Feature

The California State Railroad Museum

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Introduction

This article describes what we believe is one of the largest and most ambitious railway preservation projects underway in the United States today—the completion of the California State Railroad Museum (CSRM) and the preservation of the Southern Pacific Railroad's Sacramento Shops (SP Shops). We will provide a behind-the-scenes look at this project with a description of its history, accomplishments, philosophy, and vision.

We will begin with an overview of the CSRM as it exists today—its collections, facilities and programs. We will then discuss the history of the SP Shops in order to provide a context for understanding what we hope to accomplish. Finally, we will explore the unique public–private partnership that is underway in Sacramento to preserve and develop the SP Shops including the final phase of the Railroad Technology Museum.

Widely regarded as North America's finest and most-visited railroad museum, CSRM is located in Old Sacramento. Here, a uniformed docent talks to visitors in front of an 1875-vintage North Pacific Railroad locomotive, *Sonoma*, and its train of 19th century passenger coaches. (CSRM)

Early History of California State Railroad Museum

The CRSM is an ambitious, multi-phase project of California State Parks—we are one of some 250+ units of the California Department of Parks and Recreation. We arrived in the railway preservation field in 1969 when the Pacific Coast Chapter of the Railway & Locomotive Historical Society began presenting their historic collection of locomotives and cars to the State of California. The Pacific Coast Chapter was organized in 1937 in the San Francisco–Oakland Bay Area where they began collecting historic steam locomotives and rolling stock. Their first acquisition was the 1875 Virginia & Truckee (V&T) switch engine named the *J. W. Bowker* after the V&T's revered Master Mechanic. Over the next 30 years, the Chapter collected some 30 locomotives and cars dating from 1873 to 1954. The Chapter operated many pieces of the equipment on fund-raising excursions with the hope of one day developing a major railroad museum in the Bay Area. But the politics and funding were not to be. Frustrated by attempts to develop their own museum, the Chapter made a magnanimous gift of the core of their collection of locomotives and carriages to the State of California. Overnight, the State was thrust into the railway preservation movement.

Key visionary—William Penn Mott, Jr.

The visionary who accepted this gift for the State was the late William 'Bill' Penn Mott, Jr (1910–92)—Director of the Department of Parks and Recreation in the administration of then Governor Ronald Reagan, and who was later appointed Director of the US National Park Service after Reagan was elected US President. Mott had the vision to appreciate what a major railroad museum could mean for California's State Park

System in California's capital city of Sacramento.

Why Sacramento?

Early researchers on the project recommended Sacramento as the location for the state railroad museum. Sacramento is indeed historic soil on which to locate the facility—the first railroad in the state ran from Sacramento to the nearby community of Folsom; ground was broken at Sacramento for construction of the western part of the Transcontinental Railroad; and the largest railroad industrial complex west of the Mississippi River has been located for decades at Sacramento. While the state railroad museum might enjoy more visitors had it been located in San Francisco, Los Angeles or San Diego, Sacramento was the birthplace of railroading in the state and the most appropriate place historically. Mott orchestrated the so-called 'Great Train Robbery' whereby the Chapter's gift of 30 locomotives and cars in total was 'relocated' from the Bay Area and moved 90 miles inland to Sacramento.

Development of Old Sacramento State Historic Park

Old Sacramento State Historic Park was in its embryonic stages in the early 1960s. Old Sacramento was the birthplace of Sacramento—it was the furthest inland river port that would became the jumping-off point for California's Gold Rush of 1849. Redevelopment and preservation of the historic six-block district would be a joint venture between the City and County, through the Sacramento Housing and Redevelopment Agency; the State of California, through State Parks, would create an anchor visitor destination with the state railroad museum.

Political advocacy

In a political arena, competing projects often succeed not just on their merits but because they have a strong and active political constituency. California's railroad museum is no exception. Dr Denny Anspach was one of the museum's founding fathers who purposely established his radiology practice at Sacramento so he could be a staunch advocate for the railroad museum. Other early supporters included State Senator Albert Rodda, Chairman of the Senate Finance Committee; Senator James Mills, president *pro tempore*; and the Sacramento Trust for Historic Preservation. The Sacramento Trust together with Southern Pacific Railroad and the Pacific Coast Chapter were successful in hosting a dinner in 1970 for then Governor Reagan onboard the Museum's private car *The Gold Coast*. After a memorable evening, the Governor was motivated to sign the first funding legislation in support of developing the CSRM in Old Sacramento.

Steam-powered excursion trains are a regular feature in Old Sacramento during the summer, thanks to the Sacramento Southern Railroad, official excursion railroad of CSRM. Trains depart every weekend April–September from the reconstructed Central Pacific Freight Depot, taking passengers on a 6-mile roundtrip ride along the banks of the Sacramento River. (CSRM)

Museum's Master Plan

Comprehensive master plans are wonderful documents. Hardly a week goes by that some recent visitor to our museum doesn't call with a compliment and ask how they might create a similar visitor attraction in their community. There's usually a long, initial silence on our end of the telephone. We will ask what they have in the way of a collection—after all, museums exist only as they have collections which need to be preserved, researched, conserved, exhibited and interpreted. Frequently the callers will say they just plan to acquire a few old locomotives and cars—no small task at this advanced date in the railway preservation movement. Then we'll move on to discuss the value of having a plan! On many occasions, one feels good if 20% or 30% of a master plan is accomplished. But the time and imagination spent on our 1973 Master Plan was well invested. The plan

envisioned several phases—three restored or reconstructed buildings, i.e. the Central Pacific Railroad Passenger Station, the Central Pacific Railroad Freight Depot, the Big Four and Dingley Spice Mill Buildings, an operating steam excursion train opportunity, a major Museum of Railroad History, and a companion Railroad Technology Museum. To date, nearly 80% of our master plan has been completed and we are now poised to finish the final phase of the project—the Railroad Technology Museum.

The Central Pacific Railroad Passenger Station

The first phase of the master plan—a type of trial balloon—was the reconstruction of the Central Pacific Railroad Passenger Station on its historic site in Old Sacramento. The building stood on this site from 1867 until 1879 and was, for several years, the western terminus of the first Transcontinental Railroad in the USA. The Station was fairly accurately reconstructed with main waiting room, separate waiting room for ladies and children, ticket office, agent's office, baggage room and the Silver Palace Eating Stand. It opened in 1976 under period gas lamps with seven of the Chapter's locomotives and cars on display. Volunteers and staff periodically opened locomotives and cars for closer inspection, offered tours and track-laying demonstrations, and occasionally got a head of steam up on an 1873 steam locomotive. After 3 years, the initial visitor levels exceeded projections by more than 300%, helping to pave-the-way for state funding of additional phases of California's railroad museum.

The Big Four and Dingley Spice Mill Buildings

The second phase of the project was the Big Four and Dingley Spice Mill Buildings. The Nathaniel Dingley Building is an historic 1854 structure in Old Sacramento. The Big Four Buildings are the Huntington, Hopkins & Company Hardware Store—operated by two of the prominent members of the Central Pacific's *Big Four*—and the Stanford Brothers Store, which were together located at Second Street and 'K' Street and reconstructed in Old Sacramento in 1980. The Huntington, Hopkins & Company Hardware Store is a 19th century hardware store featuring period displays and selections of reproduction hardware products for sale. Upstairs, between the administrative offices of the Railroad Museum and the Railroad Museum Foundation, is the Railroad Museum Library. The Library consists of thousands of books, several hundred thousand original ink on linen drawings, more than 2 million pictorial images, and a plethora of original corporate records, correspondence, maps, timetables, trade catalogs and ephemera with an emphasis on railroads and railroading in North America. The lower floor of the Big Four Building comprises closed stacks plus 24,000 ft^2 off-site for management of the collection. Since opening in 1981, the Library has become North America's largest and foremost independent research center for railroad history and technology.

Equipment restoration program

Planning for the Museum of Railroad History began in earnest in 1976. Several of the Museum's early pieces of equipment could most reverently be described as chicken coops that were largely being held together by termites holding hands. Not finding anyone in the business of accurately restoring 19th century locomotives and cars, the Museum prevailed upon Southern Pacific Railroad and set up shop in an old SP Unit Shop to painstakingly restore 20 locomotives and cars between 1976 and 1981. Careful research and industrial archaeology uncovered up to 40 layers of paint, lettering, striping and varnish on older pieces of equipment. Wood dimensions were duplicated exactly. Components were replicated in great detail. Scholarship and historical accuracy were the hallmarks of each of the restoration projects. The results have been truly miraculous! Oblivious to our hard work, some Museum visitors today ask, 'Where did you ever find all these locomotives and cars in such great condition?' If emulation is any measure of success, it is gratifying that so many railway museums around the world are now adopting the intellectual and physical approach that we incorporate in our equipment restoration program. But the real story of our hands-on equipment restoration and conservation program remains to be told in the new Railroad Technology Museum.

Collection development

Looking beyond the initial 30 pieces of rolling stock, it was obvious that selected acquisitions and concerted development of the collection would be prudent. Among selected acquisitions, project presentations saw the addition of the Santa Fe 2-6-2 No. 1010, Southern Pacific's diminutive 4-2-4T No. 1 *C. P. Huntington*, and the famous SP cab-forward 4-8-8-2 No. 4294 from the City of Sacramento.

In the mid 1970s, the Museum had several dozen full-size pieces of equipment but lacked the myriad of smaller three-dimensional artifacts needed to carry key interpretive exhibits—the bells, buttons, badges, tickets, tokens and other paper and hardware artifacts. Initially, the Museum published and distributed thousands of brochures convincing collectors, railroads, employees, dealers and railroad families why they should present cherished heirlooms to the Museum for permanent preservation and possible

display. Fortunately, it is no longer necessary to publish such brochures—the Museum of Railroad History today is its own best salesman as it informs, educates and stimulates visitors to inquire about donating several hundred collections annually. Donated items range from single sheets of paper to entire truckloads of collections. The western railroads have been generous in sharing their expertise, facilities, artifacts and even personnel—it is a close working relationship that Museum staff work diligently to cultivate and maintain. Today, approximately 5% of the collection is on display at any one time. The remainder is housed off-site—awaiting funding for additional exhibit opportunities in the Museum of Railroad History and the new Railroad Technology Museum.

May 1981 opening of Museum of Railroad History

Ground was broken for the new Museum of Railroad History in April 1978—just weeks before the passage of California's financially limiting Proposition 13. The 100,000 ft^2 building would be the largest purpose-built railroad museum constructed in the US. Nearly a year of construction was invested driving upwards of 1000 piles some 80 ft into the ground to support the structure and anticipated displays. The architect was very sympathetic, picking up the railroad bridge or truss motif in the design of the Museum's roof trusses. The largest wood truss spans 116 ft, has a 7" camber and is not decorative—it actually is carrying the load of the roof.

The first piece of equipment into the building was a narrow-gauge freight train. With cribbing carefully designed for the Museum's second-floor gallery window, the locomotive, tender, box car, tank car and caboose were carefully lifted in by crane and pushed into position on the narrow-gauge trestle—24 ft above the main floor.

Finally, after 3 years of actual construction, 12 years of planning by California State Parks, and more than four decades of dreaming and planning by the Pacific Coast Chapter, the third and most ambitious phase of the CSRM to date—the Museum of Railroad History—was opened to the public when California Governor Jerry Brown officiated at the opening ceremonies on 2 May 1981.

Railfair Sacramento 1981

Such a grand event called for a grand celebration and the Friends of the California State Railroad Museum—the predecessor to the current Museum Foundation—was organized by the late Ed Combatalade (1905–90). For nine days in May 1981, Sacramento and the world enjoyed a three-ring circus consisting of the newly opened Museum of Railroad History, free public displays of historic railroad equipment gathered from throughout North America and including the operating replica of Stephenson's *Rocket* from the National Railway Museum at York in the UK, and *The Song of the Iron Horse*—an upbeat railroad musical review using many of the visiting locomotives and cars. This was the first large-scale gathering of railroad equipment and an associated railroad pageant since the great Chicago Railroad Fair of 1948–49. When all was said and done, nearly 100,000 visitors had toured the Museum and the *Sacramento Bee* newspaper estimated that more than 250,000 visitors had enjoyed the free outdoor displays.

Ongoing exhibit development

A great museum is truly never complete. Since 1981, we've tried not to miss scores of opportunities to rotate and change exhibits—new reasons to bring visitors back for another visit. Exhibits have ranged from interpretive displays of several weeks like Black Hands: Iron Rails and the Mexican American Railroad Workers Exhibit to multi-year exhibits like that of the Toy Train Operating Society. Our latest exhibition is a 5000 ft^2 exhibit on the historic SP Shops.

Collection additions

Since 1981, we have also made selected additions to the Museum's collections. In 1986, Santa Fe approached the Museum to accept nine first- and second-generation diesel-electric locomotives, three steam locomotives and a *doodlebug* motorcar. Today, the collection totals 214 locomotives and cars larger than 18" gauge housed at Sacramento and our ancillary facility at Railtown 1897 State Historic Park—90 miles away at Jamestown, California.

Restoration program

Since 1981, the Museum has returned two steam locomotives and more than six diesel-electric locomotives to operation. Recent projects have included *Granite Rock* 0-6-0ST No. 10, which was originally built for the US Army during WWII and the Budd *Cochiti* dining car built for the famous Santa Fe streamline *Super Chief* train in 1937, which has become the centerpiece of the Museum's popular Dinner in the Diner exhibit.

Recent acquisitions

Recent acquisitions include additions to the papers of legendary Transcontinental Railroad surveyor Theodore Judah (1825–63) including his personal gold scale and Sierra Nevada paintings by his wife, Anna. A recent major addition to the Museum Library is the photograph and negative collection of the late Lucius Beebe (1902–66) and Charles Clegg (1916–79)—the Museum already exhibits The Gold Coast, their unique private car and the acquisitions continue.

Museum volunteers

Throughout its growth and development,

the Museum's primary labor force continues to be volunteers who work in both public and non-public positions throughout the Museum. Currently, there are more than 800 volunteers, most of whom staff key interpretive areas throughout the Museum like the Railway Post Office Car, the *St. Hyacinthe* sleeping car, the *Cochiti* diner, and who help make possible key outreach programs such as Operation Lifesaver, Interpretive Handcar Program for schoolchildren, the annual US National Handcar Races, living history program, interpretation aboard Amtrak trains and the Museum's steam excursion trains at Sacramento and Railtown. Others are actively involved in research, providing administrative support, maintaining the Museum's right-of-way, and much more.

Sacramento Southern Railroad

After two trial weekend operations in 1982 and 1983, the Museum's Sacramento Southern Railroad was launched in 1984. The Central Pacific Railroad Freight Depot was constructed in 1986 as the northern terminus for operation of excursion trains. Today the Museum's largely volunteer steam excursion train program handles up to 80,000 riders annually on a 7-mile, 45-minute round-trip ride from Sacramento south along the Sacramento River. The master plan envisions extending the operation over the full 17 miles of the line to the ports of Freeport and Hood so that passengers could travel one way by steam train and the other by riverboat or paddle-steamer.

Railtown 1897 State Historic Park

In 1992, the Museum assumed day-to-day operating responsibility for Railtown 1897 State Historic Park located in the California Mother Lode in the Sierra Nevada Mountains. This historic property is the closest to what Europeans call a preserved railway. The site covers 26 acres, and includes an historic roundhouse, stores dating from 1897, six steam locomotives, six diesels and more than 40 passenger cars and freight cars. Steam excursions depart Jamestown on weekends from April through October.

Museum Today

The Museum continues in daily operation today—operated by California State Parks in a strategic partnership with the California State Railroad Museum Foundation. It attracts more than 500,000 visitors annually and is Sacramento's leading tourist attraction and one of the most visited railway museums in the world. The largest single group is the some 160,000 schoolchildren who use the Museum as an extension of their classroom studies. A key partner with the Museum is the California State Railroad Museum Foundation which operates the Museum's stores and is an equal partner with the State in the daily operations. The Foundation assists in the daily operations, handles the membership program, and has made possible such key interpretive events as Railfair 1991 and Railfair '99. The Foundation is a vibrant partner with the Museum as we look forward to completing the last and by far the most ambitious component of the Master Plan—the Railroad Technology Museum.

The Historic Southern Pacific Railroad Sacramento Shops

The Museum had long eyed the adjoining SP Shops as a site for the Railroad Technology Museum but the economics, politics and current rail operations made this vision seem impossible. Shortly after Union Pacific (UP) acquired the Southern Pacific Railroad in 1996, UP concluded

Inside the roundhouse area of CSRM, guests are invited to step aboard several exhibits including a Pullman-style sleeping car complete with night-time lighting, motion and sounds, and a dining car filled with railroad china. (CSRM)

that the Railroad Technology Museum could be the highest and best use of the historic SP Shops that date to the 1860s. The SP Shops are indeed an historic complex where giant steam locomotives were built and diesel-electric locomotives were later rebuilt. Clearly they are the most appropriate site for the Railroad Museum's final phase—the Railroad Technology Museum.

Sacramento and Transcontinental Railroad

Shipment of goods in sailing ships from the east coast around Cape Horn to California took many months. Located far from the eastern centers of industry, the strongly self-reliant California merchants decided to found a railroad and on 8 January 1863, ground was broken on the levee next to the Sacramento River in Sacramento for the Central Pacific Railroad, a company already recognized by the US Congress as the western link in the Transcontinental Railroad.

Sacramento was already a major shipping point for the region, with goods and materials coming up river in steamboats and smaller sailing vessels from the deep-sea port of San Francisco, making Sacramento the logical starting point for construction of the western leg of the Transcontinental Railroad. The completed railroad served San Francisco directly (via a ferry from Oakland), but initial construction was eastward from Sacramento.

Just north of downtown Sacramento was a marshy area where the American River joined the Sacramento River. This land was acquired by the Central Pacific Railroad as the site for its general workshops. Construction of permanent buildings started in 1868 and expanded over the years to cover more than 240 acres of land in the heart of Sacramento. The owners of the Central Pacific soon began acquiring ownership of other California railroads. The most significant of these was Southern Pacific. While remaining independent companies, operations of the different lines were coordinated. In 1885, a new holding company called the Southern Pacific Company, was formed to control the various railroad holdings of the owners. Operating companies were variously sold or leased to the new holding company, including both the Central Pacific and the Southern Pacific railroads. The SP Shops were officially the Central Pacific Shops prior to 1885, but became the SP Shops in the reorganization.

Innovative leader

The early complex was under the leadership of General Master Mechanic A. J. Stevens (1833–88). Hired in 1870, he oversaw development of the facility and many pieces of machinery and equipment were designed and constructed in the shops.

Facilities included the erecting shop, boiler and tender shop (including a riveting tower), blacksmith shop, brass and copper shop, foundry, rolling mill, spring shop, car shop, planing mill, paint shop, 29-stall roundhouse, etc. These covered the basic functions but expanded greatly in size over the years.

Under Stevens, the Central Pacific Shops constructed several series of locomotives, featuring unique design characteristics developed by Stevens and his team. Stevens was an innovator, working to advance the steam technology of the day and quickly adopting important innovations from others as well. Locomotive construction at Sacramento relied on the support of the railroad owners and was always influenced by the cost and availability of locomotives from the east-coast commercial builders.

The earliest group of locomotives built under Stevens was 14 sturdy 4-4-0 engines completed between 1872 and 1874. One—V&T Railroad No. 18—is preserved by the Nevada State Railroad Museum in Carson City, Nevada. When the cost of locomotives from commercial builders dropped, Sacramento production was suspended temporarily.

Unique locomotive designs

In 1881, Stevens designed a 2-6-2T locomotive specifically to haul commuter trains around Oakland and Alameda in the Bay Area. A total of seven were constructed in Sacramento in late 1881 and early 1882. Central Pacific No. 233 is a survivor from the original seven and has been acquired recently by the CSRM. Between 1882 and 1885, Stevens produced experimental locomotives to test some of his innovative ideas. The first was Central Pacific No. 229, a 4-8-0 completed in April 1882 for hauling heavy freight through mountains. It was very successful and between December 1882 and January 1884, the Cooke Locomotive & Machine Works constructed 24 to the same design for the Southern Pacific. These were the only Stevens-designed locomotives built by a commercial builder.

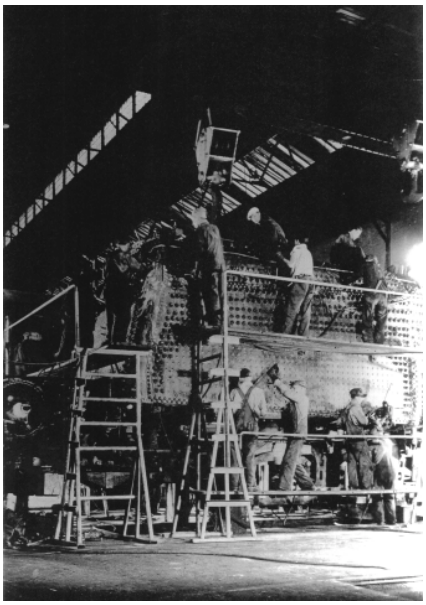
Several features were characteristic of Stevens' production locomotives in the 1880s. Most notable was the Stevens patent valve gear, a variation on the Walschaerts design adapted for separate lead and cut-off motion. Stevens also used exceptionally long cylinders in relation to cylinder diameter. For example, the 4-6-0 cylinders had an 18" diameter with a 30" stroke. The locomotives also used radially stayed boilers instead of the almost universal crown bar boilers common in American railroading at the time.

Car department competing with commercial builders

Master Car Builder Benjamin Welch (1880–1913) directed operations in the carriage department. Welch had been one of the first workshop employees hired

by the Central Pacific in the early 1860s and continued as head of the car shops until after the turn of the 20th century. The shops built a few passenger cars in the late 1860s, including the business car that carried the Central Pacific dignitaries to the Transcontinental Railroad Completion Ceremony at Promontory Summit, Utah, on 10 May 1869. The car was sold to V&T in 1875 and later converted into coach No. 17. Amazingly, it survives today in the collection of the Nevada State Railroad Museum. Another group of passenger carriages was constructed in the mid-1870s, but passenger cars were generally purchased from commercial builders.

On the other hand, many head-end cars (baggage and postal) were built in the shops throughout the 19th century. Freight wagons were the bread and butter of car construction in both the 19th and 20th centuries. The shops competed with commercial builders for contracts to supply Southern Pacific and there were many production runs.



Inside the boiler shop at the SP Shops, a huge cab-forward steam locomotive is getting a complete overhaul. This engine is virtually identical to the last preserved cab forward, Southern Pacific No. 4294, which today is displayed at the CSRM in Old Sacramento. (CSRM)

Organizing and Systematizing

Stevens died suddenly in early 1888 and his successor, H. J. Small, was a much more conservative man. Where Stevens looked for innovation and experimented with new designs, Small stuck with the tried and true designs, even returning to crown bar boilers for new constructions. The building of new locomotives ended under Small.

If Small wasn't a mechanical innovator, he was an organizer and systematizer. Under his leadership Southern Pacific developed a set of Common Standards (which could be reasonably called the Huntington Standards in honor of the then railroad president) for locomotives, cars, parts, structures, facilities, and almost everything needed in running the railroad.

Harriman and Union Pacific gain control

C. P. Huntington (1821–1900), the last of the founders of the Central Pacific and Southern Pacific railroads, died in 1900 and E. H. Harriman (1848–1909) gained control of Southern Pacific in 1901. Harriman was already president of the Union Pacific Railroad and he unified operations of the two railroads as Associated Lines. Harriman was very impressed by the Southern Pacific's system of Common Standards and it was soon extended and expanded to encompass both the Southern and Union Pacific systems, commonly known as the Harriman Standard designs. Out of this emerged a set of Common Standard designs for locomotives, passenger cars and freight wagons, most of which were developed in the design offices of the SP Shops.

Harriman also initiated major expansions and improvements of railroad equipment and facilities. The SP Shops got their share of these expenditures. Most significantly, a new, greatly enlarged erecting shop was added to the west side of the old erecting and machine shop, and the old erecting bays became expanded machine shop space.

Southern Pacific and Union Pacific split

Harriman died in 1909 and the US Supreme Court ordered the separation of the Southern Pacific and Union Pacific systems in 1912. Nevertheless, the SP Shops continued to expand with new foundry and car shop facilities. During the shortages of WWI, new locomotive construction returned to Sacramento with a series of thirty-two 2-6-0, 2-8-0, 4-6-0, and 4-6-2 locomotives assembled between 1917 and 1920 from spares for old Harriman Standard designs.

More new steam locomotives followed with 32 new 0-6-0 switchers in 1919–23. These were followed in 1925–30 by the largest locomotives ever constructed by the SP Shops—49 modern 4-8-2 locomotives. By this time, the Shops had developed into the largest vertically integrated industrial operations west of the Rockies. The Shops had long been the single largest employer in the Sacramento area and few people were not touched by their operation in some way or other.

Decline of SP Shops

The 1929 Great Depression brought many changes to railroading and to the SP Shops. Many operations were closed never to reopen, although basic operations continued on a reduced scale. The last new steam locomotive—a large 0-8-0 switcher—was completed in 1937, the previous one having entered service in 1931.

The late 1930s saw the introduction of diesel locomotives on the Southern Pacific. New development stopped during WWII but the entire locomotive shop operation was

revised and retooled between 1945 and 1955 to service diesels instead of steam. While many ancillary shops closed, the core locomotive and car functions remained.

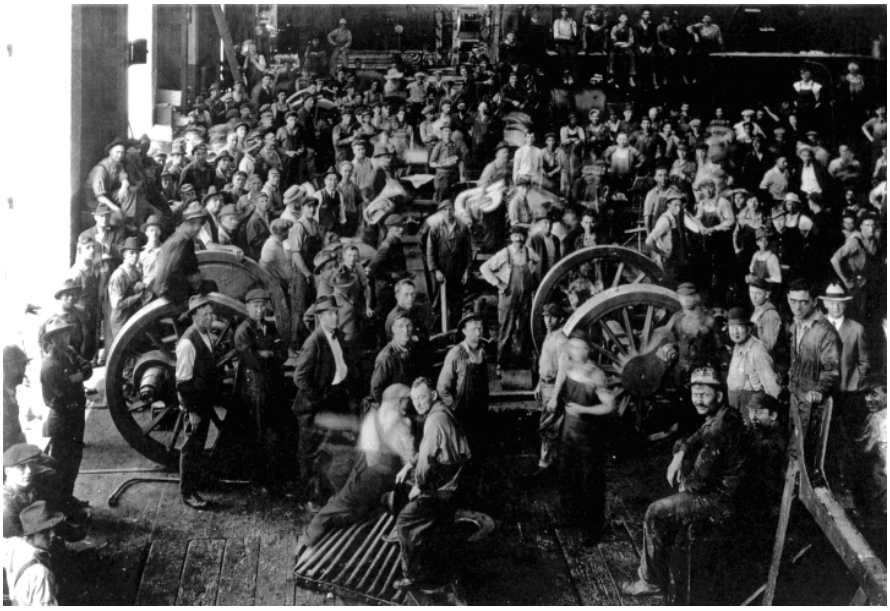
GRIP Program

From the 1970s, Southern Pacific demonstrated its shop capabilities by launching the General Rehabilitation and Improvement Program (GRIP), a comprehensive from-the-frame-up overhaul and upgrade of older diesel locomotives that renewed and recapitalized them for many more years of service.

Electrical systems were re-engineered to bring them up to then-current standards, and all mechanical systems were removed and rebuilt before reinstallation. GRIP continued into the early 1990s, working its way successively through different classes of locomotives.

Southern Pacific Purchased by Denver & Rio Grande Western

The 1980s were difficult times for Southern Pacific with a failed merger with the Santa Fe Railroad diverting resources and attention, followed by the effective purchase of the railroad by the owner of the much smaller Denver & Rio Grande Western (although the resulting company retained the Southern Pacific name). With competitors merging to form larger, stronger companies, Southern Pacific's position became weaker and weaker. This was reflected in more deferred maintenance and greatly reduced shop operations. Added to the problems was the national trend to contract out more functions that had formerly been handled internally. The operations of the SP Shops were dramatically reduced and Southern Pacific began looking at other, non-railroad uses for the site's 240 acres.



SP Shops workers paused from their labors for a lunch-time band concert inside the erecting shop on 3 July 1920. Each SP operating division, from Portland, Oregon, to Algiers, Louisiana, had its own employee band. (CSRM)

Union Pacific reacquired Southern Pacific

In 1996, Union Pacific reacquired control of Southern Pacific in a merger that extinguished the Southern Pacific name. Union Pacific moved quickly to rationalize its shops and the last operation was transferred out of the SP Shops in December 1999. At last, the adjacent CSRM saw an opportunity to develop its long-planned Railroad Technology Museum in the historic SP Shops.

Railroad Technology Museum at Historic SP Shops

The Museum's Master Plan envisioned two interlocking museums—one devoted to the social, political and economic history of the railroad in California and the western US; and the other devoted to the science and technology of the railroad industry.

Components of plan

The plan for the Railroad Technology Museum had three primary components.

First, it would provide a suitable facility in which to conduct the ongoing restoration and maintenance work. This facility would be accessible to the public through controlled environments and access with restoration and maintenance staff demonstrating and explaining tools, materials and techniques.

Second, it would provide high-quality, interactive exhibits interpreting railroad engineering and technology. Using sectioned locomotives, scale models, interactive displays, oral histories, and many other interpretive techniques, the public would be able to learn about issues such as steam and diesel technology, car design, track and structures design, local labor history, the importance of the SP Shops, and the relevance of railroading today in meeting many of our transportation challenges.

Third, it would provide much needed covered storage for our non-exhibited collection and would allow public tours of the non-exhibited collection. The collection is huge (over 200 pieces) dating from the 1860s to the present

which must be rotated on and off display. Currently, our ability to do so is limited due to physical constraints and lack of restored equipment to put on display.
The Museum would increase our ability to rotate exhibits with restored equipment, to operate more equipment as it is restored, and to provide the best possible public access to the ongoing process. The goal is to rotate displays monthly and operate demonstration equipment daily.

Site Selection and Pursuit of New Museum

Planning for the new museum began in the mid-1980s following completion of the flagship Museum of Railroad History in Old Sacramento. Site selection began with an assessment of various sites near the Museum's existing facilities in Old Sacramento and along the Museum's railroad right-of-way. At that time, the Museum approached Southern Pacific about use of the SP Shops. During merger discussions between Southern Pacific and Santa Fe Railroad, acquisition of the shops appeared to be feasible but when the merger fell through, Southern Pacific was not in a position to discuss the project. It was clear that the SP Shops could only be acquired by purchase from SP, putting the price tag for the project far out of the Museum's reach.
Reluctantly, the Museum pursued other potential sites and settled on a bare 15-acre parcel nine blocks south of the existing Museum and along the Sacramento Southern Railroad right-of-way. In the early 1990s, the Museum secured a 99-year lease on the site from the Sacramento Housing and Redevelopment Agency at a cost of $1000 per year. By 1991, approximately $1.5 million had been invested in the site to complete a feasibility study and preliminary plans for construction of a new facility to be called the Museum of Railroad Technology (MORT). The 1990s recession hit California particularly hard and many projects were scrapped. The MORT project was put on indefinite hold, although several staff members took every opportunity to keep it alive and kicking.

Grasping the opportunity

Union Pacific's 1996 acquisition of Southern Pacific presented a remarkable opportunity for the Museum to acquire the SP Shops. The prospect of being able to use these buildings to create an urban museum complex contiguous with the Old Sacramento Historic District, as well as to recreate a railroad experience presented a once-in-a-lifetime opportunity that the Museum could not allow to pass. Museum representatives met with Union Pacific officials in Pennsylvania in mid-1996 to discuss about acquiring the buildings.
By mid-1997, the Museum was holding regular meetings with Union Pacific to discuss the potential acquisition. Architects and engineers were re-engaged to assist with planning and estimating the new museum at the new site. While it would be wonderful to use the seven buildings on the site, the estimated cost was between $45 million and $90 million and was not feasible. The Museum had to prioritize its needs and determined that phasing in the entire project over time is the most sensible approach. Initial efforts have focused on the boiler shop and erecting shop as the core facilities at a more modest cost of $25 million. Other associated developments include a new Museum Store, multi-purpose space, offices, and a library and archives building and are being funded separately.
Negotiations with Union Pacific centered around transfer of the title to six or seven structures (and a land lease of sufficient length) that remain standing in the 240-acre yard. The structures themselves occupy approximately 40 acres within the yard. The Museum currently leases two structures—the boiler shop and erecting shop.

Development challenges

While the SP Shops present a tremendous opportunity for the Museum, they are not without challenges. Of primary concern is that Union Pacific is in the process of remediating the site under the directions of the Department of Toxic Substance Control. Union Pacific is bearing the remediation costs which are estimated at over $100 million but the remediation will not be completed until 2004–05. The Museum's responsibilities with respect to toxic remediation are limited. The site on which the Museum plans to place the Railroad Technology Museum has underground water reclamation issues which are being addressed by Union Pacific and should not affect public access. However, there are additional above and below ground toxic considerations that must be addressed by the Museum, such as removal of lead paint, and disturbance of contaminated ground in order to place new utility lines and sewers. Since the Museum will trench only sewer and utility lines, there are expected to be minimal costs to remediate only the trench areas.
Other challenges relate to the financial burden of acquiring historic buildings, and the many unknowns associated with their restoration and on-going maintenance. Clearly, we will not have enough initial funds to rehabilitate all seven historic structures. It will be incumbent upon us to find suitable partners for development. Our first concern has been to secure the site (primarily the boiler shop and erecting shop for our immediate needs), and to begin evaluating them in terms of their structural integrity and other critical maintenance needs. Our next step will be to acquire the buildings from Union

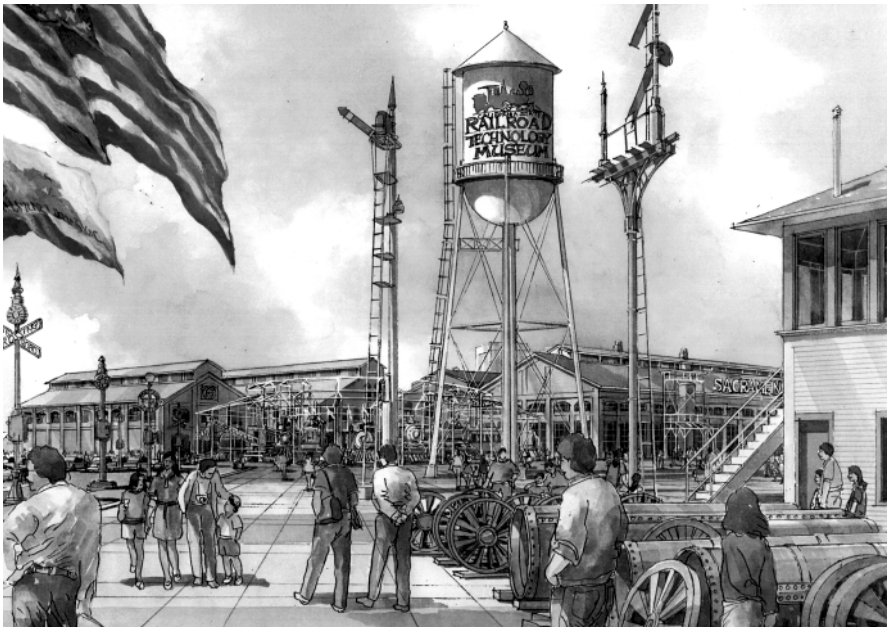
Pacific, thereby giving us maximum flexibility in how the project is financed and phased in over time.

Another challenge is that Sacramento a good deal of influence over the redevelopment of the entire 240-acre yard. The buildings cover approximately 40 acres in the southern part of the yard contiguous with the historic Southern Pacific Depot built in 1926. The political dimension of the project cannot be overstated. Several interest groups are actively lobbying Sacramento to hold off on any development of the yard to ensure that the depot remains a depot and continues to be used for passenger services.

The Depot Debate

In the mid-1990s, the City of Sacramento worked with Southern Pacific to create The Railyard Specific Plan for future development of the yard. The Plan called for the 1926 Depot to be adaptively reused for non-railroad purposes and for a new intermodal station to be constructed some distance away. After the purchase of Southern Pacific by Union Pacific and ensuing changes in the downtown Sacramento area, the Plan is outdated and no longer feasible. Union Pacific is amending the Plan for approval by the City and a vital change is relocation of the freight and passenger main line and construction of the intermodal station some 400 ft north of the 1926 Depot.

The proponents of keeping the depot unchanged are lobbying hard to keep the tracks where they are. If the tracks are not moved, the Museum's free movement between its facilities in Old Sacramento and the SP Shops would be severely restricted. Moving the tracks north is vital to the Museum, Union Pacific and other transport providers.



Artist's impression of the entrance to the proposed Railroad Technology Museum. To be located within the former SP Shops complex, the Museum entrance is also expected to feature the relocated historic Water Tower—which once supplied the entire Shops complex—plus a local signaling facility known as Elvas Tower. (CSRM)

Partnership for preservation and development

To promote the site preservation and development, the Museum has joined with Union Pacific and other transport providers to form the Sacramento Intermodal Transportation Alliance (SITA) for promoting the northern track realignment and construction of the new intermodal station 400 ft north of the existing 1926 Depot. The aim is to keep the depot as the gateway to the new intermodal station and the Railroad Technology Museum to the north. The Alliance has since grown to include the local light rail organization, the Sacramento Chamber of Commerce, the Old Sacramento Management Board, the Sacramento Downtown Partnership, and many others who are concerned about the future of transport in the Sacramento region. Clearly, the Railroad Technology Museum and its key location within Sacramento's downtown development area makes our membership of SITA and involvement in the associated local politics non-negotiable.

Alliance goals

The goals of the Alliance are to:

- Ensure that the new development can accommodate all transportation modes;
- Revitalize the downtown area;
- Link the intermodal area to adjoining neighborhoods;
- Link the intermodal station thematically to the Railroad Technology Museum to the north and Old Sacramento historic district to the west.

The SITA plan also focuses on connectivity around the downtown area. Road links between our facilities in Old Sacramento and the SP Shops, and that provide easy entry and exit from freeways and other surface streets are critical to development of the Railroad Technology Museum. The plan focuses on strong pedestrian, bicycle, vehicle, and rail access in and around the site, and preservation of the 1926 Depot as the gateway to the entire development.

Museum track access

The Museum is an advocate of northwards relocation of the track in order to achieve the level of track access required to maintain current operations

(providing charters, handling visits by rolling stock, servicing customers at the south end of our right-of-way, moving in maintenance equipment and acquisitions, holding Railfairs, etc.), to provide access to Union Pacific and Amtrak main lines, and to ensure easy access to the SP Shops. An added benefit of this new access is the opportunity for seamless integration of heritage and modern railroad operations—both passenger and freight. Comparing heritage and modern railroad operations and the ability to see both at work is a key aspect of the Railroad Technology Museum.

Financing

As mentioned earlier, financing the new facility is a challenge. However, the Museum has already secured $5 million in project funding and there are numerous funding sources available in the next year. In March 2002, a $2.6 billion Parks Bond was approved by voters. Over $300 million of the bond will be set aside for cultural development. Another initiative relating to transportation funding is possible in November. If that goes forward, the Museum will have a $7 million funding line. In addition, more federal funds are expected to be available under the Transportation Enhancement Act (TEA) and some will be available for transportation museums.

In terms of development of other buildings on the site of the SP Shops, the Museum is seeking partnerships with other compatible museum projects. The most promising candidates are the California Department of Transportation which is developing a 50,000 ft^2 museum focused on California's transportation infrastructure. Another candidate is the City of Sacramento's archives and museum facility focusing on local history. Both projects have ideal thematic connections to the Railroad Technology Museum and could develop a substantial part of the SP Shops complex, thereby reducing our obligation to rehabilitate all seven structures.

Conclusion

The Railroad Technology Museum will benefit the community in many ways. Children will be able to explore science and technology through hands on, interactive exhibits. The facility could easily support curriculum-based educational programs for teenagers and young adults. Vocational education programs could be established to provide skills training and workforce re-entry preparation. Ethnic diversity will be highlighted through ongoing study and exhibition focused on the thousands of people who once worked in the shops.

The Railroad Technology Museum is an ambitious, but critically important project in North American railway preservation. Acquisition and preservation of the SP Shops preserves one of the most important industrial heritage complexes in North America. In terms of local, regional and state-wide significance, preservation and reuse of the SP Shops will allow us to interpret the railroad as one of the two most important historical forces that shaped Sacramento, California and the West (the other was the California Gold Rush).

Our continued involvement with all the redevelopment partners and stakeholders will be paramount in the years to come. ■

This article was first presented at the international conference 'Slow Train Coming: Heritage Railways in the 21st Century,' held in York in September 2001.

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