



Antique Maps for the Twenty-First Century

BY JANET MENDELSON

Using cutting-edge technology, Historic MapWorks makes maps and charts from the earliest years of our country available to anyone with web access.



CHARLES CARPENTER can turn your computer into a time machine. All it takes is an address or the latitude and longitude of your house, your great-grandfather's farm, or the local boatyard. On his company's web site, www.historicmapworks.com, type the location into the search box and presto! Links appear to a multitude of maps, some 250 years old. Enter the address of this magazine (43 Mechanic Street, Camden) to find maps showing the streets of Camden in 1860, 1875, and 1884. Other searches bring up bird's eye views of towns or charts, including some accented with illustrations of nineteenth-century ships.

Historic MapWorks, of Westbrook, Maine, used cutting-edge technology to turn Carpenter's vast personal collection of antique maps into a state-of-the-art, multifunctional research tool. Founded in 2005, this marriage of past and present has already produced more than 150,000 images, a computerized collection that Carpenter says forms the world's first electronic database of searchable maps of nineteenth and early twentieth century America.

To Charles Carpenter (right, above), antique maps, charts, and atlases are more than pretty visual objects—they are time lines in the development of our country.



photos at right by Janet Mendelson. All others courtesy Historic MapWorks

Tome I. N° 31



Boston, Massachusetts, before the shallows around the peninsula were filled in, from an old French atlas.

There are maps of Atlantic City, before and after casino construction, and maps depicting the Boston Fens as mostly swampland, then as a planned neighborhood, and then with construction under way for Fenway Park.

In the company's Westbrook headquarters, previously the offices of Portland Glass, hundreds of years converge. There are glass divider walls and contemporary cubicles with computer desks, giant flat-bed scanners, and high-speed printers that use archival inks that should last 100 years. A staff of 15 computer programmers, researchers, sales reps, and technicians works surrounded by art deco floor lamps and handsome old maps of Casco Bay and points west. Masters of high-tech wizardry, they restore centuries-old pages carefully detached from aged atlases that rest in stacks on tables in each room. Brown-tinged sheets

of paper fill the heavy volumes that are bound in gold-tooled brown, russet, and black leather. Most of the atlases contain cadastral maps that show boundaries and ownership of land. They document the history of America's westward expansion. Many were unearthed in barns, attics, bookshops, and dusty closets in county offices out west or in southern states, as well as in New England.

On Maine's brightest days, when sunlight threatens to fade the fragile old pages, HMW staffers pull down the shades and dim the lights. Everyone seems to have more than a casual interest in the work at hand. Who can blame them when the product of their labor is the restoration of these beautiful old maps? Here are maps of Atlantic City, before and after casino construction; three maps depict the Boston Fens as mostly swampland, then as a planned neighborhood, and then with construction underway for Fenway Park. World Series baseball fans were still to come.

Historic MapWorks is a lucrative labor of love for Carpenter, a mustached entrepreneur with a PhD in microbiology and a 30-year passion for antique maps and rare books. That passion has led him to amass what he says is the premier private cadastral map collection in the world.

After living in five states, from Alaska to New York, he arrived in Maine to work at Idexx Laboratories of Westbrook, the international developer of technology-based products and services for veterinary medicine and food and water safety, where he still is employed as a longtime research fellow. He holds 18 patents in biochemistry and for medical devices.

Growing this business seems to come naturally to Carpenter, who thinks big where others think small. A few years ago, he challenged himself to rebuild his 41-foot Morgan sailboat, *Texas*, after it sank in a hurricane. He built a custom interior, and all exterior hatches and trim; installed a new engine and systems; and re-rigged the boat, all before learning to sail. Carpenter then sailed *Texas* over a three-year span, beginning in 2001, to Bermuda, Haiti, Cuba, Miami, and up the coast to Atlantic City, New York, and back home to Portland.

Carpenter can be a difficult man to read. When we spoke, he was reserved, barely smiling even as he intently described the enthusiasms that drive his life: photography, biochemical research, raising money to build playgrounds for children in Haiti and Afghanistan, and amassing a vast library on the history of science that includes fifteenth-century incunabula (among the earliest printed books) and writings of Galileo. Some day, he said, he will donate his map collection to the University of Southern Maine's Osher Map Library. Late last year, HMW signed an exclusive commercial agreement with the library, adding 2,000 of the library's antiquarian maps dating from the 15th century to HMW's resources.

Matthew Edney, Osher Professor in the History of Cartography at USM, said county maps and atlases are the single best point of access into the geographical intersection of American society, land ownership, agriculture, and industry in the 1800s.

"The nineteenth century was a period of intense urbanization, industrialization, and economic change," said Edney. "These maps and atlases cover much of the country, and many areas were remapped twice or even three times, so these maps can provide a firm basis for longitudinal studies. They often provide a wealth of information about historic architecture and local social organization, and they are a genealogist's delight. Carpenter's collection of these crucial historic documents is almost certainly the most extensive in private hands, and perhaps the largest outside of the Library of Congress. The gift of the collection to the Osher Map Library would be a truly significant addition to the cultural resources of USM and the people of Maine."

Indeed, Historic MapWorks's web site is a cartographer's candy store with treats for those who study family history as well as for urban planners, historians, environmentalists, and you and me. Wander its virtual aisles and get lost in the past or pick up all kinds of facts about American economic development and changes in demographic patterns as the young country grew.

The web site is a good place to con-

duct business, too, as it facilitates property title searches that can go back generations. To retrace the history of 271 Park Avenue in Portland, now Hadlock Field, the home to the Sea Dogs baseball team, simply type in that address and you are instantly connected to a list of 82 maps. Sixteen are address-specific with thumbnail images of each map. Another 48 link to general maps of Portland and 18 link to general atlases in which more data can be found. You can study the Portland Eastern Cemetery, or order a reproduction of an individual map for \$29.99 to \$150, with nearly all under \$40. They are typically processed and shipped within 48 hours.

Genealogy is often cited as the second biggest hobby in America. Carpenter has trademarked the term "Residential Genealogy" and is positioning HMW's database as a research site for enthusiasts attempting to complete branches on their family trees. Since former property owners' names are clearly marked on many of these maps, the database can be a boon to those looking for their forefathers and -mothers who established businesses and built homes across the country. He also anticipates business from home owners, urban planners, and real estate professionals.

"These old maps combine fine art, mostly hand-painted, with the history of a place," says Carpenter. "They are a wonderful connection to people who lived on a farm in Iowa or attended church on a country road that still exists."

Cadastral maps once were a cottage industry. In the 1860s, traveling surveyors sold the atlases for ten dollars apiece, a hefty price at the time. Itinerant mapmakers would use wheelbarrows as pedometers to measure real estate parcels; they would record property owners' names, lot sizes, and area buildings. Later, the maps they created were hand-painted in watercolor by women paid one dollar a day to work at home. For additional fees as high as \$100, homeowners could have a sketch of their house, or their own portrait added. Mapmaking was a sort of vanity press of its day.

Maine is the only state in the northeast without full coverage by the antiquarian atlases, says Carpenter. That's because the atlases were produced as commercial ventures. Salesmen went where sales prospects were good, and the population of Maine was too small a market. One exception was Aroostook County, although Carpenter doesn't know why.

Cities were mapped first, and as plots of land around them were sold, their boundaries were added. At one time, as many as 25 companies criss-crossed the country making the maps compiled later in the atlases. Populated areas also had fire protection and insurance maps. The deep South after the Civil War, as well as Nevada and Utah pre-statehood, rarely were recorded in atlases but were covered by large county wall maps, government land patent maps, and state-initiated mapping projects. Altogether, these maps and atlases reveal land usage over time, including stockyards, factories, refineries, and granaries, which makes them useful today for environmental property analysis.

Historic MapWorks began in the most casual of ways. One day in a small New Hampshire bookstore, Carpenter picked up an old Maine atlas that reminded him of a past purchase, a Scarborough map, dated 1871 (his home was built at about that time). Like other cadastral maps, this one was illustrated with houses, churches, cemeteries, and stores; symbols indicated woods and orchards. Carpenter had studied countless similar maps over the years, but this time it occurred to him that beautiful old maps reveal much more than former roads and railroad tracks. They chronicle America's past and offer a gold mine of useful information. Suddenly he saw a business opportunity.

The company that was born currently owns about 200,000 North American cadastral maps and views printed from 1885 to 2005. Three-quarters have been scanned and are available on the company's web site, which makes it the largest digitized online collection in the world. Over 16,000 items are geocoded, meaning searchable by Global Position System (GPS) coordinates. Two years

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ago, HMW purchased Title Atlas Company, which gained them copyright to thousands of Midwest cadastral maps published between 1963 and 2005.

Carpenter's collection also includes navigational charts and individual antiquarian maps, which did not appear in atlases and have become hard to find. He said that over the past five years, atlas prices have skyrocketed, if they turn up at all in antique shops or estate sales.

"These maps also have a relatively high mortality rate," said USM's Professor Edney, "especially the wall maps, so their preservation by Mr. Carpenter is very much to be praised."

Historic MapWorks plans to create a special collection of celestial maps, battle plans, and such rarities as ethnographic depictions from the 1860s. But grabbing the gold ring will require another round of financing, enabling the company to create an "antiquarian world map" combining 200,000 individual maps.

The antiquarian world map will be like an antique Google Earth, the pop-

ular Internet source for current geographic information, says Carpenter. "Like Google Earth, our database spans the country and eventually will be international. But unlike theirs, our database travels through time." Users would be able to pan and zoom across surfaces of the earth as well as move from one century to the next. An impressive example of the company's technology hangs in the company's office. Pieced together from smaller maps, it is a map taller than a grown man: the world's first composite map of New York's crown jewel, Central Park, under construction in 1867.

Digitizing maps begins when employees gently unbind atlases. They remove leaves, bugs, and any mementos tucked inside, the residue of decades in old barns. "Many of the books had a hard life in offices with smokers, or they're dusty from storage and often smudged" says Jason Braley, data manager. Individual maps are scanned in 24-inch or 42-inch format, in full color, at 300 dpi (dots per inch). Using technolo-

gy developed by HMW, the maps are cleaned for clarity. Artificial distractions, such as tears and ink spots, are removed. Watermarks and other antique qualities are retained to bring the map as close as possible to its original state.

"People like to see evidence of time as well as find family names on the maps," says Braley. "We delete handwritten scribbles that were added later, things that detract from a map you might want to hang in your home or office."

Combining XMAP software from DeLorme, another Maine company, and a software program also developed by HMW, Geographic Information System (GIS) coordinates are added next. This gives anyone the ability to conduct research online by entering the latitude and longitude of two intersecting streets, or of a landmark that still exists, linking it to the same address a century or more ago. Enter Latitude 42.35978 N, Longitude 71.06617 W for Boston's Beacon Hill, for example, and up pop 36 maps of the area dating from 1722 to 1938.

The latest feature to go live on the company's web site is annotation that points to a specific address, and reverse annotation providing coordinates that can be entered into a handheld GPS to guide the user to a precise spot, such as the cemetery where an aunt was buried or the church where one's grandparents were married. Carpenter, who has invested considerable time in ascertaining intellectual property rights, said that maps published prior to 1923 by law are in the public domain. Anything after that year requires extensive copyright searches to establish the ownership and copyright status.

"The fact that we wrote and own our software, and own all our data, is key to our success," says Carpenter. "We can build our own commercial models and not worry about anyone shutting us down."

Historic MapWorks is divided into two business units. A printed products division involves retail sales of maps and giftware, both directly from the compa-

ny's headquarters and through a program of customization with 400 art and frame galleries. Gift items include ceramic mugs, hostess trays, coasters, journals, mouse pads, and jigsaw puzzles printed with maps of selected U.S. landmarks, sports stadiums, golf courses, and academic institutions. A few are in Maine.

The second unit, on which the company's finances principally depend, involves commercial applications through licensing and subscription services for the use of the database by researchers, genealogists, and others. The first licensing deal was inked recently with the parent company of ancestry.com, a ten-year-old web site that helps amateur genealogists build their family tree and integrate their data with that of 500,000 other family trees and records containing five billion names. In addition to making the map database available to ancestry.com's registered users, HMW's individual printed maps and giftware will be mar-

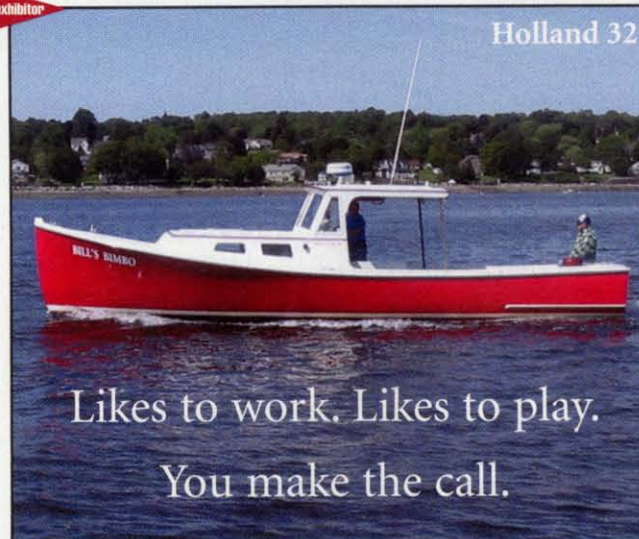
keted through the site. Currently, HMW is also licensed to ProQuest, a vast database for libraries and researchers worldwide, and has supply agreements with National Geographic, Light Depot, and EDR (Environmental Data Resources).

If things go right, Carpenter said, future projects will tap into the huge consumer market for online video games. Toward that end, the company has already filed a provisional patent to protect the use of real historical geographic maps for gaming.

All that, however, is in the future. Today—right now—you can go to a computer, type www.historicmapworks.com into the address window of your browser, and travel back in time. With a bit of luck and imagination, you'll see the farm field or street where your house was later built.

Contributing Editor Janet Mendelsohn studies old maps of her neighborhoods in Kittery Point, Maine, and Somerville, Massachusetts.

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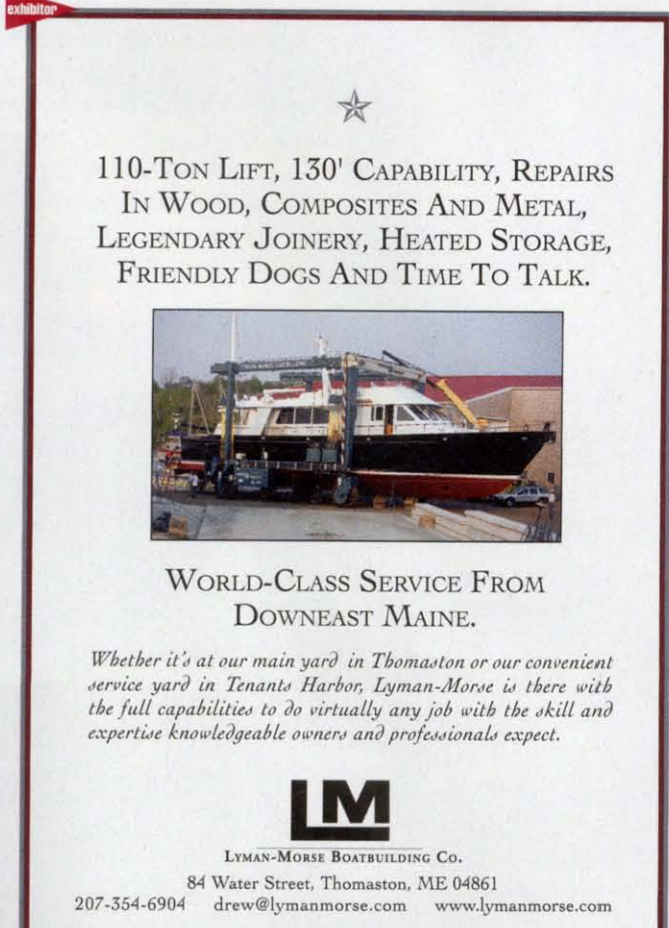
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