

*Death Rode the Rails: American Railroad Accidents and Safety, 1828–1965.* By *Mark Aldrich*. Baltimore: Johns Hopkins University Press, 2006. xvi + 466 pp. Appendices, tables, graphs, notes, illustrations, photographs, essay on sources. Cloth, \$59.95. ISBN: 0-808-18236-2.

Reviewed by Marc J. Stern

As a teenager, I watched my father thrown to the ground while trying to board a moving train. He had, undoubtedly, done this successfully many times while working for the railroad as a young man. This time he failed. Fortunately, his body and pride were only bruised. My father's experience was hardly unique, even today, when railroad travel is relatively safe. Yet as Mark Aldrich, professor of economics at Smith College, notes in this important new book, "there is no overall history of railroad safety," despite the fact that railroad accidents, large and small, annually killed or maimed tens of thousands of workers, passengers, pedestrians, and assorted "trespassers," especially during the nineteenth and early twentieth centuries. Nor have safety issues been studied "in the broader context of political economy" (p. 4). Aldrich's study fills these gaps with intelligence, balance, and insight by examining the politics, economics, technology, and labor relations of the industry. Reducing risk, he argues, "was the outcome of a technological network that helped to innovate, evaluate, and diffuse improvements in both things such as track and equipment, and institutions and organizations, and that responded to market incentives" (p. 303). Most innovations improved both safety *and* productivity, and railroads rarely introduced safer practices or appliances for safety's sake alone. "Without profitable railroads to deliver the package," Aldrich observes, looking back over the entire period, "better safety would never have arrived at all" (p. 308).

Improvements in one area of railroad safety often taxed existing technology in another. Better brakes, for example, allowed bigger, heavier cars, many of which continued to ride on weak, older rails and overstressed, poorly designed bridges. Poor maintenance, partial and uneven introduction of innovations, and shoddy parts often undermined the benefits of improvements. Systems did not shift as a whole, but rather as

components. Only with broader organizational, managerial, and systematic changes could “the full impact on safety” be realized (p. 304). In analyzing the uneven process of change, Aldrich effectively historicizes, and in so doing qualifies and makes more useful and “real,” Charles Perrow’s groundbreaking, yet fundamentally ahistorical, sociological conceptualization of “normal accidents.”

Public policy geared to Charles Francis Adams–style voluntarism competed, by the late nineteenth century, with calls for more direct and aggressive regulation. This pressure intensified as the railroads became larger and richer, and accidents of all sorts became less palatable. Awards to the injured, both passengers and workers, grew, and the carriers fought to preserve their relative freedom from governmental intrusion. With several notable exceptions, they largely succeeded prior to World War I, and “for a very long time” voluntarism, including that based on active associationalism, “delivered the goods.” Safety gains in the twentieth century began to slip after World War II, however, along with profitability, until the federal government formally took control of railroad safety in 1970.

Early-nineteenth-century American railroads differed from their European counterparts. They grew rapidly. Economy was their watchword, and government regulated little. They were longer, and traffic was thinner. Most were single track. Few utilized the safety systems that emerged early on in high-density, regulated European systems. They traded safety for profits, growth, and flexibility. American railroads accumulated more worker and passenger fatalities (per thousand workers or miles traveled) than the British systems. Risks increased as speed rose, traffic grew, men job-hopped, and single tracking and poor switching made collisions likely. Still, managers responded to the costs of passenger accidents with safer cars and improved technology to cope with the risk and liability attendant on passenger safety.

A “newer college-trained generation of engineers” sought to bring science to bear on railroad safety and efficiency questions. Technical innovations, such as improved wheels, however, ran up against the practice by some firms of swapping their own shoddy parts for competitors’ superior equipment when the latter ran their lines. This “discouraged all carriers from learning about or investing in better quality.” Even as “industry-wide specifications emerged” at the end of the century, they proved difficult to

enforce (p. 69). Advanced signal systems and mechanisms for blocking traffic at railroad crossings arrived at a maddeningly slow pace.

Workers endured these dangers with little hope of significant compensation prior to the 1890s. During the ensuing decades, however, both the railroad workers' brotherhoods' benefit plans and, increasingly, company systems, competed for their favor. Company plans emerged on larger lines as they fought to reduce costly labor turnover. Preventive physicals—eye and ear tests, in particular—and hospitalization plans helped create and professionalize “railroad surgery” as a medical field. Beginning with sanitation work, these practitioners and the railroads also participated in various public-health campaigns.

Although “fatalities per unit of output continued to decline” (p. 181), awareness of risk grew more pronounced. With that came more calls for regulation—spurring the diffusion of line-block systems and better signaling, technical innovation, and heightened concern for worker safety. Better rails and wheels and reduced labor turnover raised productivity and reduced accidents. Simultaneously, the shift to autos reduced the number of accidents due to track walking and car hopping, although collisions between vehicles and trains increased. The latter pattern continued until more effective crossings and grades were installed as the states increasingly took on shared responsibility for the costs of renovating the system from the late 1920s onward. The railroads themselves supported ICC involvement in the regulation of hazardous and explosive materials. Establishing their own Bureau of Explosives through the American Railway Association (ARA), they brought the ICC in to enforce regulations on recalcitrant roads. During the interwar years, higher liability costs stimulated the railroads to launch safety drives and encouraged innovation. Also during this time, an attempt by the ICC to force the adoption of particular rail and brake systems represented one of the few direct efforts at regulatory intervention. In the end, the commission and the ARA returned to a more voluntaristic approach. During World War II and the postwar years, safety declined due to increased wartime traffic, reduced maintenance, and reliance on less experienced workers; after the war, profits and income fell during the 1950s and 1960s.

Aldrich's volume provides an excellent examination of railroad safety issues through the early 1960s. One oversight is the paucity of details about the impact of these

accidents on the lives of workers, passengers, and other “civilians” killed or injured on or by trains. However, *Death Rode the Rails* remains a significant contribution to the study of both industrial safety *and* consumer safety as exemplified by one of the most important industries in our nation’s history.

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