues you unearth along the way. Clues can point to the city itself or the country in which the city is located. There are 10 possible suspects, any one of whom could be the thief. (Carmen Sandiego is the most elusive of the lot.) As a new detective, you begin at the Rookie level. As your investigative skills improve, you climb your way up through the ranks – five levels in all – until you reach Ace Detective.

**Beginning the Search**

Your starting point is the scene of the crime – the city where the thief swiped the treasure. The main screen always gives your present location, the day and the time. As you arrive in each new city, be sure to read the descriptions that appear on the screen. They contain information that could be useful in solving future cases. The pictures themselves – notable landmarks or typical scenes from that country – may also come in handy. The four options on the Main Menu help you track down the suspect. The options are:

- **See Connections**: lists all possible destinations reached by connecting flights from your present location. Check these first to see where the thief might have gone.
- **Depart by Plane**: lets you depart for the city of your choice once you’re ready to take off after the suspect. A schematic map on the bottom left-hand corner of the screen shows your travel options.
- **Investigate**: lets you unearth clues in each city so you can track the suspect to the next destination. Every city has three locations, which change case by case. Visit as many or as few clue locations as you wish, but remember that the more investigating you do, the more valuable time you lose. Use the World Almanac to help unravel the clues you dig up.
- **Visit Interpol**: helps you narrow down your list of suspects. Using Interpol's Crime Computer, you'll pin down the identity of the thief. As you pick up clues about the suspect, enter information about these characteristics into the Crime Computer. When you've narrowed down the list to one suspect, the Crime Computer will issue you an arrest warrant.

**An Apple a Day… Keeps Bankruptcy Away**

Sales were marginal 18 months after WWCS?\'s 1985 debut. Then, to the astonishment of Carlston and the other developers, teachers and classrooms “discovered” the value of the program. The capers of the shadowy international spy-gone-foul had captured the imagination of school kids otherwise turned off by traditional geography and history lessons. “We were shocked,” Doug Carlston exclaims. “We hadn’t represented [Carmen] as an educational program, but as more of a recreational game.” (CARMEN!, par. 4) Here, Apple Computer’s causal role cannot be overestimated.

In January 1986 Apple initiated a program whereby US schools could trade in old Apple, Commodore, IBM, or Tandy personal computers for substantial credit towards the purchase of new Apple computers. In April of the same year they commenced a six-month program for educators to purchase computers for personal use and receive rebates. In 1987,
contemporaneous with Carmen’s rising success, Apple introduced the Apple IIe for $829. Finally, in March 1987, Apple launched the Apple Unified School System and Apple’s Education Purchase Program (EPP) as part of their ongoing strategy to teach students and educators to use Apple-branded computers. Their efforts established a nationwide computer-in-the-classroom infrastructure that granted Brøderbund a place to inadvertently market its software. Lauren Elliott recalls, “[Carmen’s] success was gradual at first – its success in the schools was the first real marketing boost (and it was free).” (Elliott, 3/2/01) Cathy Carlston and Janese Swanson, dedicated members of Brøderbund’s Educational Task Force, took immediate advantage of Carmen’s unexpected success.

They called them “Carmen Days.” Teachers and students all over the United States dressed as Carmen Sandiego, any one of her V.I.L.E. henchmen, or budding Acme detectives and played geography games. Accordingly, Brøderbund manufactured Carmen t-shirts, watches, folders, and stickers that served as Carmen Day prizes. Cathy Carlston’s Educational Task Force then implemented a system where students could call the Acme Detective Agency (Brøderbund HQs) and talk to the Chief (Gene Portwood or Lauren Elliott). “[Carmen Days] were a kick… and successful,” reminisces Elliott (Elliott, 3/16/01) Due to overwhelming demand, Brøderbund published School Edition and Lab Pack versions for the original Carmen, and subsequent sequels. By 1989, WWCS? had sold over 1 million units. It was a certified franchise.

In and Out

Brøderbund and its creative triumvirate – Elliott, Portwood, and Bigham – designed, programmed, and produced WWCS? in-house. That is, no non-Brøderbund persons helped them do it. But in 1986 Brøderbund sought the programming and animation expertise of Sculptured Software, a subsidiary of Acclaim in Salt Lake City, Utah. There, contractors Mike Engberg and Bevan Wolfenstein divided the coding and graphics tasks.

During the day Wolfenstein worked at Wicat Systems, an educational software company in Lindon, Utah, in the K-12 education division. He managed nearly twenty artists and animators, and did most of his work in monochrome – green on green – at 320X200 resolution. In the evenings Wolfenstein contracted for Sculptured Software, and did most of the illustration and animation work for the Amiga versions of WWCS? and Where in the USA is Carmen Sandiego? Commodore’s Amiga, unlike the IBM/Tandy and Apple computers, displayed up to 64 colors, and so Wolfenstein had to recreate the majority of the Carmen graphics. Leila Bronstein, Brøderbund’s Art Director, oversaw (from afar) the animator’s efforts.

---

6 To date, at least twenty different states have asked Brøderbund to develop state-level Carmens. The company once tested the waters with Where in North Dakota Is Carmen Sandiego?, produced by Janese Swanson. It sold approximately 5,000 copies, and was very popular – in North Dakota.

7 Brøderbund outsourced large portions of Carmen work to companies like Sculptured Software and Electronic Arts Inc. for all of the game’s sequels.
“I had quite a bit of license with some of the characters,” recalls Wolfenstein. In particular, he created his own version of the “icons, and bad-guy pictures.” (Wolfenstein, 2/28/01) He fashioned destination shots largely from travel brochures; Brøderbund sent him a box of pictures with sticky notes isolating the areas he was to recreate on the computer. Interestingly, Brøderbund insisted that his work be hand drawn – no scanners – so as to maintain the quality, custom feel of the software. In retrospect the “[Carmen work was] almost a hobby more than an income,” says Wolfenstein. “I was paid $10 [by Brøderbund] for an animation sequence, so I had to work very fast. I figured I averaged about $2.00 per hour.” (Wolfenstein, 2/28/01) Currently, Bevan is co-owner of Candesa Interactive, a Utah-based company that creates websites and multimedia content for high tech companies and ski resorts.

Brøderbund also solicited the help of individual specialists. Carolyn Miller, interactive writer for two editions of Where in the USA is Carmen Sandiego?, describes her experiences: “I got to develop four new characters and write all the dialogue for them – they were witness characters and included an aging cowboy, a toll taker on a highway in New Jersey, a guy who owned a fast food joint, and a young musician wannabe.” (Miller, 3/13/01) Miller also wrote lines for the Chief and Wanda, – the Chief’s assistant – hundreds of geography clues, and “facts about each state that [came] up on the screen when you arrived at a new state.” (Miller, 3/13/01) In addition to Brøderbund-supplied books, Miller consulted her personal collection of travel books to formulate appropriate investigative and destination information. “It seems like I had to write a million clues about rivers named Ox Bow,” remarks Miller teasingly.

Like most contractors, Miller contacted Brøderbund entirely by phone or fax. But the decentralization and mottled distribution of work did not decrease the quality or popularity of the Carmen Sandiego series. In 1990 Brøderbund and DIC Enterprises of Burbank, California, agreed to develop a cartoon show based on the adventures of Carmen Sandiego. By 1992 the Carmen line had sold 3 million copies, and constituted 25% of Brøderbund’s revenue. In the first half of its 1993 fiscal year, Brøderbund’s sales climbed 37% to $56.9 million, and its net income rose 40% to $8.6 million. (Edu-tainment, par. 20)

“B” Is For Brøderbund

Sales of home education software jumped to $281 million for the first nine months of 1994. Indeed, about 27% of U.S. homes owned personal computers, and software had become a mass-market item. “You [could] link a lot of this growth to CD-ROM technology,” says Warren Buckleitner, editor of Children's Software Revue. (Abrahms, par. 5) For Carmen Sandiego, the CD-ROM meant more of everything: sound, images, characters, clues, and quality. For Tim Larkin, current Audio Director at Cyan Inc., it meant a job: software companies desperately needed digital sound designers.

---

8 CD-ROM, or compact disc read-only memory, is a type of storage media that contains four to five hundred times the information of a traditional floppy disk.
A music performance major at Cal State Hayward, Larkin traveled with a top forty band for several years, then returned to the bay area doing session work and live gigs. He then started a music production company with friend Greg Rahn that composed and produced music for television, commercials, and film. Games on CD-ROM were becoming more commonplace, so the two decided to hit up software companies for music. He recalls, “[Greg and I] opened up the phone book and the first company under B was Brøderbund. We called them up, and within several months we were both hired on staff there.” (Larkin, 2/28/01)

Brøderbund hired Larkin as a composer slant sound designer in 1994; his digital audio experience with samplers translated well into manipulating digital audio for sound effects. He edited and recorded “destination tracks” and theme music for the deluxe versions of Where in the World Is Carmen Sandiego? and Where in the USA is Carmen Sandiego? Larkin fondly remembers orchestrating an eighteen-piece big band for one of Carmen Sandiego’s opening themes: “It [was a] screaming opening!” (Larkin, 2/28/01) Nevertheless, his original score for Brøderbund’s Riven is perhaps more renowned.

Larkin witnessed first-hand the rise and eventual fall of Brøderbund Software Inc. When the company hired him in 1994, business was booming. Myst was wildly successful, the share price was climbing, and “Brøderbund was a great place to work.” (Larkin, 2/28/01) Every Friday at 4:30 the managers brought kegs of beer and wine to the employees of which they’d “knock down and then party.” (Larkin, 2/28/01) Too, Brøderbund boasted a state-of-the-art weight room facility. But then came, as Larkin describes it, “the shakeout of the CD-ROM companies.” (Larkin, 2/28/01) Brøderbund had to cut personnel across the board, and the morale dropped. A failed merger with The Learning Company also contributed to the melancholy. In March 1998 Brøderbund laid off 70 additional workers, 7% of its workforce, as part of a cost cutting and restructuring campaign. In May the company reported a net loss of $3.5 million, or fifteen cents a share. TLC agreed to buy Brøderbund in a $420 million stock swap on June 22, 1998. This is the way Brøderbund ends – not with a bang, but a whimper.

The Franchise


Today, Brøderbund exists only in name: the Brøderbund Productivity Division – part of TLC, owned by Gores Technology Group – produces The PrintShop, Kid Pix, and Compton’s
Encyclopedia. Nevertheless, the Carmen Sandiego series continues to dazzle children, parents, and teachers alike. Each game embodies the former company’s style, which Lauren Elliott describes as “high quality, original, family-based entertainment.” (Elliott, 3/16/01)

Arcades, and a Lot of Money

There exists a variety of business-related factors that shaped the design, marketing, and success of the original WWCS?: 1) the financial practicality of arcade-style games; 2) the trifling sales of learning software juxtaposed strict educational standards for supplementary classroom materials; 3) the inundation of schools with Apple computers; and, 4) an increasing number of software retailers.

According to the Software Publishers Association, learning games accounted for $132.5 million in sales in 1988, compared with $2 billion spent on at-home video game systems. (Lazzareschi, par. 10) Nintendo Of America, for example, produced hundreds of arcade-style games in the 1980s, precisely because they sold extremely well. Brøderbund and other fledgling software companies made small-screen versions of arcade games for the Commodore Vic, the Commodore 64, ATARI, and the personal computer; they and console makers drank from the same well. When Brøderbund introduced WWCS? in 1985, critics noted a subtle difference between it and other games aimed at the youth and school market: WWCS? focused slightly more on entertainment while the other programs focused slightly more on education. Designers Elliott and Portwood insisted that there be no “arcade games” in WWCS? per se, but the pioneering edutainment title amused and entertained adolescent game-players nationwide. It appears that Brøderbund’s capacity for successful edutainment products stems directly from its initial business strategy: design, produce, and market fun.

Strictly educational software sold poorly in the early 1980s. Wolfenstein affirms, “Davidson has done ok… Wicat was one of the biggest players, but never made a profit… Paramount had an education division and that sold out several years ago.” (Wolfenstein, 3/1/01) In addition, auxiliary teaching materials – namely, computer software – had to adhere to exacting intrastate education requirements; school administrators “had a list of learning points and always [looked] over your shoulder to make sure you [included] them all.” (Miller, 3/13/01) Subsequently, companies avoided partnerships with schools like the plague; “it [was] a kiss of death in this business,” recalls Doug Carlston. (Oldenburg, par. 25) That there was no money in learning software, that designing products for schools was acutely taxing, caused Brøderbund to first market WWCS? as a home “entertainment” product.

According to Janese Swanson, “Carmen [sales] took off after a school edition was launched and teachers began using [the program] in the classroom… it became a great education product.” (Swanson, 3/4/01) By the late 1980s, Brøderbund had recognized the commercial potential of edutainment software and repackaged Carmen Sandiego for the school
market; "school pack" versions of WWCS? included a teacher’s manual and student workbooks. But again, Apple Computer’s contributory causal role to Carmen’s success cannot be overvalued: Brøderbund superimposed its Carmen Sandiego products on top of Apple’s in-the-classroom computer empire.

Soon, sales of edutainment software spread from computer stores into mainstream retail outlets like Price-Costco and Wal-Mart. “Even Toys R Us was selling [learning] software,” says TLC’s Sharyn Fitzpatrick. (Abrahms, par.18). Once educators and students found WWCS?, it seems everyone wanted a piece of the edutainment business. In fact, edutainment software sales topped $600 million in 1992 according to the SPA. (Radin, par. 9) The number of educational software packages on the market in 1994 dizzied the average consumer: Children’s Software Revue examined an astonishing 1,150 titles. (Abrahms, par. 4) In the same year, Brøderbund’s products sold in over 14,000 different outlets, including specialty retail stores like Circuit City, and other mall-based franchises. (Perkins, par. 23)

Can you CD Benefits?

The evolution of storage media and the personal computer constitute technology’s minor, but significant role in the development of the Carmen Sandiego series. In particular, the CD-ROM and continual technological improvement of the Apple and IBM PCs upped the quantitative and qualitative ante of Brøderbund’s edutainment frontrunner.

The CD-ROM brought high-quality images and audio, including speech, into the software environment. Insofar as speech plays a critical role in the pre-reading and early reading stages of educational development, the shift to CD-ROM media greatly benefited the education software market. In response to the CD-ROM’s increased storage space Tim Wilcox – a designer for WWCS? Deluxe – developed an image processing technique for creative enhancement and multi-resolution archiving of digitized photographs licensed from The National Geographic Society. (Wilcox, par. 18) Gone were Bevan Wolfenstein’s handcrafted images, but the graphics and animations looked great! Indeed, WWCS? Deluxe included high-resolution, digitized graphics, 2,500 clues and a gang of digitized-voiced criminals. In January 1990, the Business Wire documented Carmen’s graphic and interface improvements for the IBM PC:
Like most software companies, Brøderbund waited like kids on Christmas Eve for the latest and greatest in technological know-how. At the stroke of midnight they’d scurry downstairs and empty their stockings filled with microprocessors, soundboards, monitors, and peripheral devices. Contemporaneous with the introduction of new-fangled hi-tech expertise, Carmen looked and sounded better, but the game’s fundamental design remained the same. Thus, a brief survey of graphic and sound technologies in the 1980s will suffice.

In August 1981 International Business Machines introduced the IBM PC, its first personal computer. The PC used the Intel 16-bit 8088 microprocessor and offered ten times the memory of other personal computer systems. In 1982, Jim Clark founded Silicon Graphics Inc. (SGI); the company focused its resources on creating the highest performance graphics computers available. These systems offered built-in 3D graphics capabilities, high-speed RISC (Reduced Instruction Set Chip) processors, and symmetrical architectures.

In January 1984 Apple Computer released the Macintosh 128k, the first personal computer to use a graphical user interface (GUI). The Mac utilized a Motorola microprocessor, a single floppy drive, 128K of memory, a 9” high-resolution screen, and a mouse. At the same time third party companies began providing specialized software to run on these new graphic platforms. Adobe Systems Inc. produced Photoshop for the Mac in the late 1980s. Early 3D animation software for the higher end market included Alias v1.0, Wavefront, and Intelligent Light.

In 1988, the tiny soundboard market was dominated by Ad Lib, a Quebec-based company whose Yamaha FM synthesizer-chip-based board was supported by hundreds of game titles. At the time, Ad Lib was the only firm that Yamaha supplied. Then Microsoft stepped in and asked Yamaha to sell the chips on the open market. In November 1989 Creative launched Sound Blaster, the first board that mounted the Yamaha chip; their innovative soundboard was

---

9 Hmm... can you say ironic?
compatible with existing games, and supported the new software. In addition to music synthesis, the Sound Blaster offered the digital sound capabilities of the Mac. Brøderbund developed two of the first products that supported Sound Blaster: *Prince of Persia* and *WWCS? Deluxe.*

**Nintendo, with a Purpose**

The pitch is this: the computer's immediate obedience to your orders and its animated, color graphics give you such delight, such an exhilarating feeling of control, that you learn useful history, geography and much more while you play. Just imagine, wildly popular video games that teach! *That, my friend, is "edutainment."*

Educators were delighted by the possibilities of computer software for engaging and empowering students, but worried about the programs' content. Some claimed that such programs would push teachers out of their central role in the classroom and reinforce male-oriented education and computing practices. In response, others cited the mass appeal of video games and suggested that they might prove to be superb teaching devices. Janese Swanson, former schoolteacher adds, "I remember the guilt I felt for teaching geography from books and my imagination – I had never visited any of the places I was teaching about." (Swanson, 3/4/01)

Educational software, namely Carmen Sandiego, provided educators an infinite realm of virtual opportunities, but many feared that computers in the classroom undermined teacher-to-student, home-to-school, and parent-to-child relationships.

"There is a hidden agenda in this [educational] software of dethroning art, music, and composition."

- Tom Snyder, author of *The One Computer Classroom* (Radin, par. 20)

Brøderbund's Carmen Sandiego pacified (or sidestepped) society's aversion to classroom technology in at least three ways: 1) designers and producers of *WWCS?* made sure that a physical reference book – a World Atlas or encyclopedia – remained integral to game-play; 2) they exploited the synergistic relationship between schools and the home to market their product; and, 3) *WWCS?* bridged the gap between boy and girl game-players.

Every Carmen title comes with a related reference tome; overwhelming at first, the adolescent game-player soon navigates the World Atlas, an encyclopedia, or map of the stars with relative ease. Perhaps Carmen's combination of traditional and new media appeased educational theorists who vehemently opposed the use of computers in the classroom. Indeed, teachers often stood behind *WWCS?*-playing students and helped them locate a country's flag, the name of a constellation, or the date of Julius Caesar's crossing the Rubicon river in one of Carmen's supplied texts. *WWCS?* held the user's interest without sacrificing substance, and vice-versa.

In 1996 Doug Carlston estimated that in Brøderbund's educational products, roughly 80% of revenues came from the home and 20% came from schools; (Southwick, par. 10) these sales
figures suggest a cooperative interaction between domestic and scholastic consumers. Indeed, kids and teachers created (and still create) a self-perpetuating market for educational software. For example, Sarah's parents buy her WWCS? Soon, Sarah asks her teacher, Mr. Jefferson, to “play Carmen” in class. Mr. Jefferson likes the program, and introduces it to his class the following year. Mr. Jefferson’s students ask their parents to buy them the software. Thus, little Johnny’s parents buy him the program and the process begins again. Steve Jobs supplied homes and schools with personal computers. Brøderbund responded with Carmen Sandiego.

Finally, WWCS? satisfied the game-play predilections of both boys and girls. It afforded boys the excitement of the chase, and the prospect of winning or losing. Girls met interesting characters and visited new places. Boys reveled when local police forces escorted the V.I.L.E. henchman to jail, and girls studied criminal dossiers in order to evaluate potential suspects: WWCS? was “gender-neutral.”

In closing it is important to remember that adults design educational software. This unavoidable generation gap between conceiver and consumer results in confused attempts by designers to “give kids what’s good for ‘em,” or “to explain everything.” Indeed, Carolyn Miller describes a set of common misconceptions – “kisses of death” – about the special needs of prepubescent consumers. “Kids know the difference,” says one former educator. “They know that Football Spelling has nothing to do with football and everything to do with spelling. And by and large they don’t want that much to do with it.” (Lazzareschi, par. 9) Unfortunately, most learning "games" are repackaged pencil and paper drills: for example, Math Blaster. Conversely, Carmen Sandiego gives kids what they want: respect.
WHERE IN THE WORLD IS CARMEN SANDIEGO?

By Dane Bigham

EXPLORATIONS

1986 Outstanding Software Award
California Computer Learning
1985 Best Learning Product
Software Publishers Association

INCLUDED INSIDE:
Your guide to catching Carmen!

By Glenn Axworthy

Broderbund

By: PC/XT/AT/PCY & 1044

Scroll Lock or Joystick

Graphically superb

Explorations

www.noisegames.com
Where in the World is Carmen Sandiego? (back cover)

EXPLORATIONS

Mystery! Intrigue! Adventurer! Explore the great cities of the world as you stalk a Master Thief to the far corners of the globe.

THE CRIMES OF THE CENTURY!

IT'S A DARK DAY IN NEW YORK CITY!

The metropolis awakens to find the Statue of Liberty's torch gone... stolen! This could only be the work of Carmen Sandiego's gang—that notorious band of thieves that specializes in the theft of priceless national treasures. The citizens are outraged, the Mayor's up in arms... and you've been assigned to the case!

The Great International Chase.

At the Acme Detective Agency, your Crime Computer gives you the facts, just the facts. You hurry to the scene of the crime and, with a little investigation, you learn that the thief has been spotted heading for the airport. You're off on a whirlwind international chase through the great capitals of the world: London, Rome, Moscow, Kathmandu... the thief always seems to be one step ahead of you.

THROW THE BOOK AT 'EM!

In each city, you'll see a well-known landmark or monument (if it hasn't been stolen yet!). You'll be briefed on the local geography and culture. And, as you explore the city, you'll unravel clues to the crook's identity and where he or she has fled. Some clues you'll understand right away. Others will take a little research. Lucky for you, you have your trusty copy of The World Almanac and Book of Facts—-the best information source any international crinestabber could ask for. When in doubt, look in the book... and all will become clear.

WHO DO YOU BUST?

WHERE IN THE WORLD IS CARMEN SANDIEGO?

by Dane Bigham

- Menu-driven game play provides quick action
- Players are introduced to world geography in an exciting game situation
- Game play combines best elements of graphic adventures, trivia games, mysteries and arcade animation
- Friends or family can play together, helping the Detective decipher clues by looking up facts in the World Almanac, one of the world's most comprehensive reference books
- 10 possible suspects, 30 cities, nearly 1,000 clues—a different game every time you play

© 1987 Broderbund Software, Inc. The World Almanac is a registered trademark of Newspaper Enterprise Association, Inc.
Where in the World is Carmen Sandiego? (back cover)

EXPLORATIONS

CRIME DOESN'T PAY IN THE USA!

May 14

U.S.A. DAILY

PRICELESS

WANTED: CRIMEBUSTERS

Candidates should have an inquisitive mind, an adventurous spirit and an uncanny knack for interpreting clues.

The security of America is at stake.

The international community breathed a sigh of relief when Carmen's last heist landed her behind bars. Now Carmen has escaped and is intent on furthering her clandestine career in the land of the free and the home of the brave.

Which treasure will be the first to go? Maybe the Washington Monument or the Liberty Bell—cracked though it may be. Absolutely nothing is sacred to the vile but glamorous Sandiego and her gang as they attempt to steal from under our noses the very treasures that make America so American!

It's a dirty job, but somebody's got to do it.

Your assignment at the Acme Detective Agency is a simple one: stop these criminals in their tracks! At the scene of the crime, you'll gather all the facts. Then, while the trail is hot, you'll off on a chase across all 50 states and the District of Columbia.

Does the crook have an interest in shipwrecks off Cape Hatteras and you've never heard of the place? Don't worry. A quick check of your trusty Fodor's® USA travel guide will tell you Cape Hatteras is in North Carolina. And while you're thumbing through Fodor's, you'll pick up geographic and historical tidbits as well as impressive trivia.

You know something they don't know.

Carmen's secret scrapbook, containing clues about the gang's appearance, hobbies and more, has been acquired by Acme. Match the clues you've collected with the suspected criminal's description and use the Crime Computer to obtain the proper arrest warrant.

Who's the villain this time? If he was seen eating tacos he might be the hypnotic Sven Galli who has a craving for Mexican food. Or maybe the suspect was overheard asking for a book on spelunking. That could be a tip-off to B.D. O'Brien, amateur cave crawler.

Your special skills are needed and there's no time to lose. So get ready for instant action as you set out to prove that crime doesn't pay in the USA!

Where in the USA is Carmen Sandiego?*

By Ken Bull, Gene Portwood, Laura Elliott

★ Exciting sequel to "Where in the World is Carmen Sandiego?"
★ Crimebusters become familiar with U.S. geography in an exciting game situation.
★ Menu-driven; no tiresome typing.
★ Game combines best elements of graphic adventures, trivia games, mysteries and arcade animation.
★ Crimebusters research clue information in Fodor's USA travel guide which provides maps of each state as well as specific state-by-state descriptions and more.
★ Total of 16 suspects, 50 states plus the District of Columbia, more than 1,500 clues, 10 detective ranks to climb, thousands of random games, and save-game feature.
Where in America’s Past is Carmen Sandiego? (back cover)
Where in the World is Carmen Sandiego? (Spanish version – front and back covers)

The Carlston Siblings (1983)

The PrintShop Screenshot (1984)

Radio Shack TRS-80 Model 1
Carmen Sandiego Screenshots

Where in the World is Carmen Sandiego? (1985)

NEW DELHI
Monday, 9 a.m.

Welcome to New Delhi, the capital of India, and site of the ancient Red Fort, a former Mogul palace.

See connections
Depart by plane
Investigate
Visit Interpol

Where in the World is Carmen Sandiego? (1986)

ATHENS
Monday, 9 a.m.

Athens, with a population of 3 million, is the largest city in modern Greece.

See connections
Depart by plane
Investigate
Visit Interpol

Where in the World is Carmen Sandiego? (1986)

Where in the USA is Carmen Sandiego? (1987)

San Francisco
Turn 3 L

Welcome to California, the Golden State.
California is the most populous state in the U.S. It has over 25 million people.

See Connections
Depart by Plane
Investigate
Crime Computer

Where in the USA is Carmen Sandiego? (1987)

Where in Europe is Carmen Sandiego? (1988)

Leningrad
Sat 5 pm

The Soviet Union is the largest country in the world, covering one-sixth of the Earth's land area. Most of the Soviet Union lies in Asia, but

Copenhagen
Luxembourg
Stockholm

Case History Sources:

Periodicals:


Books:


Electronic Sources:

<http://www.atarimagazines.com/v2n7/CarlstonTrio.html>

<http://thelinq.network13.net/brodercp.html>

<http://www.c64gg.com/index.html>

<http://www.siggraph.org/publications/newsletter/v32n2/contributions/collins.html>

<http://www.gamasutra.pair.com/features/20000112/kids_01.htm>

<http://www.longnow.org/about/board/carlston.htm>


<http://www.gamasutra.com/features/20000207/marks_01.htm>


<http://www.gsu.edu/~wwwitr/docs/mjgames/>


<http://www.mobygames.com/>


**Personal Interviews:**

Elliott, Lauren. Personal interview. 2/28/01, 3/2/01, and 3/16/01.

Miller, Carolyn. Personal interview. 3/13/01.

Larkin, Tim. Personal interview. 2/28/01.

Wolfenstein, Bevan. Personal interview. 2/28/01, and 3/1/01.

Swanson, Janese. Personal interview. 3/4/01.