RAIL FENCES. For many years following the first settlement in America, rail fences were common. Easily split tree trunks were abundant, and an ax was the only tool necessary to make rails and fence. Pine, oak, and chestnut were favorite woods for rails, the tree trunks being cut into 11-foot lengths about 4 or 5 inches thick. A 10- or 12-inch log would make five or six rails, all three-cornered; a 20- or 24-inch log would turn out twelve to eighteen rails, those next to the heart of the log three-cornered, those outside four-cornered. In a snake, or worm, fence, the ground rails, laid zigzag, were the "worm"; the top rails were the "riders." The worm zigzagged across the line 2 feet or more on each side, the fence thus covering a strip of land 5 feet wide. If stakes were dug in at the corners to support the riders, they toed out still farther. In a cap fence, upright stakes (posts) clamped each corner, and the worm was more nearly straight. The caps were short clapboards, with an auger hole in each end, fitted down over the tops of the posts, holding them together. The best rail fences were straight on the line, with the ends of the rails mortised into heavy posts. Soldiers in the Revolution, the War of 1812, and the Civil War found old dry fence rails handy for campfires and burned millions of them.

JOHN W. WAYLAND

RAILROAD ADMINISTRATION, U.S. In April 1917 railroad executives formed the Railroads' War Board to achieve a coordinated "railway system" for the World War I emergency. There resulted some pooling of freight cars and coal supplies, but without governmental intervention it was difficult to unify other transportation resources and almost impossible to obtain adequate financial assistance. Therefore, in December 1917 President Woodrow Wilson, in a proclamation authorized by an act of Aug. 29, 1916, established the Railroad Administration to control and operate all rail transport for the duration of the war. These facilities were "leased" by the government and eventually comprised 532 properties with 366,000 miles of track, valued at $18 billion. Terminal companies, an express company, and certain coastal and inland waterways and piers were included, but not street cars, interurban lines, or industrial railroads. In general, the personnel and administrative machinery of each property were retained, under the direct charge of a federal manager, usually an officer of the corporation. Operations were coordinated by regional directors, who in turn were under the director general (William Gibbs McAdoo, former secretary of the Treasury, and, later, railroad lawyer Walker D. Hines) and a central administration at Washington, D.C.

This episode of government enterprise was intended to be an emergency military measure to help win the war and was not regarded as a Socialist experiment. Certain efficiencies and economies did result, and competitive wastes were eliminated by centralization and standardization. Unified terminals were organized, notably at Chicago, and a "permit system" prevented loading until assurances for unloading were given by shippers. Locomotives and freight cars were standardized, and the purchasing of equipment and supplies was centralized. Repair shops and maintenance were pooled. A coal zoning plan helped to eliminate fuel wastes (*see* Fuel Administration). Passenger service, while discouraged because of the war, was unified by such devices as consolidated ticket offices, the universal mileage book, and standard ticket forms and baggage rules. Finally, advertising was eliminated and statistics were standardized. Expenditures totaling $1.12 billion were made by the government, mostly for additions, betterments, and equipment. By the act of Mar. 21, 1918, stockholders and bondholders were guaranteed compensation equal to the average annual net operating income during the preceding three years, 1914–17. Wages were generally increased, and the administration formally recognized the eight-hour day for 2 million railroad employees. In March 1920, sixteen months after the armistice, the railroads were returned to private management under the supervision of the Interstate Commerce Commission and in accordance with the Transportation Act of 1920.

[F. H. Dixon, *Railroads and Government, 1910–1921;* W. D. Hines, *War History of American Railroads.*]

MARTIN P. CLAUSSEN

RAILROAD BROTHERHOODS. The traditional pattern of union organization in the railroad industry has been along multiple craft-union lines. As late as 1970 there were more than thirty separate unions representing the approximately 800,000 railway workers of the nation. Historically, the unions have been divided into two groupings: the operating employees, who are involved in the physical movement of trains, and nonoperating employees, an amorphous group composed of workers who fall into numerous classifications.

The five major brotherhoods of the industry (the "Big Five") have been the operating unions: locomotive engineers (founded in 1863), railroad conductors

(1868), locomotive firemen and enginemen (1873), railway trainmen (1883), and switchmen (1894). Early efforts by Eugene V. Debs to unify the separate crafts into a single body, the American Railway Union, were aborted by the Pullman strike of 1894. Until the 1960's each union largely went its separate way. With the introduction of major technological changes into railroad operations, the extensive consolidation of once-competing lines, and the increasing use of other modes of transportation by travelers and by freight shippers, railroad employment began a secular decline after World War II. To overcome their weaker bargaining structure and to reduce the numerous jurisdictional disputes that were the inevitable result of employment contraction, four of the operating brotherhoods departed from their past pattern by merging on July 1, 1969, into the United Transportation Union. With only the locomotive engineers remaining aloof, the new union represented about 87 percent of the operating employees of the industry.

The original impetus for collective organization was the establishment of mutual life insurance and accident benefit programs. The inordinately high frequency of job-related deaths and injuries that plagued railway operations—especially in the early years—made such protective arrangements naturally attractive to large numbers of workers. Regular commercial companies, because of the high risk factor, offered such insurance only at high rates, if at all. Subsequently, the brotherhoods became more fraternal in purpose and, ultimately, assumed the character of business unions, focusing on wages, hours, and working conditions.

Once touted as the aristocracy of the American union movement, the operating brotherhoods earned a well-deserved reputation for militancy. Aside from the bitter conflicts between them, the militancy derived from the industry's history of making wage cuts during depressions, the use of militia to quell strikes, the frequent issuance of labor injunctions by courts, and the pervasive hostility of railroad management toward worker organizations.

[Jacob J. Kaufman, *Collective Bargaining in the Railroad Industry;* Reed C. Richardson, *The Locomotive Engineer 1863–1963: A Century of Railway Labor Relations.*]

VERNON M. BRIGGS, JR.

RAILROAD CONSPIRACY (1849–50) was directed against the Michigan Central Railroad, the first built in that state, by certain persons angered by such issues as disputes over rights of way, the location of stations, and the killing of cattle by locomotives. The conspirators stoned and shot at trains, destroyed culverts, removed rails, and burned stations. The freight depot at Detroit was burned, and when rebuilt, was burned again. Twelve participants were tried in 1851 and given prison sentences ranging from five to ten years.

ALVIN F. HARLOW

RAILROAD CONVENTIONS were phenomena of the early years of railroad promotion. They were held before the railroads were built rather than after their completion, and they were composed not only of railway builders but also, and principally, of the public-spirited citizens of their vicinities.

The conventions served as a vent for popular enthusiasm for better means of transportation, which they helped to generate. They probably did not greatly stimulate private investment in railroad securities, but they undoubtedly did yeoman service in the numerous campaigns for state or local aid. It was hoped in many cases that they would serve to reconcile conflicting interests and aspirations as to routes and termini; in the nature of things they could only demonstrate or promote popular interest in particular projects.

Railroad conventions were innumerable. Perhaps the most notable were the three great Pacific Railroad conventions in Saint Louis and Memphis, October 1849, and in Philadelphia, April 1850. They were held to demonstrate the strength of the popular demand for federal aid for a railroad to the Pacific coast, to formulate a practicable plan of financing it, and to assert claims for the eastern terminus—the Philadelphia convention supported the pretensions of the Saint Louis convention. But Congress gave their resolutions scant courtesy. One of the most influential gatherings of the sort ever held was the Southwestern Railroad Convention in New Orleans, January 1852. It helped to launch Louisiana and New Orleans on ambitious programs of state and municipal aid and to make clear the broad outlines of a proper railroad system for the whole Southwest. The Pacific Railroad conventions in Sacramento, September 1859 and February 1860, sought to unite the Pacific coast in support of a central route and to persuade the legislatures of California, Oregon, and Washington Territory to make provision for getting the western leg of the proposed railroad started. The Southwestern Convention in Memphis, November 1845, was interested primarily in the improvement of western rivers; but it also endorsed the major railroad projects of the South-