David A. Zegeer, with Shannon Lamkin. ***Inside MSHA: The Formative Years of the Mine Safety and Health Administration.*** Lexington, KY: The Kentucky Foundation, 2014; 395 pp., numerous b&w and 15 col. illus., tabls., gloss., ref., paper, $23. (Available through the Kentucky Foundation at www.davezeeger.com.)

The late David Zegeer's *Inside MSHA* offers an administrator's perspective on the federal Mine Safety and Health Administration during the first decade of its existence. Long a mining engineer, executive, and consultant, Zegeer headed the agency from 1983 to 1987. Having devoted special attention to the safety of miners during his long career, Zegeer brought to MSHA an emphasis on engineering, education, and enforcement—which he referred to as "the 3 Es"—as the best recipe for reducing mining fatalities. Zegeer's agency thus advanced a program of "firm, but fair, regulation" leading to "some of the safest mining years on record."

While organized into several chapters and appendices, this book might best be described as two parts. The first surveys the history, organization, and operation of MSHA. In an introduction, Zegeer outlines the history of federal mining safety policy prior to the creation of the agency via the Federal Mine Safety and Health Act of 1977. The first chapter offers a detailed explanation of the office's work and organization, while the second chapter more specifically explains MSHA's educational programs. The third chapter acts as a pivot in which three coal mine disasters of 1981-82 show MSHA in action, while also framing the agency's *modus operandi* while under Zegeer's leadership.

The book's second part details the more weighty events of the 1980s, and role played by the agency during the Reagan administration. The fourth chapter discusses the political opposition and criticism MSHA faced, before defending Zegeer's collaborative relationship with mine operators in the fifth chapter. The final chapter forcefully shows the progress made in mine safety, especially among small operations, while Zegeer led the agency. An epilogue surveys MSHA's work since the 1980s, with special attention to the federal MINER Act of 2006, before closing with generally positive thoughts on the future of the coal industry.

Although Zegeer writes in the third person, it is difficult to see the last half of his book as anything but a defense of his agency and its actions. Zegeer's MSHA faced fierce criticism from both Congress and the United Mine Workers of America despite "a steady downward trend in both accidents and fatalities" (170). While Zegeer's claims might be accurate, his argument is unsettling. Throughout the book, Zegeer emphasizes his "3 E's" and defends working with mine operators to manage or eliminate safety risks, often by issuing minor penalties of twenty dollars for all but the most serious infractions.

At the same time, he is often dismissive of union concerns and quick to blame disasters on individual miners and mine operators who refused to obey regulations. In one example, following a 1983 disaster that killed three miners in a Pennsylvania coal mine, Zegeer defends MSHA from UMWA criticism by noting that his agency assessed the operation $26,145 in fines for 310 violations during an inspection the previous year. Another 74 violations were discovered in spot inspections and, as Zegeer notes in an aside, union representatives had every right to report hazardous conditions but "they had failed to do so" (222). Beyond blaming the victims, nowhere does Zegeer consider that MSHA might have used its power to shut down the mine or to assess stronger penalties. To Zegeer, safety is a shared responsibility between miners and mine operators. Somehow, in his discussion, an enforcement agency like MSHA is removed from that responsibility.

Also problematic is *Inside MSHA*'s focus on coal mining. As Zegeer explains in his opening chapter, MSHA has two major program areas: Coal Mine Safety and Health, and Metal and

Nonmetal Mine Safety and Health. Although the limited discussion of the latter program could be explained by Zegeer's pre-government career in coal mining, attention also ought to be called to the interests of the publisher. The Kentucky Foundation, as explained on its website but not in the book, is a think tank "promoting coal, energy, and environmental education." By no means does this foundation come off as a malicious organization, but the lack of focus on MSHA's metal and nonmetal work, along with the *non sequitur* discourse on the coal industry found in the epilogue, detract from the overall value of Zegeer's discussion.

These concerns notwithstanding, *Inside MSHA* should serve its purpose in giving readers valuable perspective on this federal agency. David Zegeer was clearly an administrator concerned with the health and safety of miners while simultaneously being a functionary in the politically conservative Reagan Revolution. Although these roles might be seen as mutually exclusive, Zegeer leaves us with extensive insight into how he managed to accomplish both.

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Charles Caldwell Hawley. ***A Kennecott Story: Three Mines, Four Men, and One Hundred Years, 1897-1997.*** Salt Lake City: University of Utah Press, 2014; 389 pp., 54 b&w photos, 8 maps, 10 tabls., notes, 3 append., gloss., bib., ind., cloth, $37. ISBN: 9781607813699

With *The Kennecott Story*, Charles Caldwell Hawley has produced an intriguing account of four men and three copper mines. A geologist by training, the author uses his own professional knowledge and experience, combined with additional research, to narrate the efforts of Stephen Birch, Daniel C. Jackling, William Braden, and E. Tappan Stannard to develop some of the richest copper deposits in the world. Birch played a key role in starting the Bonanza Mine in Alaska, Jackling, the open pit at Bingham Canyon, and Braden El Teniente in Chile. Stannard made important contributions in Alaska, and later as Kennecott's president.

Focusing principally on the 1890s to the 1930s, Hawley successfully reveals the role of these men as well as many others, such as John Hay Hammond and Samuel Newhouse—with substantial script on their personal lives—in finding big financial backers, in understanding complex ore deposits, and in implementing innovative mining technologies. The result was the formation in 1915 of the Kennecott Copper Corporation and its ascent to preeminence in subsequent decades. He concludes the narrative with brief post-World War II examinations of Kennecott's presidents: Charles R. Cox in the 1950s, Frank Milliken in the 1960s and 70s, and Thomas Barrow and G. Frank Joklik in the 1980s and 90s.

The volume also illustrates the key role of the Guggenheims—Meyer and his sons, especially, Daniel—in the initial financing and management of Kennecott Copper Corporation. In examining these industry giants, along with Kennecott's engineers and executives, Hawley tells how corporate America and its trained experts led the way in making the United States the top copper producer in the world by 1910. Their timely introduction of pioneering techniques, such as mass mining and milling, fueled Kennecott's rise and laid the foundation for the corporation's seven-decade history.

In delineating Kennecott's mining story, the author also examines the development of the railroad infrastructures at the three works, highlighting the construction of the Copper River and Northwest in Alaska, the Bingham and Garfield in Utah, and an unnamed line in the tortuous Andes of central Chile. These examples illustrate the massive capital, technology, and labor required to make Kennecott the top copper mining corporation in the world.

The Kennecott Story takes a favorable view