

A Casualty of War

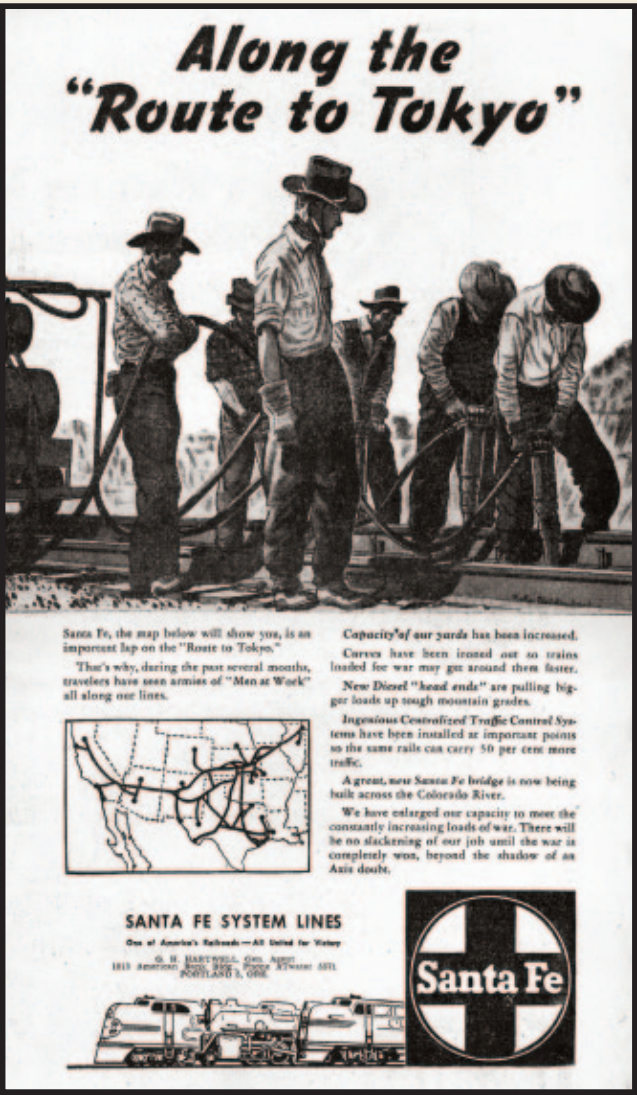
The narrow-gauge Newfoundland Railway ran for 906 miles clear across the island but required a ferry to connect with the rest of North America. A ferry from Port aux Basques, on the southwest tip of Newfoundland, sailed daily to North Sydney on Cape Breton Island, Nova Scotia, a distance of 100 miles. At this time Newfoundland was a British colony and not part of Canada.

At 3:30 AM on 14 October 1942, as the ferry was making its usual crossing, it was torpedoed by a German submarine, U-69, which blew a gaping hole in its side, sending the ship to the bottom five minutes later. Some 136 men, women, and children perished out of a total of 237 passengers and 45 crew. It was the worst attack on civilians in North America during the entire war.

The corvette HMCs Grandmere, which had been assigned to protect the railway ferry, was immediately on the scene but was unable to locate the submarine. After the war, German records showed that it had lurked under the area where the survivors were in the water, knowing that the corvette would be reluctant to release depth charges there.

MAP 329 (above, left). A 1929 map of the Newfoundland Railway and its mainland connection. It accompanied an advertisement for the railway's steamer Caribou (above, right).

Below. A 1942 photograph of the ill-fated railway ferry, taken just before it was sunk.



MAP 330 (above). This 1945 advertisement for the Santa Fe depicted the road as a critical link to the Pacific, where the war effort would be concentrated following the defeat of Germany, and lauded the efforts of its maintenance workers, whose role was often not as obvious as that of the train operators.

MAP 331 (below). This kind of advertisement abounded as the war ended and railroads faced the logistical challenge of returning thousands of military personnel home. This one, published on 19 September 1945, is from the Wabash Railroad, marketed as Serving the Heart of America.



MAP 332 (above). Another fine Alco industry advertisement, this time for its powerful 4-6-6-4 Challenger-type articulated locomotives, featured on a map of the Northern Pacific, which had ordered eight more of them. The massive locomotives, as used on the Northern Pacific, were larger than those used on the Union Pacific and had bigger fireboxes to enable them to burn low-grade lineside coal. They were used mainly for hauling freight but were used occasionally on passenger trains. They were the last steam locomotives ordered by the Northern Pacific before the company switched to diesels. Alco delivered a total of 252 of them to American railroads. Alco's Challenger variants, the famous "Big Boys" operated by the Union Pacific, were the largest of all American steam locomotives.

MAP 333 (right). Published on 11 June 1945, after V-E Day but before V-J Day, this well-thought-out symbolic map shows America's railroads converging on the Pacific, firing like big guns across it to the remaining enemy—Japan. The advertisement, published by the Western Pacific, was designed to cement the patriotic feelings many American now had for their railroads; they had been an invaluable part of the supply chain necessary to win the war.



# A THOUSAND GLORIOUS TOMORROWS

Following World War II the railroads faced the future with renewed optimism. They had come through the war years with flying colors, bending under the strain sometimes, but not breaking, and were even making a profit again. Like the Rock Island (illustration *below*), they looked forward to “a thousand glorious tomorrows.”

Yet, as with the Rock Island, trouble lay ahead. There seems to have been a general failure to see that the war had forced shippers and passengers alike to use the railroads, and that the trend to the automobile, the truck, and the new competitor, the airplane, would renew itself in the years ahead. Indeed, the railroads seemed to have a particular disdain for aviation, for it seemed that a noisy piston plane would never be able to compete with their luxury streamliners. That, of course, all changed in 1958 when the first jet entered service.

The period from 1945 to 1970 was one of slow decline. After an initial burst of enthusiasm it became clear to the railroads that they

*Below.*  
Epitomizing the postwar optimism of the North American railroads was this advertisement from the Rock Island, published in 1945. The Rock Island’s “glorious tomorrows,” however, did not live up to their billing, and the company survived only thirty-four more years; by March 1980 the railroad was gone, a victim of government regulation, inept management, and competition (see page 200).



**...into a Thousand Glorious Tomorrows**

*Across to the land of tomorrow and down, where the tomorrow give promise and strength to those who dare to look ahead, work and have faith.*

*At the beginning of this new year we remind you that the ROCK ISLAND LINES has earned and grown with America. We are proud of our 40 years of work and progress through peace and war, prosperity and depression. . . . always with faith in the future of America and its progressive people.*

*But tomorrow is important only because it gives us enough to plan for our tomorrow. And ROCK ISLAND LINES has plans for tomorrow . . . increasing and ambitious.*

*ALL America is planning, now. Tomorrow and down will be rewarded by more glorious tomorrow; a nation grows even greater with ever higher standards of life, comfort and happiness.*

*ROCK ISLAND LINES, against a backdrop of peace and glorious progress, pledges that it shall take a hand in providing the better future you are hoping for. All of us planning and working together, dreaming and doing, will prove that more than America can make its dreams come true.*

*As yesterday—and today—so tomorrow ROCK ISLAND LINES sole purpose is to provide the finest in transportation.*

**Rock Island**

**ROCK ISLAND LINES**

ONE OF AMERICA'S RAILROADS—BUILT FOR THE FUTURE

Keep it in mind...

The **B&O** is the Way to Go!

MAP 334 (*above*).  
The renewed optimism and profitability of the railroads brought forth a plethora of often highly innovative advertising aimed at building railroad business, a selection of which is reproduced on these pages and overleaf. This one, from the Baltimore & Ohio, was published in 1946.

were unable to compete on the uneven playing field that outdated government regulation had created and their own conservative business strategies had abetted, and most had neither the inclination nor the investment capital to maintain or improve their services. The decline culminated in 1970 with the bankruptcy of the largest railroad system, the Penn Central, which itself had been created from failing railroads two years before (see page 192).

Then followed a period of government intervention and, most importantly, deregulation, which allowed the railroads to compete anew, making it worth their while to invest in new facilities and operate efficiently. The seminal events were the government takeover of passenger services, in 1971 in the United States and 1978 in Canada;



MAP 335 (*left*).  
In 1946 the Norfolk & Western released a number of “illustrations-in-a-map” such as this one of Ohio. Each highlighted the resources and industry of one of the states served by the road.

*Right.* This 1953 ad from the Southern announces the end of steam on that system.

MAP 336 (*below, bottom*).  
The railroad system as freight. This innovative advertisement from the Missouri–Kansas–Texas Railroad, known as the Katy, appeared in 1946. The road’s main line is marketed here as the *Main Street of the Southwest*, though it was hardly in the Southwest.

**He's putting out a fire we started 123 years ago!**

**THE 3,000-mile Southern is now the largest railway system in the country to be 100 per cent Dieselized.** We've "pulled the fire" on our last steam locomotive. In effect, this fire was started back in 1830—when history-making *First Friend of Charleston*, one of the first steam locomotives to run in regularly scheduled service in America.

Down through the years since 1830, the colorful steam locomotives passed the progress of the South, serving well until they, too, had to step aside for progress. Today we are serving the South with a fleet of 800 powerful Diesel locomotive units costing \$123 million. This huge investment in modern power marks our faith in the future of the South, and endorses our determination to provide a great new kind of railroading—modern, streamlined, progressive, better than even—for the fast-growing areas we are privileged to serve.

*Harry A. D. Butler*  
President

**SOUTHERN RAILWAY SYSTEM**  
WASHINGTON, D. C.

the creation of Conrail, in 1976; and the deregulation of the industry, in 1980. These events, coupled with the emergence of new technology and operating practices, notably the rise of intermodal freight, led to the thriving—but much smaller—rail-road industry of today.

Probably the most destructive factor in the initial decline of the railroad industry was over-regulation. In the days when the railroad was an omnipotent monopoly, regulations were needed for the public good, but as the monopoly eased, so should have the regulatory environment. But it got worse—from the railroad point of view. The 1906 Hepburn Act had given the Interstate Commerce Commission almost complete power over railroads; they could not cut a train nor add one, abandon tracks that were uneconomical, or increase—or even decrease—their rates without icc approval. And the icc required that railroads cross-subsidize their money-losing passenger services with their sometimes profitable freight.

The labor situation was also difficult, with some rail unions so powerful they virtually controlled what the company could do. Trains were overstaffed, and railroads could not take proper advantage of new technology. The classic example of this inefficiency was with the new diesels: until the 1960s they still had to have a fireman on board even though the position was totally redundant.

**How to be a Business Hero**

The forward-looking executive who is the first to see and advocate the tremendous strategic advantages of a plant, branch plant or warehouse in the new industrial Southwest is bound to win the approbation of his firm.

The Southwest is “open country” for business enterprisers... a bustling land where markets, materials and manpower meet. Here is to be found every advantage for industrial expansion—vast and varied reserves of raw materials, power, water, fuel—willing labor, sharpened by wartime skills—rich home markets.

**How to Start...**  
Send for the booklet, “The Industrial Southwest,” packed with essential data on population, housing, climate, radio resources and industrial opportunities in the Katy corridor making areas selected by U. S. Dept. of Commerce to present outstanding prospects for peacetime prosperity.

**Main Street of the Southwest.** The Katy publishes this advertisement because it is the “heart” of the progressive cities of the Southwest. The Katy serves the Southwest well because it has only the Southwest to serve. . . . does not cut across a down stream. . . . but is a clearly-built, friendly, Class “1” railroad, devoted exclusively to the development of its strategically-located Southwest corridor.

**Katy Building** 1001 Texas Ave., Dallas 2, Texas.

**Missouri-Kansas-Texas Railroad System**

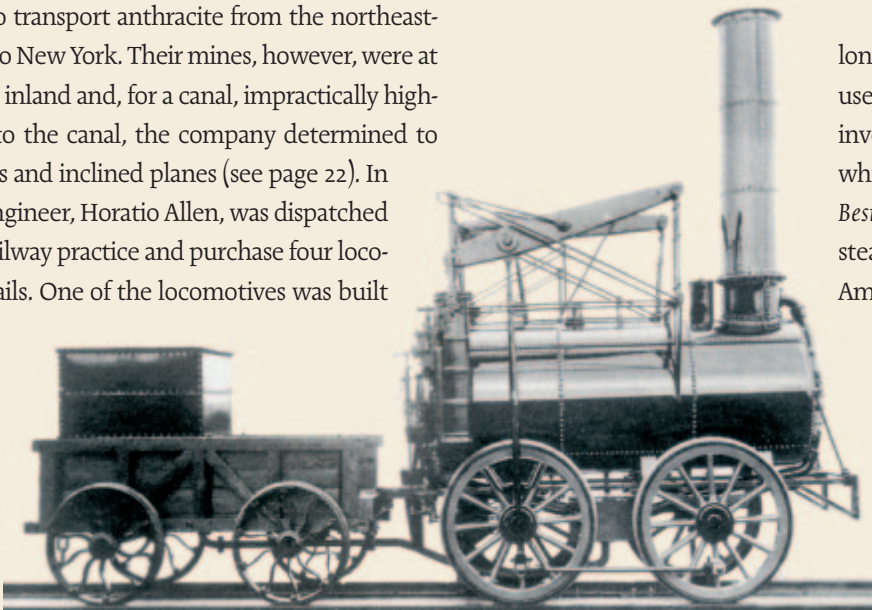
# LOCAL LINES



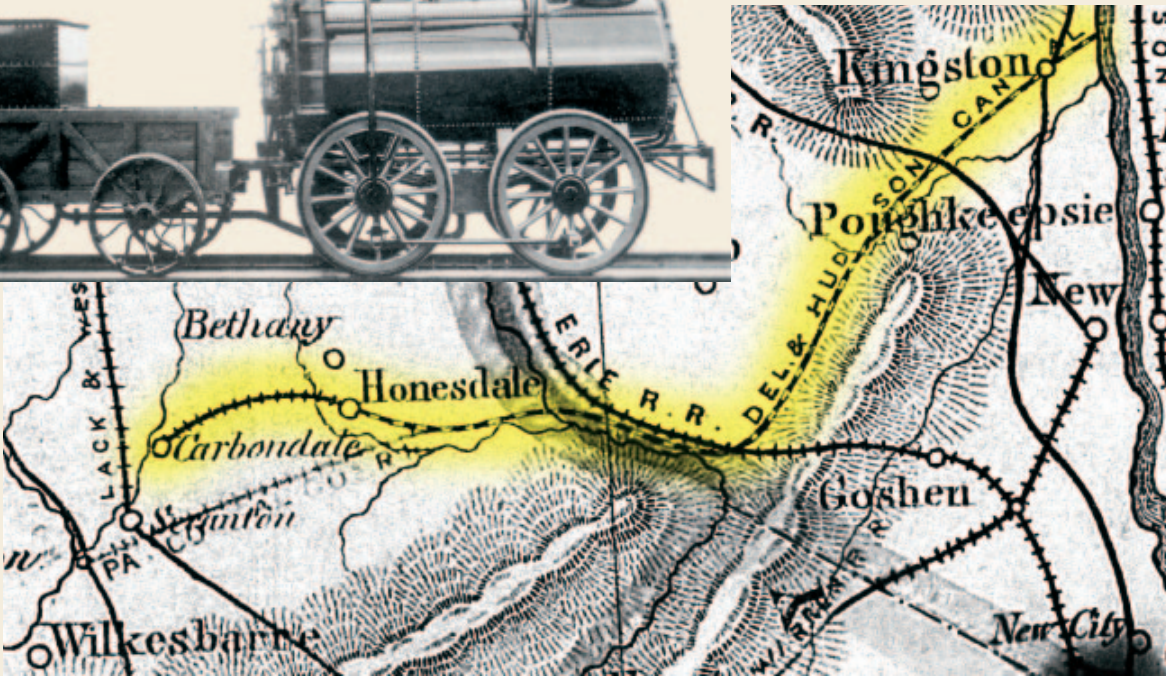
Most of the first railroad lines in North America were portage lines that connected either two waterways or an inland place with a navigable waterway. They overcame a geographical difficulty more efficiently than the usually horse-drawn alternative but did not compete with the more established water routes, which were already quite efficient at transporting both freight and passengers—though slowly. No thought was given at first to any sort of network.

## HORATIO ALLEN’S MAD RIDE

The Delaware & Hudson Canal Company completed a canal in 1828 from Rondout Creek, which flowed into the Hudson River, and Honesdale, on the Lackawaxen River, to transport anthracite from the northeastern Pennsylvania coalfields to New York. Their mines, however, were at Carbondale, 16 miles farther inland and, for a canal, impractically higher. To carry the anthracite to the canal, the company determined to construct a series of rail lines and inclined planes (see page 22). In 1828 their young assistant engineer, Horatio Allen, was dispatched to England to learn about railway practice and purchase four locomotives and strap iron for rails. One of the locomotives was built by Robert Stephenson and three by Foster & Rastrick of Stourbridge. Two were destroyed in a fire. One, dubbed the *Stourbridge Lion*, was assembled by



MAP 25 (right). The Delaware & Hudson’s 1829 line from their mines at Carbondale to their canal at Honesdale is shown on this 1854 map. The line, and that of the Delaware & Hudson Canal, has been highlighted in yellow and the rest of the map—showing lines not existing in 1829—rendered in gray-scale. The locomotive, inset, is the *Stourbridge Lion*, one of four manufactured in England for the company, but the *Lion* was the only one ever run. The inclined plane at Honesdale is shown on page 22.



Left. Early locomotive and carriage style is well illustrated by this photograph taken at the Fair of the Iron Horse, a celebration of the centennial of the Baltimore & Ohio Railroad. Original locomotive *Andrew Jackson*, rebuilt in 1892 to resemble the *Atlantic*, a Grasshopper-design locomotive that entered service in 1832, pulls two replica passenger cars, the design of which is not far removed from that of stagecoach bodies. The original coaches were made by Richard Imlay, a Baltimore carriage builder.

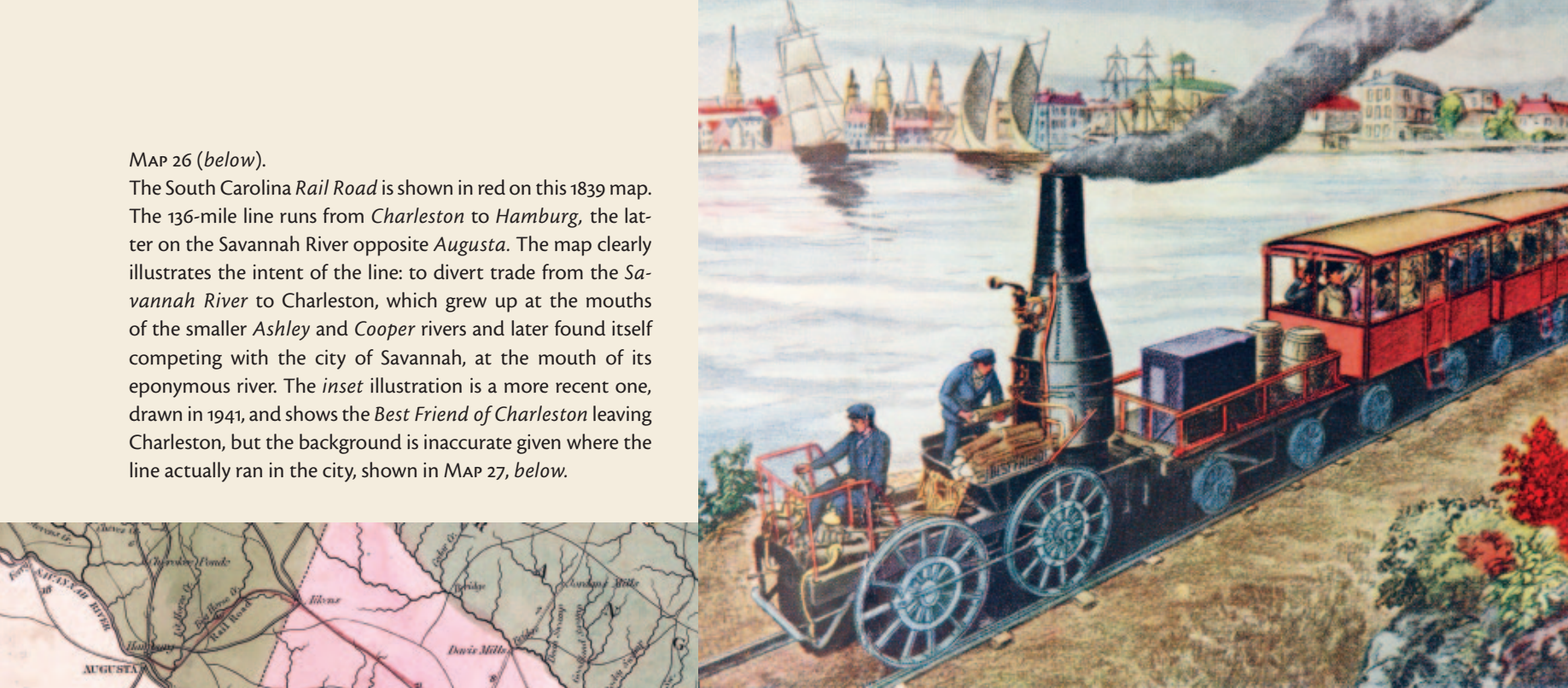
Allen and prepared to run on track laid near Honesdale. There, on 8 August 1829, Allen opened the regulator of the first commercial locomotive to travel on a railway in North America and charged off on a hair-raising trial run covering 3 miles. Unfortunately the uneven iron-strap track proved not up to the task of guiding a 7-ton steam locomotive and was nearly destroyed. The *Stourbridge Lion* was converted to a stationary engine and used to power the ropes hauling wagons up one of the inclined planes.

## CHARLESTON’S BEST FRIEND

Knowledge of Allen’s expertise spread. He was hired soon after by the South Carolina Canal & Railroad Company, which planned a rail line between Charleston and Hamburg, the latter on the Savannah River opposite Augusta, Georgia. Augusta had become a transshipment point for freight traveling down the river to Charleston’s larger rival city Savannah at the river mouth, and Charleston merchants hoped to siphon off some of this business for themselves.

The line was to be 136 miles long and would be excellent for the use of steam locomotion. Allen was involved in designing a locomotive, which was built in New York. His *Best Friend of Charleston* was the first steam locomotive built in North America. On Christmas Day, 1830,

MAP 26 (below). The South Carolina Rail Road is shown in red on this 1839 map. The 136-mile line runs from Charleston to Hamburg, the latter on the Savannah River opposite Augusta. The map clearly illustrates the intent of the line: to divert trade from the Savannah River to Charleston, which grew up at the mouths of the smaller Ashley and Cooper rivers and later found itself competing with the city of Savannah, at the mouth of its eponymous river. The inset illustration is a more recent one, drawn in 1941, and shows the *Best Friend of Charleston* leaving Charleston, but the background is inaccurate given where the line actually ran in the city, shown in MAP 27, below.



MAP 27. The city of Charleston in 1844, showing the Sou Ca Rail Road entering the city.





MAP 30 (above). Detail of the Belmont inclined plane on the Philadelphia & Columbia Railroad on an 1835 map (the whole map is MAP 42, page 28). This is just west of Philadelphia, and the plane climbs the west bank of the Schuylkill River. The plane is  $\frac{1}{2}$  Mile long and climbs 180 F<sup>t</sup>. Actually it was 2,805 feet long and rose 187 feet, a 1 in 15 gradient. In 1836 the Norris Locomotive Works tested a locomotive named *George Washington*. The 14,400-pound locomotive pulled another 19,200 pounds, including twenty-four people, up the incline, thus for the first time proving that steam locomotives could pull loads up ascending grades. Later trials were successful with even greater loads. The route, and the inclined plane, were abandoned in 1850.



Above, left; above; and MAP 31 (below). The inclined plane of the Delaware & Hudson Railroad at Honesdale, Pennsylvania; the photos are dated 1898, and the bird's-eye-view map of Honesdale was published in 1890. The photos show the transition point at the bottom of the inclined plane; the shed with open doors is visible in both. The point at which the photos were taken is about one-third of the way from the right of the bird's-eye map, where the bridge crosses the canal. The plane proceeds along the bottom of the map to the smokestacks in the foreground, the leftmost of which is probably the winch house. The Delaware & Hudson, originally a canal company, built numerous inclined planes in the difficult topography of eastern Pennsylvania, and some continued to be used until the end of the nineteenth century.

## The Inclined Plane

Inclined planes offered an easy solution for early railroads seeking to overcome grades too steep for normal operation. The train, usually broken into short sections, would be hauled up the incline by a cable driven by a stationary engine at the top. While getting all the elevation gain over in one go made sense for early trains, which proceeded slowly in any case, the process was very time consuming, and the inclined planes required a lot of maintenance and were labor-intensive. All these factors added up to increased cost, and most railroads phased out inclined planes as soon as they could build an alternative route. One exception was three contiguous inclined planes on the Central Railroad of New Jersey at Ashley, near Wilkes-Barre, Pennsylvania, originally built by the Lehigh & Susquehanna Railroad in 1842–43. Although passenger trains were diverted to another track as early as 1867, freight continued to be hauled up the three inclines until 1948.



The directors were sold on the idea. Early the next year they announced their own locomotive trials, getting the idea from the Rainhill experience (see page 17). The competition was won by *York*, another Grasshopper-type engine that would soon be superseded by the British *Rocket* type. Another Grasshopper, *Atlantic* (see photo, page 18) was added the following year.

## AROUND THE LOCKS

The difficulty at this early stage was designing locomotives that could run on rather flimsy track without destroying it. In 1831, when New York's first railroad, the Mohawk & Hudson, brought in a Stephenson locomotive from Britain, it tore up the metal-strap-topped line. The railroad's chief engineer, John Jervis (who had been Horatio Allen's chief at the Delaware & Hudson) designed a new locomotive and had it built by the West Point Foundry in New York. It was the *DeWitt Clinton*, named after the governor of the state—and one of the principal supporters of the Erie Canal. Jervis did not last long at the Mohawk & Hudson, being fired for importing the useless Stephenson locomotive, but the following year developed a very important improvement in American locomotive design—a pivoting front bogie ahead of the driving wheels to both distribute and guide the weight of the locomotive around sharp bends so that it stayed on the rails. This element of design stayed with North American steam locomotives to the end.

The Mohawk & Hudson was conceived by local entrepreneur George Featherstonhaugh, who, for apparently personal reasons, withdrew from the project before its completion. The road was seen as a shortcut around the string of locks required to bring the Erie Canal down to the level of the Hudson River—one that passengers would take, at any rate, as it would save many hours. Ironically, the railroad itself had to use inclined planes

MAP 32 (below). This detail of MAP 21, page 13, is a French map published in 1834 to show the route of the Erie Canal, but it also shows the line of the shortcut—the *Chemin de Fer* of the Mohawk & Hudson Railroad.



MAP 33 (above). The line of the Mohawk & Hudson Railroad from Albany, on the Hudson River, and Schenectady, in the valley of the Mohawk River, is shown on this 1834 map. The poster (left), from the same year, advertises the connection with the railroad at Schenectady, using the Erie Canal.

MAP 34 (below, bottom). By 1845 the line had been diverted around inclined planes that were originally used to tackle the gradients up from the two river valleys; the old track is labeled *Abandoned*.

Below is a wonderful photograph of a replica of the *DeWitt Clinton* and its stagecoach-like coaches, just as it would have appeared in 1831.



# A RAILROAD WAR

Railroads completely transformed the face of war. Before the rail road, armies had to live off the land, and they lived or died by what they could carry with them or scavenge locally. Rail lines linked armies with sources of supply and connected factories with the battlefield. Ammunition, more guns, reinforcements, food, and everything else could now be delivered to the battle as demanded, and the wounded could be more speedily evacuated. The logistics of the movement of armies changed forever. Military strategy had to radically change to account for this new speed. It was not sufficient to consider the manpower immediately available to both sides; now other troops and firepower that could be delivered to the battlefield from quite a distance also came into play.

During the Civil War the railroad advantage was demonstrated for the first time. And because the North had more railroads, a more developed network, and generally better infrastructure, especially better track quality, the South was at a major disadvantage right from the beginning. The North was more industrialized than the South, and the railroads allowed it to easily exploit this fact. The Southern strategists knew at once of their inadequacy; it was no coincidence that Stonewall Jackson moved within days of the start of the war to destroy as much railroad track, bridges, and equipment as he could in a bid to isolate the South from the northern railroad web. The strategic bridge over the Potomac at Harpers Ferry, destroyed first by Jackson, was blown up and almost as speedily rebuilt no fewer than seven more times during the course of the war. Fast bridge rebuilding developed into a critical military facility.

MAP 91 (below).  
The Winchester & Potomac R.R., built along the valley of the Shenandoah River, joins the main line of the Baltimore & Ohio at Harpers Ferry. The critical bridge across the Potomac is shown on this 1863 map; it was destroyed and rebuilt eight times during the war.



Above.  
This massive rail-borne mortar nicknamed “The Dictator” was rarely used during the Civil War because of its weight—17,000 pounds—but in July 1864 the railroad made it possible to move it within range of the Confederate lines surrounding Petersburg. The mortar could fire a 200-pound exploding shell at a target 2 miles away.

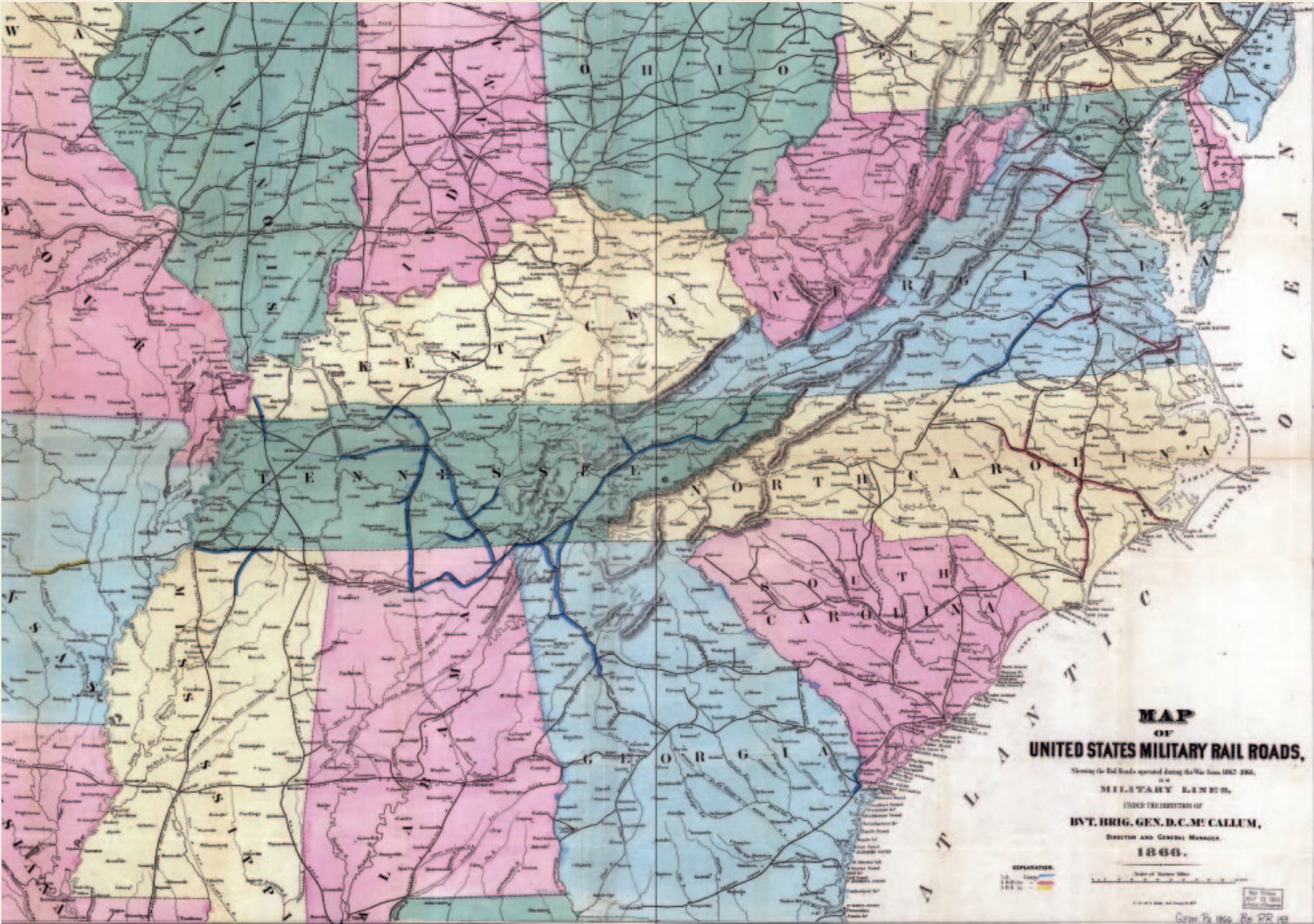
The railroad led to the development of trench warfare, a military strategy that was to reach its apex fifty years later during the First World War in France. It was first used in the Civil War as the Union armies approached Petersburg, Virginia, in 1864. The only way for the Southern army to begin to deal with the North’s ability to deliver more and more materiel to the battlefield was to dig in, and dig in they did, creating fields of trenches from which they were difficult to dislodge.

Despite its ability to deliver troops and equipment quickly, the network of lines in the South by 1861 was still quite thin, so there were many places where the railroad played no local strategic role. But both sides learned how to transport large numbers of troops to battles. In July 1862 the Confederates transported about 30,000 troops from Tupelo, Mississippi, to Chattanooga, Tennessee, within a week—nearly 800 miles using 6 railroads. Similarly, a year later the Union conveyed 25,000 the 600 miles to Chattanooga from Washington in 12 days using some 30 trains. Clearly the railroad made a major difference to the way war was fought.

Hindered by the different gauges encountered on many Southern roads, the Union set up the United States Military Railroad in 1862, placing it under the command of General Herman Haupt, a onetime professor of

mathematics and railroad engineer who from 1856 to 1861 was chief engineer for the Hoosac Tunnel project (see page 32). Haupt and his men became adept at repairing track and bridges in a hurry, and also at devising many devious methods of destroying lines so that the enemy could not easily restore them. Levers

MAP 92 (below).  
This map was published after the end of the war to show the mainly Confederate lines that had been operated by the U.S. Military Railroad, first established in 1862 under General Herman Haupt. The all-important gauge is indicated by color: red lines are the Northern standard 4 feet 8½ inches; blue and yellow are Southern 5-foot or 5-foot 6 inch lines.



Above.  
Confederate troops under Lieutenant General James Longstreet arriving with their cannon at Ringgold, Georgia, on the Western & Atlantic Railroad, on 18 September 1863. The troops would march west to participate in the Battle of Chickamauga, about 5 miles away. They made a critical difference. The battle, which raged for two days, was a Confederate victory. The ability of railroads to rush reinforcements to a battlefield was one reason why they were so important.