A sense of anticipation gripped the newly formed Eagle-Picher Lead Company when the board of directors announced the election of Oliver Sheppard Picher to the presidency of the company on 6 June 1916. Picher, who had played an instrumental role in the merger, arrived in Cincinnati anxious to manage the affairs of what now was the second largest producer of lead and zinc products in the world. The merger of the two companies represented the final step in the defensive strategy of John B. Swift and the management of the Eagle White Lead Company to shield the firm against the National Lead Company. With the integration of mining and manufacturing completed, and with the promise of a vast new field to guarantee supplies of lead and zinc ores, the problems with National Lead now faded in the face of other concerns.

After the acquisition of Picher Lead’s properties, the new company’s wide scope of operations challenged management to cope with the increasing complexity of operating decisions. In the years following the merger, the Eagle-Picher Lead Company continually searched for greater efficiency in the operation of the company and in the allocation and management of its resources. This effort reflected a growing trend among American businessmen to devise efficient systems for the management of extensive industrial concerns. The techniques employed by the larger firms influenced mid-sized companies such as Eagle-Picher that faced many similar organizational problems. For example, as the company grew more complex
the attractiveness of centralized control diminished, and management borrowed a lesson from large firms like DuPont and General Motors that adopted a decentralized, divisional structure.

The evolution of a professional management at Eagle-Picher began during this period. The merger forced the company to create a bureaucratic structure capable of administering what was a relatively complicated organization despite its smaller size. Integrated from mine to market in a number of areas, unusual in the nonferrous metals industry, the company faced the challenges of controlling diverse operations that served a variety of markets and geographic locations. Often by a trial and error process, Eagle-Picher pursued better forms of organization and control as market forces and economic uncertainty propelled the company to assess its management strategy and operational character.

In addition to organizational problems, the merger created an undercurrent of tension and mistrust between mining-oriented executives in the Tri-State and manufacturing-oriented executives in Cincinnati. Each group possessed a different view of the company’s purpose and future direction. With the emphasis on mining during the 1920s this situation, with a few exceptions, simmered in the background. Yet as Tri-State reserves declined in the 1930s, the rivalry reappeared and forced the company to overcome its ambivalence and pursue one direction.

Fueling the mining-manufacturing ambivalence during these years were the frustrations of operating within volatile nonferrous metal markets. Since the company had large inventories of lead and zinc from mining operations and from the need to carry sufficient raw materials to support manufacturing operations, it was often severely penalized during a falling market. Although mining executives accepted the cyclicality as natural, manufacturing executives often complained bitterly as their profits were wiped out on the consolidated balance sheet by inventory losses in years when lead and zinc declined.

Management’s struggle with organizational, morale, and production problems provides a broad theme for corporate development from the merger to the beginning of World War II. Through the boom years of the 1920s to the depression-plagued 1930s management attempted to redefine the company against a tumultuous backdrop of social and economic changes. Despite its best efforts, the optimism
of the immediate postmerger years eventually faded. By the late 1930s Eagle-Picher was reeling from an internal struggle for control of the future direction of the company.

Managing the New Company

In the summer and fall of 1916, forty-year-old Oliver S. Picher faced the difficult task of transforming two companies with considerably different histories into one organization. Largely as a result of his vigor and his insistence on excellence and efficiency, the new company solved many problems that might easily have complicated the merger of the two firms. In the words of the board, the youthful president relied on "an exceptionally winning personality" to build "an organization characterized by a spirit of marked unity of purpose and personal loyalty on the part of each individual."1

Picher guided the company through its first months of life in an effort to establish a corporate identity for Eagle-Picher, the final and most difficult phase of the merger. He recognized the need for employees to identify with Eagle-Picher and not with either predecessor. Although Picher realized that time would be the most important factor in transforming the two companies into one, his attitude enabled the company to rise above prolonged internal rivalries.

Once elected, management decided to establish the general offices of the company in Chicago. After considering a number of sites, Picher chose Chicago for its central location among the company's properties. Furthermore, relocation gave the company the opportunity to establish an office free from the possible encumberances of established operations at Joplin and Cincinnati.2

News of the merger broke in May 1916. The Cincinnati Enquirer hailed it as "one of the largest in the lead industry, and one of the greatest effecting [sic] a Cincinnati industry in many years."3 Joplin newspapers also recognized the advantages of the merger for their region and commented on the apparently bright future of the new company because of the large ore discoveries in Oklahoma. Picher saw no reason to be any less optimistic. Capitalized at $10 million and projecting $15 million in sales during its first year, Eagle-Picher occupied a solid place in the lead and zinc industry. Furthermore, demands for strategic metals after the United States entered World War I seemed to ensure short-term success.4
The merger agreement transferred all the assets of Picher Lead to the new organization on an exchange of stock basis. Among the Joplin company’s holdings, the most attractive included the Picher field; the Joplin lead smelting and manufacturing plant; lead smelters at Galena, Kansas, and Webb City, Missouri; the Collinsville, Illinois, zinc smelter; and a variety of warehouses and sales offices at locations in the Midwest and on the East Coast. Picher Lead also possessed over $1 million in a surplus fund, which management transferred to the capital account of the new company. The merger of these properties with Eagle White Lead’s holdings in Cincinnati, Newark, New Jersey, and other locations created one of the most diverse organizations within the lead and zinc industry.  

At the first meeting of the board in the new offices at 208 South LaSalle Street the directors formalized the management structure of the company, electing the former president of Eagle White Lead to the office of chairman of the board. This position removed Swift from daily management decisions but assured that strategic decisions would be made under the experienced eye of the seasoned lead executive. Assisting O. S. Picher in the daily operation of the company were Raymond W. Evans, vice-president and sales manager, and his brother, S. Marshall Evans, general vice-president. Both men, longtime friends and business associates of Picher and his father, had been important leaders at Picher Lead. Thomas S. Brown, also from Picher Lead, became treasurer of the company. Joseph Hummel, Jr., the former secretary of Eagle White Lead, maintained his position in the new company.  

Under the direction of its energetic president, Eagle-Picher made significant progress toward a workable management structure. After the death of vice-president Raymond W. Evans in January 1919, the company restructured executive responsibility along departmental lines. Like General Electric, General Motors, DuPont, and others, Eagle-Picher believed that organization by functional department would provide a means to assure effective control and communication throughout the company.  

Raymond W. Evans’s brother, S. Marshall Evans, became director of sales, and Frederick Hertenstein became executive vice-president. Arthur E. Bendelari directed mining operations, and Dr. John A. Schaeffer headed the newly formed research department, an outgrowth of the research laboratory established by O. S. Picher in 1912.
Each of these vice-presidents made frequent reports to Picher and often gave formal reports to the board concerning their respective departments.\textsuperscript{7}

However, just as the company began to assume the organizational and operational character that Picher had envisaged, his untimely death on 26 April 1920 caused a loss of momentum and a period of reevaluation and retrenchment among top management. Picher had provided strong leadership during his brief tenure as president and had made the company more competitive through both expansion and improved allocation of human and commercial resources. His death at age forty-four left a void in the company that took time to fill. The board turned to John B. Swift for leadership, and he assumed the presidency in early May.\textsuperscript{8}

Swift immediately took steps to continue the expansion of the company. To secure additional funds for growth, he implemented a plan to increase Eagle-Picher's capitalization. The board approved the plan, which raised the capitalization from $10 million to $20 million, with $19 million in common stock and $1 million in preferred issues.\textsuperscript{9} Facing organizational and morale problems after Picher's death, Swift held a series of meetings in Chicago early in 1921. Members of the board, department heads, and plant managers met to "go over the situation at the various plants and discuss conditions generally."\textsuperscript{10} The conference gave Swift a chance to meet key personnel and discuss the future of the company on a personal level with his managers.

Several organizational changes resulted from the meeting. All officers and other top managers now had to provide the president with detailed descriptions of the duties of all employees in their respective departments. Swift also formulated a plan for operational responsibilities among the vice-presidents. Since he intended to remain in Cincinnati, Swift placed Thomas S. Brown in charge of the Chicago office with full authority to direct its management. Swift also appointed S. M. Evans head of the sales department and assigned Arthur E. Bendelari to supervise the operation of the mining properties in Picher, the Henryetta smelter, and the zinc oxide plant at Hillsboro. Dr. Schaeffer's responsibilities under the new plan included management of the plants at East Saint Louis and Newark. A committee consisting of Swift, Schaeffer, and Bendelari assumed joint responsibility for the plants at Joplin, Missouri, and Galena,
Kansas. Finally, Swift and Joseph Hummel jointly directed operations at the Cincinnati plant.\(^{11}\)

By implementing these changes, Swift intended to increase efficiency and communication throughout the company. The new assignments also reflected continuing concerns among company officials about organization and the flow of information. However, despite positive intentions, the new management system brought out the frustrations of one vice-president, S. Marshall Evans, who proposed to purchase Eagle-Picher and organize a new company with himself as president and chairman of the board.

In a letter to the board, Evans outlined his plans to acquire all the common stock of the company for $175 per share. He intended to pay one-fourth cash and three-fourths in 7 percent cumulative preferred stock of a new Ohio corporation organized to take over the assets of Eagle-Picher. Evans’s proposal reflected his dissatisfaction with the changes in the company following the death of Oliver Picher. “Perhaps more essential than any other requirement is that of having a smoothly running, personally friendly and cooperative organization,” Evans wrote. His words paid tribute to Picher as well as justified his proposal. Evans, a disciple of the late president, thought himself the heir to the presidency of Eagle-Picher and protector of the Picher interests. Furthermore, on a personal level, he resented the appointment of Brown as office manager in Chicago and doubted the abilities of J. B. Swift to manage the consolidated companies.\(^{12}\) The board reviewed Evans’s proposal and decided that it “would not result for the best interests of the Company.” Evans, present at the meeting, sensed the tide of opinion turning against him when board member Frederick Hertenstein suggested that Mr. Brown should take over Evans’s sales department. Evans then tendered his resignation “after a very friendly discussion of the entire situation.”\(^{13}\)

The incident provides an excellent illustration of the underlying tensions that existed between the two companies within Eagle-Picher in the years after Oliver Picher’s death. In later years, George Potter, who rose from Arthur Bendelari’s assistant to the head of mining and smelting operations, remarked that “the hyphen in Eagle-Picher separates two worlds as effectively as an iron curtain.”\(^{14}\) While management in the 1920s tried to tear down that curtain, the separation remained. Picher’s efforts represented a first step in overcoming the natural tendency to adhere to pre-merger loyalties, but the
tension persisted, declining only as the company adopted more efficient forms of organization and disappearing forever when the ore reserves of the Tri-State were exhausted.

**Extending Production Capability: The Integration of Zinc Operations**

In the several years between becoming president of Eagle-Picher and his death Oliver S. Picher made his greatest contribution to the company. Anxious to capitalize on the growing zinc market and the discovery of the Picher field, he pursued a policy that established Eagle-Picher as one of the nation’s foremost zinc producers in all areas of the industry: mining, smelting, and the manufacture of zinc products. Following the policy of vertical integration, Picher extended the company’s production capabilities to include large-scale zinc smelting and the production of zinc-based pigments.

The zinc industry in the United States grew tremendously during the second decade of the twentieth century. Fueled by strong demand for zinc chemicals such as zinc oxide for use in paints and in rubber compounds, the industry expanded its capacity and pursued a new refining technique known as the electrolytic process to supply sufficient slab zinc to manufacturers of zinc products. Increasing concern about the poisonous qualities of white lead and improvements in the quality of zinc-based pigments also benefited zinc producers. With the coming of World War I demand for zinc skyrocketed. The extensive use of artillery created a large market for zinc used in brass shell casings and for zinc-lined ammunition boxes. Zinc chemicals also found numerous uses in war production, and producers supplied large quantities of sulfuric acid, a by-product of the smelting process, to various war industries.

After the United States entered the war, Bernard Baruch, head of the War Industries Board (WIB), the agency of American economic mobilization, urged the zinc industry to form a Zinc Producer’s Committee consisting of representatives from the major zinc companies. Edgar Palmer of the New Jersey Zinc Company, the nation’s largest producer, became chairman. S. Marshall Evans was Eagle-Picher’s representative on the twelve-member committee. The primary function of the committee was to act as a liaison between the WIB and
the industry on pricing and production issues. During the war zinc companies in the Tri-State organized the High-Grade Zinc Ore Producers Association in an effort to standardize pricing throughout the district. These efforts aided war production and set a pattern of community interest within the industry that led to the organization of the American Zinc Institute after the war, a highly successful and well-respected trade association.18

Eagle-Picher took its first step toward an integrated zinc operation in 1916, when the board approved the construction of a large zinc smelter in Henryetta, Oklahoma, a small town located forty miles south of Tulsa. A $250,000 investment, the smelter could process over 12,000 tons of zinc ore concentrates annually. Management chose Henryetta because nearby coal and natural gas deposits could provide the energy to operate the smelter. Zinc smelters were rarely located near the mines since coal and natural gas deposits did not occur in areas where zinc was found.19

The process for smelting zinc was quite different from that for smelting other base metals such as lead, iron, or copper. Lead, for example, was heated to a molten state in a large furnace and then tapped to form pigs. Zinc was produced either by distillation or by electrolysis. Since Tri-State ores could not be extracted efficiently by electrolysis, the Henryetta smelter employed the distillation process. The distillation process involved roasting the zinc concentrates to burn off the sulfur contained in the ores, which converted the zinc into zinc oxide.20 The product was then mixed with finely divided coal and placed in small cylindrical cones called retorts. The retorts were arranged in horizontal tiers in a long furnace fired by natural gas. The intense heat reduced the zinc oxide to metallic zinc at a temperature above its boiling point, which created a vapor. The vapor was then drawn into a condenser, rendered into liquid form, and tapped by workers, who cast it into fifty-pound slabs.21

The Henryetta smelter provided Eagle-Picher with a valuable addition to its productive capacity and enabled the company to participate in the booming zinc market. Oliver Picher, however, desired to extend the company’s zinc operations beyond the production of slab zinc to the manufacture of higher margin items such as the zinc-based pigments zinc oxide and lithopone. Aware of the inroads that these pigments had made into the white lead market, management believed that the company could hedge the long-term decline of white
lead by producing competing pigments. From both a production and a marketing point of view, the time was ripe to enter the zinc pigment business.

In 1919 the company purchased a zinc oxide plant in Hillsboro, Illinois, from the Robert Lanyon Zinc and Acid Company.22 Built in 1911, the plant was located near coal deposits that supplied energy and raw material requirements. Zinc oxide was produced by placing zinc-bearing ore concentrates with coal on an iron grate and blowing heated air from underneath. This reduced the zinc to a vapor that, when combined with oxygen, turned into a dense white fume. The fume moved through cooling ducts into a baghouse, where it was collected in large wool bags much like a vacuum cleaner collects dust.23

In 1920 Eagle-Picher purchased the Midland Chemical Compa-
ny's lithopone plant at Argo, Illinois, in an effort to round out its zinc pigment business.24 Lithopone, a white pigment made from barium sulfate and zinc sulfide, had become a formidable competitor with white lead in the late nineteenth and early twentieth centuries after paint scientists had solved its tendency to fade in bright light. Lithopone's popularity stemmed from its ability to provide good covering power at a lower cost than white lead or zinc oxide. Thus lithopone became another serious competitor to white lead and joined the ranks of competitive pigments that would eventually eliminate white lead altogether.25

However, despite the inroads that zinc-based pigments were mak-
ing into the white lead market, significant demand for white lead remained, especially among master painters. Eagle-Picher completed two significant investments in this field after the merger. In 1916 the company constructed a lead oxide plant in Newark, New Jersey, to serve eastern markets, and in 1919 it purchased the Hammar Brothers White Lead Company of East Saint Louis, Illinois. The company also used the East Saint Louis plant site as a distribution center and completed a large warehouse shortly after the purchase.26

Yet Eagle-Picher's most significant accomplishment in the period immediately following the merger was the vertical integration of its zinc operations. Under the direction of Picher, the company by 1920 stood as one of the few in the industry with a mine-to-market capability. As demand for slab zinc, zinc oxide, and lithopone increased during the 1920s, the Picher field, Henryetta smelter, and Hillsboro
plant became the most important component of the company's business.

**The Rise of the Research Department**

Despite a nationwide depression in 1921, Eagle-Picher's business remained profitable. However, all profits came from the finished product end of the business. Sales of items such as metal goods remained strong while the collapsed lead and zinc markets occasioned losses for the mills and processing plants. For the first time in company history, the president distributed a formal annual report to the company's shareholders. The language of the report reflected Swift's optimistic attitude that, as the depression lessened, the company would continue expansion in 1922.

As the American economy began to recover early in that year plant improvements at Joplin and Hillsboro began, and the company constructed a regional warehouse in Kansas City, Missouri, to accommodate goods manufactured in Joplin, Chicago, and Henryetta. Furthermore, as the zinc and lead markets began to recover and prices rose, operations at Picher, Henryetta, and Hillsboro showed a "general revival." An effort to increase sales activities for all product lines followed, and the company emerged from the depression relatively unscathed.

During 1922, rising lead and zinc prices generated record profits for Eagle-Picher. Earnings jumped from just under $1 million in 1921 to $2.6 million in 1922. The company also initiated research into a potentially promising new field—storage battery technology. The battery laboratory established at Joplin as part of the research department was one of the first of its kind in the United States. In December 1922, the company entered into contracts with several battery engineering companies to "develop storage batteries and new ideas in the manufacture and production of storage batteries" and their component parts. The creation of the battery laboratory marked the beginning of many successful years of pathbreaking research in battery technology and reflected a long-term trend within the company to explore value-added extensions of current products.

Still in its infancy, the battery industry during the 1920s was very secretive. To survive in this tight market, Eagle-Picher could not
challenge the large battery manufacturers. Instead, the company reasoned that extensive research and service to these companies would be an excellent method to secure a place in the market and to increase sales of its lead oxides for use in battery plates. Consequently, the laboratory developed extensive engineering data on various applications of lead oxides in storage batteries in an effort to tailor company products to customer needs. The decision to provide extensive customer service became a strategy that the company employed successfully as the scope of its manufacturing operations expanded. As Eagle-Picher developed, management remained dedicated to an energetic program of scientific and technical support for its products. This was the key to survival in the industrial marketplace.

The laboratory's first projects included the development of testing procedures for the company's special lead oxides. These testing procedures, designed to meet the needs of various customers, became industry standards and led to the development of more efficient production methods for battery oxides. As the laboratory expanded, research into impurities in oxides resulted in a marked improvement in lead acid battery technology and brought Eagle-Picher industry-wide acclaim. However, customer service remained the priority of the laboratory.

In less than seven years after the merger, the company had developed an active and successful research program. The research laboratory also benefited the company in less obvious ways. Trade and scientific journals often published the results of laboratory experiments, which brought prestige to the company. Department scientists also participated in many conferences and forums in the field of battery technology. Moreover, as Eagle-Picher continued to expand its line of products, the research department provided an administrative structure to control the research and development process entirely within the company. In turn, this provided management with a reliable network to formulate strategies for expansion into new markets.

The construction of experimental plants in Joplin and East Saint Louis in 1923 to test new processes marked important milestones for the research department. Doctor Schaeffer reported that a process designed to manufacture sublimed white lead pigments had shown sufficient progress to begin commercial production. The development of the new process to manufacture white lead occupied a good deal
of Schaeffer's time. His colleague, Dr. John H. Calbeck, had perfected a process for "super sublimed white lead," a product superior to corroded white lead and with lower production costs than Bartlett process sublimed white lead.\textsuperscript{31} The results of the experimental plant exceeded Schaeffer's expectations. Reporting to the board concerning the operation, he distributed samples of the "very beautiful product being turned out there."\textsuperscript{32} At East Saint Louis, another experimental plant using a new process devised by the research department manufactured orange mineral, a lead oxide used as a paint pigment and as a component in printing inks. The development of these products reflected an industry-wide trend, which had its origins in the adulteration controversy, of expanding product lines through scientific research to offset the gradual decline of the white lead business. Production of litharge (lead oxide) and red lead, both essential to storage battery systems, also helped offset the reduced demand for white lead.\textsuperscript{33}

During the 1920s the research department became critically important to the company. Eagle-Picher had reached a stage in its development where it had successfully integrated its raw material and production processes. With this accomplished, the company increasingly relied on its research efforts to develop new products or extend the uses of present products to generate growth. Charged with the full exploitation of the company's lead and zinc product core, the research department feverishly pursued the value-added concept in an effort to develop new products with higher profit margins. As strong competition, declining ore reserves, and volatile metal markets limited the company's ability to pursue further external expansion, a successful research department became essential to future growth.

**Boom Years**

As the seeds planted in the research department matured, Eagle-Picher's mining operations in the Picher field reached full bloom during these years. The company acquired three thousand acres of mining lands by lease or purchase in 1922. The availability of additional raw materials also increased the production of finished products. In Swift's 1923 report to stockholders, he stated that the "tonnages of
finished products moved in 1922 were the largest in the history of the company.’” Riding the crest of the wave of business prosperity that engulfed the United States in the decade after World War I, Eagle-Picher experienced years of increasing production and profitability.

The high volume of mining operations in the Picher district increased the need for new mills to process the ore. The proliferation of mills throughout the Picher district marked the boom days of the field. As long as a particular tract yielded sufficient quantities of ore, the most efficient and cost effective way of milling it was to erect a mill on the site to save transportation costs to other mills. Also, on land owned by Quapaw Indians, from whom Eagle-Picher leased numerous tracts, the government required a mill for every forty acres. As active mining depleted ore deposits, it became very expensive to operate even a small mill. For the mining operators in the Picher field during the 1920s, however, declining reserves seemed a problem for the future, and mill after mill sprang up to dot the landscape as companies exploited new discoveries.

Expanding operations in the Tri-State produced a banner year in 1923. With a profit of $2.4 million and over $36 million in assets, optimistic predictions for the future seemed the order of the day. Eagle-Picher also held $8.4 million in a reserve account, a tremendous amount for a company of its size, and had only $18,000 of funded debt. However, as Swift observed in the report to shareholders, the major portion of the company’s business continued to be conducted within an unpredictable environment. For example, he noted that the price of pig lead during the year had changed over thirty times. The volatile market forced Eagle-Picher to carry large inventories, which, in turn, affected the financial condition of the company depending on the price of lead and zinc. Despite the overall good news, Swift reminded shareholders that profitability hinged on the vagaries of the metal markets.

Swift also described the most disastrous single event during the year—a devastating fire at the Hillsboro plant. The fire nearly destroyed the plant and resulted in the loss of approximately $195,000. Swift ordered an immediate rebuilding of the plant, and by the middle of 1924 it resumed operations with new equipment and an increased capacity. Overall production of the plants, Swift predicted, should increase “fully 20 percent” provided they maintained active
operation. Continuing his optimistic tone, he observed that "we have had no strikes or labor troubles of any kind whatever during the past year and our employees are loyal and all interested in their work, and our official family all work and pull together with very little friction at anytime, so that the prospects certainly look very bright for the future prosperity of your company." 

Swift's predictions proved accurate as business flourished in 1924. The company purchased a controlling interest in the Underwriters Land Company, obtaining control of 6,000 acres of mining lands near the Picher field. Eagle-Picher also purchased the Ontario Smelting Company of Hockerville, Oklahoma, acquiring a lead smelting plant and a battery scrap plant located on the western edge of the Picher field.

Furthermore, the board approved the listing of Eagle-Picher stock on the Cincinnati Stock Exchange. Admitted to trading on 14 October, the first day's activity on 15 October resulted in "considerable attention" by investors. By the end of the day, investors had traded 335 shares of $20 par common stock at an average price of $26 3/4 per share. VanLeunen-Reynolds and Company, one of the first brokerage houses to evaluate Eagle-Picher's stock for their customers, issued a favorable report in November 1924:

Approximately fifteen percent of the total lead produced in the United States each year is used by the company. . . . Eagle-Picher's growth has been steady, its expansion conservative. The plowing back into the properties and equipment the surplus earnings of the past years, has been responsible for the tremendous assets and unusual earning power of this company. . . . The financial position of the Eagle-Picher Lead Company is exceptionally strong. Substantial stock dividends have been disbursed in recent years in spite of the fact that the dividend policy of the company has been ultra conservative. . . . We wish to say in conclusion that we believe that the enormous assets and earning power of this company are by no means reflected in the current price [$29] of the common stock.

Favorable reports by VanLeunen-Reynolds and other brokers encouraged active trading of the stock, and the price of a common share increased steadily on the Cincinnati exchange, eventually leveling off in the $30–35 range by mid-1925.
Encouraged by the year's results, the board in November voted a 10 percent bonus to all officers and other salaried employees. With increased volume on all products, Swift ordered a study of the company's distribution methods to the various processing plants. Although only minor changes resulted from the study, it marked another step in the continuing efforts to improve the management of resources from the mines to the finished product.43

Eagle-Picher reported a net profit of more than $3 million on sales of $5.9 million in 1924. Swift proclaimed that the company was "pleased to report to our stockholders that we have just closed the best year in the history of [the] company." Significant investments during the year included $1 million in additional mining lands, three new mills, and a variety of plant improvements. Eagle-Picher also invested over $100,000 in new corroding stacks for the East Saint Louis plant and in a new building for the manufacture of metal goods at the Joplin plant.44

In 1925, management organized a subsidiary corporation, the Consolidated Lead and Zinc Company, to take over the assets of several small mining interests. The reorganization secured ore supplies at a lower cost and ensured a steady supply. Soon after, Eagle-Picher organized the Consolidated Supply Company, a wholly owned subsidiary, to administer and control supplies of raw materials to company plants. Early in 1926, the company acquired titles from the Consolidated Lead and Zinc Company for sixteen mines and sixteen mills. This brought the total number of mills operating in Eagle-Picher's mining fields to 227.45

In the 1925 annual report, Swift stated that "the policy of our company has been toward expansion and the betterment of our products regardless of cost." Additional mining property amounting to 470 acres purchased in Waco, Kansas, approximately fifteen miles north of the Picher field, resulted in the added production of nearly 125 tons of very high grade zinc ore from the modern on-site mill for the shipment to the zinc oxide plant at Hillsboro. "This will be a fine addition to our mining properties and ought to prove quite profitable," Swift reported. The company's production of 85,000 tons of pig lead from ores in 1925 was the highest in its history and represented one-sixth of all the pig lead produced in the United States that year.46
Personnel Policies

Along with unparalleled prosperity, the mid-1920s brought to Eagle-Picher a heightened awareness of personnel management, especially in the Tri-State. Following the general pattern of welfare capitalism, the company provided various means for employee benefits. Yet as the previous chapter indicated, these benefits were offered partly to reduce the attractiveness of unions and to establish a pattern of corporate loyalty.

Departments at each plant and at the Picher mines handled various types of accident reports and claim settlements, and a workman’s compensation department in Joplin established in 1926 provided centralized control. The company stressed safety and accident prevention at every operation, and procedures for emergencies ensured that employees would receive proper treatment for injuries suffered while on the job. For example, when an employee suffered an injury he reported directly to his foreman for treatment at the office of a physician retained by the company. No matter how trivial the injury, a physician always determined if the employee could return to work. This system discouraged treatment of injuries at a plant or mine since the company felt that only the trained eye of a physician could spot possible complications or secondary problems related to an injury. The company always paid employees at their normal rate for any time missed due to an accident during the day’s work.\(^{47}\)

In the Tri-State, Eagle-Picher set the standard for group life insurance coverage. On 24 December 1919, the company distributed a $1,000 group life policy to each employee continuously serving with the company for a year or more. The company also offered the policy to new employees. After an employee completed one year’s service, the company provided the fully paid policy. The coverage remained in force as long as the employee remained with Eagle-Picher. Even if an employee quit, he or she retained the option to convert the policy to personal coverage without undergoing a medical examination. If an employee decided to return to work, the company issued a new policy at the end of the first full year of employment.\(^{48}\)

Owing to the hazardous nature of mining operations in the Tri-State, personnel management of district employees proved challenging. To reduce the number of potential compensation claims, the company initiated a bonus program for mine foremen in 1925. When
a mine foreman’s crew completed a month without suffering a lost-time accident he received a $20 bonus. The foreman with the largest crew in accident-free mines earned an additional $5 bonus. The company also offered foremen whose miners suffered one or more accidents a $10 bonus for the fewest number of workdays lost. Thus even those out of the race for the top prize would have an incentive to keep lost time to a minimum. Although much discussion over the merits and shortcomings of the bonus plan circulated throughout the company, statistics revealed that it was an effective system to reduce accidents and lost time.49

The safety director of Tri-State operations, O. N. Wampler, observed that “the company’s experience shows that the bonus pays. The first year the Eagle-Picher [Company] paid a bonus while its subsidiary company [Consolidated Lead and Zinc] did not. At the end of that year it was found that the company not paying the bonus had fifty percent more lost-time accidents per thousand manshifts than the Eagle-Picher Company.” Wampler credited the system with instilling a greater sense of responsibility in mine foremen since it encouraged them to devote personal attention to accidents. Prior to the bonus plan, he observed that the foreman “‘took very little interest in an accident after it occurred . . . he knew that it was his business to prevent accidents, but . . . he then considered everything was up to the claim department.’” With the possibility of collecting the $10 bonus, however, Wampler found that “the foreman usually accompanies even the slightly injured to the doctor;” waits until the employee is treated, and then “hauls the man back to the job.”50

The bonus plan was an important step toward accident prevention that remained effective over time. From 1926 to 1929, the company experienced a gradual reduction of accidents in the mines. In 1926, 0.71 accidents per thousand shifts occurred, while in 1929 the figure dropped to 0.46. Days lost due to accidents in all company mines dropped accordingly from 59.8 days per thousand shifts in 1926 to 13.1 days in 1928, and to 10.7 days in the first half of 1929.51 Wampler felt “justly proud that there has never been a strike in any of its mines in its history. . . . Still more remarkable,” he commented, “is the fact that not even a small group of miners have ever asked for either a raise in wages or a change in working conditions.”52 Ominous words, indeed, considering the stormy road that lay ahead.

Yet Wampler was less than forthcoming with regard to the em-
ployee medical health practices of Eagle-Picher and other district producers. Their record is, in historical perspective, shameful. A clinic in Picher established by the Tri-State Zinc and Lead Ore Producers Association, a trade group founded in 1924 by the largest companies in the district, administered, along with the U.S. Bureau of Mines, a medical screening program that in practice enabled companies to exclude from employment and to abandon without compensation miners inflicted with occupational diseases. In a recent article historian Alan Derickson noted that the government and district producers used the Picher Clinic to screen silicotic miners in an effort to evade responsibility for workmen’s compensation claims.53 The human cost of boom years has only recently begun to be tabulated.

Decline and Depression: Strategies for Survival

The general prosperity of the early and mid-1920s for Eagle-Picher began to wane after 1926. Swift’s report for that year cited “a very heavy shrinkage in the price of both pig lead and [zinc]” as the main cause for a smaller net profit of approximately $1.8 million.54 In 1927, as the decline in pig lead, zinc ore, and slab zinc markets continued, the company reported the first loss on a year’s business since the merger. Swift explained the essential problem that confronted the company: “The price of pig lead during the year declined about $22 per ton and the price of zinc declined about $20 per ton. As we carry from 35,000 to 40,000 tons of lead in stock . . . and had on hand about 16,000 tons of zinc, the decline amounted substantially to $1,100,000.”55 As long as the company’s profitability remained subject to the vagaries of the lead and zinc markets, management could not ensure long-term stability. This problem was especially vexing for Eagle-Picher because the proportion of raw material to labor in its mining and manufacturing operations was approximately 90 percent to 10 percent. In a typical manufacturing company the ratio was nearly 50–50. Any decline in prices thus had a tremendous effect on the company’s profitability.

The approaches employed by Eagle-Picher to remedy this problem covered a span of more than two decades and marked another step in the company’s continuing search for order. During this period Eagle-Picher began the long period of transition from a mining-oriented
company to one engaged primarily in manufacturing. A gradual but steady process, the transition was directly linked to the decline in production of the Tri-State district in general and to the decline of the Picher field in particular. Faced with shrinking ore reserves, volatile metal markets, and the worst depression in the nation's history, the company during the 1930s attempted to design business strategies for survival amidst economic turmoil.

Two individuals, Arthur E. Bendelari and George W. Potter, had the greatest impact on the company during this period. Both mining engineers, they possessed a thorough understanding of the company's position in the Tri-State. Potter, vice-president and head of the mining department, played the key role in the reorganization of Tri-State operations. Bendelari, however, confronted a greater task. The board elected him president of the company on 21 February 1928. Swift retained his position as chairman of the board.56

Born in Toronto, Canada, in 1880 and educated at Upper Canada College, Bendelari began his career in the Tri-State in 1901 at age twenty-one when he joined the Underwriters Land Company as a mine supervisor. He gained a reputation as a tireless worker and caught the attention of Oliver Picher when the latter returned to Joplin to take an active role in Picher Lead. Picher eventually hired Bendelari and placed him in charge of all mining operations. The company conducted leasing and exploration for ore bodies in the Picher field in the name of A. E. Bendelari, agent. After the merger, Bendelari continued as the director of all the company's mining ventures in the Tri-State, and perhaps understood the district better than anyone else. He imparted this knowledge to Potter, who proved a brilliant student as Bendelari's assistant and eventually replaced him as the company's top man in the Tri-State when Bendelari assumed the presidency.57

Despite Bendelari's experience in the rough world of Tri-State mining he remained very low key, possessing a certain gentility not often found among district leaders. When he became president of Eagle-Picher, Bendelari cultivated this side of his personality. After the company moved its general offices back to Cincinnati in 1930, he embraced the social opportunities available to him and frankly preferred the more serene atmosphere of Cincinnati to the earthy feel of the Tri-State. Bendelari fulfilled a lifelong dream when he purchased a horse farm outside Lexington, Kentucky, several years after he came
to Cincinnati. The horse farm, plus his easygoing personality, perpetuated an image of a country gentleman, and he reveled in the role. Bendi, as he was known to his colleagues, enjoyed showing off the farm at every opportunity and held many company outings there during his tenure as president. Though low key, Bendelari commanded great respect and moved decisively when circumstances demanded action.58

Because the company’s dilemma focused on the Tri-State, the board relied heavily on the talents of Bendelari and Potter to reorganize operations beginning in 1929. From 1915 to 1929 Eagle-Picher had realized a total profit from mining ventures of over $20 million, of which it had reinvested only $4 million for further exploration. The balance of these earnings remained within the company and were either declared as cash dividends or used for expansion in other departments. During these years the company had nearly liquidated the mines. By 1929, although almost thoroughly depleted, they remained on the balance sheet at a high value. The problem confronting the company became how to reconcile the mining assets with the inflated value carried on the balance sheet.59

The crash of the stock market in October 1929 and the advent of what appeared to be a serious depression forced management to act. The results of inquiries into the situation in the Tri-State led the board to order the organization of a separate and subsidiary company called the Eagle-Picher Mining and Smelting Company. Convinced of the need for conservative, efficient management of Tri-State holdings, the board approved the transfer of all mining properties and leases in the district to the new corporation. Management also transferred the Galena lead smelter and the Henryetta zinc smelter to the subsidiary. Eagle-Picher believed that by expanding the mining and smelting company through consolidation, development, or acquisition of new properties, it would reflect the inflated investment carried on the balance sheet.60

Although not without risk, the organization of a subsidiary offered numerous advantages. Operating costs could be reduced by increasing volume since the mining and smelting company would actively seek new properties. Although Eagle-Picher had built an efficient organization in the district, it would have little value if the mines were exhausted. The way to prevent the operation from becoming top heavy, Bendelari explained, was to expand mining enterprises through
the subsidiary company so that "the organization may function to
the utmost."\textsuperscript{61}

The parent company would also obtain financial advantages, since
the subsidiary would increase production and promote economies.
Furthermore, in order to finance the necessary expansion of mining
and smelting operations without a subsidiary, sound investments in
manufacturing plants would have been jeopardized. Considering the
less than stable nature of the mining business, especially in the midst
of a depression, this alternative seemed unreasonable. However, by
organizing a subsidiary, Eagle-Picher could limit its liability to only
those assets transferred to the mining and smelting company, which,
in reality, probably represented liabilities given current conditions.

The opportunity for substantial savings in the district by using the
mining and smelting company to consolidate disparate holdings had
a special appeal for top management. Many small independent pro-
ducers operated only one or two mills on lands leased from the com-
pany. By merging a number of these smaller operations into the
subsidiary, Eagle-Picher could realize many savings. With all oper-
ations under one management, duplicate plants could be eliminated,
taxes reduced, lower power rates obtained, and insurance costs
drastically cut. Bendelari predicted a potential savings of over
\$100,000.\textsuperscript{62}

Furthermore, by including the Galena lead smelter in the assets of
the subsidiary, all the producers of lead ore on company lands would
be assured a fair price. Eagle-Picher would also ultimately receive
the pig lead made from the ore for use in its lead product plants.
Consequently, the company could achieve greater price stability and
maintain reliable sources of raw materials. Bendelari asserted that
the formation of the mining and smelting company would provide "a
flexible set-up to handle the different situations with which we will
be confronted."\textsuperscript{63}

The depression brought many hardships to the company. During
1930 management formulated a variety of strategies to reduce op-
erating expenses. Bendelari considered reorganizing the Chicago of-
fice and laying off numerous employees. However, unable to devise
an acceptable plan, he instead decided to move corporate headquar-
ters back to Cincinnati to take advantage of the lower rents in the
Queen City. Relocation also enabled the board, dominated by Cin-
cinnati businessmen, to keep in close contact with the executive of-
ficers. Eagle-Picher obtained a lease for the ninth floor of the Temple Bar Building at Court and Main streets in Cincinnati’s central business district.\(^64\)

Bendelari’s report to stockholders on the year’s business reflected the general retrenchment facing all but a few of the nation’s businesses:

The year 1930 has been one of the most severe industry has experienced and is not comparable to previous depressions—even that of 1893. Production and prices have declined throughout the year, with no important upward movement. ... Operating expenses have not only been kept at a minimum but materially reduced. Rigid economies have been made in expense, personnel, [and in] supply and material contracts, which are expected to lower our operating expenses for 1931 at least $400,000.\(^65\)

However, no matter how cost conscious the company became, it could not escape the main penalty of the depression: steadily declining metal prices. In January 1930, pig lead averaged 6.10 cents per pound on the nation’s markets while zinc averaged 5.45 cents per pound. Although the industry considered these prices low, by January 1931 they had dropped to 4.30 cents and 4.05 cents for lead and zinc, respectively. The decline forced the company to create a reserve fund of $500,000 to absorb inventory losses. Since management had no control over the depressed market, keeping inventories at a minimum provided the only protection from further losses. As prices continued to decline, Bendelari could reassure stockholders only by pointing out that “inventory losses in a business such as this are inevitable in periods of great depression.”\(^66\)

During 1931 metal prices hit historic lows. Lead dropped to 3.75 cents per pound and zinc dropped to 3.12 cents per pound. Since 1881, only in 1884 and during the depression years 1894–96 had prices reached these levels. “No one believes that prosperity will never return,” Bendelari asserted, “and sooner or later inventory profits will be realized.”\(^67\)

Eagle-Picher’s financial position remained relatively strong throughout the depression due to the large cash reserves it had accumulated from mining operations during the 1920s. After 1931 it had no outstanding bank loans, and management maintained stability by
creating reserve accounts, declaring conservative dividends, and re-
structuring the company's capitalization. Although business de-
clined, Eagle-Picher, according to Bendelari, remained "vigorous
and alert." He praised employees for showing "an excellent spirit of
loyalty and cooperation . . . despite the many changes and economies
that had to be made because of the decline in sales volume."^68

For a number of reasons Bendelari remained confident that with
even a small increase in business and in metal prices the company
could earn healthy profits. Perhaps most important to him, though,
was the company's commitment to remain competitive, especially in
the economically devastated Tri-State. The decision to incorporate
the mining and smelting company reflected the aggressive character
of Bendelari's management. The subsidiary provided the means to
expand mining lands and therefore ensure a long-term supply of ore,
a necessary prerequisite for Tri-State leadership.

The Central Mill

In a period when lethargy often resulted in bankruptcy, the strong
leadership of George Washington Potter as head of the mining and
smelting company stands as one of the most impressive chapters in
company history. For Eagle-Picher, Potter was the Tri-State, and he
stood head and shoulders above the rest. He possessed many simi-
larities to O. S. Picher. In the mining-manufacturing struggles among
corporate management, Potter headed the mining axis. During this
period he more than anyone else set the direction of the company,
using his forceful personality to persuade Bendelari to invest consid-
erable resources in the depression-plagued Tri-State.

Personally, Potter was an intense and commanding leader, yet
among colleagues his playful personality and sense of humor quickly
surfaced. One of his favorite activities was presiding over an informal
social group of Eagle-Picher managers known as the Chislers. As
Grand Exalted Chiseler, Potter led the membership in a variety of
activities including singing sarcastic songs about the company and
the mining industry. A guide to the initiation ceremony of the Chi-
selers stipulated that initiates be brought to the front of the meeting
"blindfolded and without pants" before reciting the pledge of mem-
bership. That was followed by the singing of the "national song" of
the Eagle-Picher Chiselers, a raucous ditty sung to the tune of "Marching Through Georgia," which described how members must either "chisel or be chiseled" in the world of mining.69

Potter also provided financial backing for the Parker and Watts Circus, a small troop that roamed the dusty Midwest during the depression under the billing The Wonder Show of America. Although the circus was a terrible investment, Potter's fascination with it led him to help Parker and Watts, both former employees of Eagle-Picher, to realize their colorful yet fleeting dreams.70 Following Tri-State traditions, in addition to his duties at Eagle-Picher, Potter owned and operated several small mining companies throughout the district. On one occasion he found himself answering to several members of Eagle-Picher's board about this practice. Although an independent counsel investigated the matter and declared that no conflict of interest existed, a few board members feared that he was using his position at the company to further his personal interests. Vindicated by the report, Potter dismissed the incident as a lack of knowledge and appreciation in Cincinnati for the commercial character of the Tri-State.71

Despite a slow start, Potter never wavered from his assignment to make Eagle-Picher the leading company in the Tri-State. Immediately after the organization of the subsidiary, Potter made an unsuccessful bid to acquire the Commerce Mining and Royalty Company of Miami, Oklahoma. Commerce held extensive lead and zinc properties in the Tri-State and owned the Northeast Oklahoma Railroad, a short line connecting district mines.72 However, the unstable condition of the securities markets in 1931 forced him to abandon his plans and adopt another strategy for expansion. He decided instead to acquire small, partially depleted properties in the district similar to the older properties owned by the mining and smelting company. A seemingly nonsensical move, it fit well into Potter's long-term plans.

Eagle-Picher foreclosed on loans made to the Canam Metals Company and acquired a number of mining properties in northeast Oklahoma for a net cost of $360,000. Potter also purchased the holdings of Harry Payne Whitney, a small mine operator. These properties by themselves did not possess sufficient reserves to warrant individual milling operations. However, as a whole they represented a considerable quantity of ore reserves.73
Consequently, Potter initiated the next step in his plan. He envisaged the construction of a large central mill to create the economies of scale necessary to prolong the life of the company’s mines. A central mill would dramatically increase the value of company holdings since operations could continue in near depleted mines. Precedent for this plan had existed on a smaller scale in the Tri-State since 1929, when Commerce Mining and Royalty erected the Bird Dog Mill to treat ores from a number of its mines. Nearly twice the size of the average district mill, the Bird Dog Mill could process approximately 1,200 tons of ore each day. The success of the mill had demonstrated that a large mill could achieve both efficiency and operating economies.\textsuperscript{74}

Potter desired to construct a mill with at least three times the Bird Dog Mill’s capacity. With the assistance of Frank J. Cuddeback, one of the company’s most talented mining engineers, Potter began planning the Central Mill at Cardin, Oklahoma, in late 1931. After presenting his plans to the board for approval, construction of what then was the largest zinc-lead concentrating mill in the world began in the spring of 1932.\textsuperscript{75}

However, several obstacles remained. Government regulations regarding mining practices on Quapaw lands presented the first problem. Potter persuaded the federal government to change the regulations forcing mining operators who leased lands from the Quapaw Indians to build a mill on every forty-acre tract. The government, realizing the positive economic benefit for the Quapaws and for the depressed district, accepted Potter’s request and rescinded the requirements.\textsuperscript{76}

The success of central milling also depended on an efficient method to transport ores from various mining sites. Conferring with Commerce Mining and Royalty officials, Potter contracted with the Northeast Oklahoma Railroad in early 1932 for the right to move company-owned locomotives and ore cars over tracks in Ottawa County, Oklahoma, and Cherokee County, Kansas. Finally, Potter and his associates assured district mine operators that the Central Mill’s processing system would separate ores according to origin and thus prevent confusion of payment between operators. With these difficulties resolved, in October 1932 the Central Mill began operations.\textsuperscript{77}

The construction of the Central Mill in a time of acute depression
had far-reaching implications for Eagle-Picher and for the Tri-State. It proved a tremendous asset by prolonging the district’s productive life and by providing the means to supply great quantities of lead and zinc to the federal government during the Second World War. At a time when employment in the district had declined approximately 90 percent from predepression levels, construction of the Central Mill also supplied needed jobs. Beyond that, the mill helped to lift the morale of the area. It enabled district operators to extend the life of their operations by “skinning” their mines down to the very last deposits of zinc and lead ore. Improvements in metallurgical science also resulted from the operation of the Central Mill. Because of the numerous economies achieved, both the mine operators and the company benefited from improvements in milling techniques derived from large-scale processing.

With an initial capacity of 3,600 tons per day, at a time when mill capacity in the district averaged 720 tons per day, demands on the Central Mill forced the company to increase capacity to 5,500 tons per day by 1938. The benefits to Eagle-Picher can be illustrated by the following statistics. In 1930, when the company incorporated the subsidiary, estimated ore reserves, then of questionable value, totaled 392,443 tons. By 1934, approximately 276,429 tons of concentrates had been extracted. However, instead of facing the apparent near total depletion of reserves, the construction of the Central Mill and the acquisitions of the mining and smelting company enabled ore reserves to stand at 495,331 tons in June 1934. Additionally, the innovation of custom milling methods promised to double potential reserves.

By 1935, the general status of Eagle-Picher had improved due to the results of Tri-State operations, slight increases in metals prices, and the success of a new product developed by the research department. In 1927 and 1928 the company had first considered entering the insulation business by manufacturing slag wool, a product made from smelter slag. On 3 May 1928 management assigned the research department the task of “determining whether or not it would be feasible and desirable for the Eagle-Picher Lead Company to manufacture slag wool.”

The company was among the first to attempt commercial manufacture of slag wool, although the process had been known previously. Slag wool, or mineral wool, was manufactured by melting the
slag produced from smelting zinc. The company's process involved melting the mineralized slag in a 3,000° furnace. The slag then passed over jets of steam, which shattered it into a multitude of fine interwoven fibers containing millions of dead air cells. These cells, trapped within the fibers, provided an excellent barrier to cold or heat. Slag wool also proved to be fire resistant, water repellent, and chemically and physically stable.81

Beginning in May 1928, research department scientists constructed a small pilot plant to study the manufacture of slag wool on a semicommercial scale. The operation of this plant "proved the feasibility of the Company's manufacturing slag wool," according to Bendelari.82 By November 1929 the research department had constructed a larger pilot plant. Since the plant operated continuously, company engineers could study the process and predict with greater accuracy the cost of commercial production. Research department employees constructed the second pilot plant from discarded materials around the Joplin plant and from secondhand dealers and junkyards. Costing only $4,500, the operation provided essential data. However, a lack of available space and potential health and fire hazards prevented the expansion of the plant.83

In July 1930 the planning committee requested $30,000 from the board for the construction of a modern plant capable of producing commercial quantities of slag wool. "It is confidently predicted," the committee asserted, "that each year's profit will be in excess of the entire sum required to construct a new unit."84 Sales could be handled through present channels with little additional expense, and transportation costs to the Southwest, the targeted market, would be favorable. The board approved the allocation, and construction of a plant began immediately. Although depression conditions initially hindered the sales of mineral wool insulation, by 1935 Bendelari could report that "this branch of our business is growing very rapidly and indications are that this new business, based on the expected sales volume, will show a satisfactory profit."85

**Pick Handles in Protest: Unionizing the Tri-State**

The success of the slag wool operation was quickly overshadowed by labor difficulties in the mines and smelters of the Tri-State. In 1935
Eagle-Picher faced the first prolonged labor dispute in its history. The controversy between the company and the International Union of Mine, Mill, and Smelter Workers evolved into a divisive, violent, and cathartic episode. The incident is illustrative of what historian Vernon Jensen has called the "heritage of conflict" in the management-labor relationship in United States industrial history.86

In the Tri-State, the conflict had been delayed by the entrepreneurial opportunities offered by a booming mining economy. In addition, during the 1920s the labor movement in the United States lost momentum, and unions such as the International Union, whose jurisdiction included zinc-lead industry workers, were largely inactive.87 Yet by the mid-1930s the opportunity to become an independent operator had largely disappeared, and the vast majority of miners received a daily wage from a mining company. The union movement capitalized on these frustrations. Responding to government encouragement from New Deal measures such as the collective bargaining clause of the National Industrial Recovery Act and, later, the Wagner Labor Relations Act, union organizers moved into the Tri-State hoping to carry the message to district companies, which, as it turned out, had a very different interpretation of the message.

The International Union of Mine, Mill, and Smelter Workers began unionization efforts in the district in earnest during the fall of 1933. The International Union comprised the remaining, more conservative membership of the Western Federation of Miners (WFM) after a radical group within the WFM split off over the change in affiliation from the Industrial Workers of the World (IWW) to the American Federation of Labor (AFL). Those who remained decided to change the name of the organization and to prohibit members of the IWW or any other union not recognized by the AFL from joining the "new" International Union.88 While the WFM had achieved limited success in organizing a minority of Tri-State miners, the International Union eventually claimed preeminence and became the force behind the unionization of the district during the 1930s. The union eventually established locals at Joplin, Webb City, Miami, Treece, Galena, Baxter Springs, and Picher. Within one year it boasted a membership of over 51 percent of the estimated 4,800 district mine, mill, and smelter workers.89

In March 1935, the International Union moved to gain recognition from district operators after an improved metal market had stimu-
lated mine production. The union sought a wage hike partially to compensate for losses incurred by mine workers from previous shutdowns due to depressed metal prices. A committee of the International Union met with the management of Eagle-Picher's Galena smelter and sought recognition as the exclusive representative of all the company's Tri-State employees. However, since the committee did not present documentary evidence that a majority of the Mining and Smelting Company's employees had joined the union, the company refused to negotiate. Eagle-Picher did not refuse to deal with any accredited committee representing employees who had joined the International Union. But it did refuse to deal with the International Union as the sole representative of all Mining and Smelting Company employees.

On 13 March the International Union sent a letter to all Tri-State operators suggesting that they appoint a committee to negotiate with the union. The Tri-State Ore Producers Association, a group led by the Mining and Smelting Company, refused, and the union continued to seek recognition during the following month. The International Union did not complain about wages, hours, or working conditions, it merely demanded that it be recognized as the exclusive bargaining unit for all district employees. The union's attempts met with four denials from the Ore Producers Association. The producers' fourth refusal during the first week of May caused the leaders of the International Union to call for a strike against the association to begin at midnight on 8 May. Immediately, picketing began and mining operations in the district came to a halt by the end of the next day.

Despite the strike, the Ore Producers Association refused to recognize the International Union and stated that district operators would follow an open-shop policy. A limited work stoppage benefited the producers because it provided an opportunity to reduce inventories and cut costs. Furthermore, the strike gave the producers a perfect opportunity to blame the union for the hardships of a strike during the midst of a depression. The union, along with the Red Cross, provided temporary relief for striking miners, but the funds were quickly exhausted.

Consequently, within the International Union a growing opposition threatened the strike. A meeting of union men and other mine workers at Cardin on 18 May revealed strong sentiment for a return to work. Then, on 21 May, a back-to-work movement began with a
mass parade of over fifteen hundred AFL members in Miami, Oklahoma, in the heart of the Picher field. Although the parade seemed to be a spontaneous expression of the miners' need to return to work, in reality the parade was a well-organized attempt by the Ore Producers Association to gain support for a company union and break the strike.

Following the parade, on the morning of 25 May, a group of twenty-eight men assembled on a patch of barren, windswept Oklahoma prairie near Miami to organize a back-to-work movement. Nearly everyone in the group held a supervisory position with a Tri-State mining company. The leader of the group, F. W. "Mike" Evans, was a mine operator, a member of the Ore Producers Association, and a leading financier in the district. Prior to 1935 he had operated various lead and zinc mines and employed a substantial number of men. Evans owned the Connell Hotel in Picher, a steel cable interest, and part of the Picher Ford Motor Company dealership. Evans also reportedly operated one of the largest whiskey stills in the district in an abandoned mine and had served a jail sentence for selling bootleg whiskey. While intent on characterizing himself as a "friend of labor," Evans closely identified himself with the business and commercial interests of the district.

Shortly after the meeting, Glenn Hickman, an associate of Evans and a ground boss of the Black Eagle Mining Company, drafted a back-to-work petition that the operators quickly circulated among miners throughout the district. The petition outlined the general dissatisfaction with the strike and indicated that the miners were anxious to return to work. In addition, the petition "disavowed" the acts of the International Union, and agreed to form an organization "for the purpose of protecting ourselves and each other from any and all harm or dangers from any organization opposed to returning to work in this district."

Over the next two days approximately three thousand mine workers signed the petition. Meanwhile, on 26 May, over fifteen hundred mine workers attended a back-to-work rally at the Miami fairgrounds. At this meeting Evans first discussed a plan to organize a new union that would "aid in the opening of the plants and mines and end the strike." The next day, before three thousand mine workers in Miami, Evans organized the Tri-State Mine Metal Workers Union and was elected president of the organization, informally
called the Blue Card Union due to the color of its membership booklets.\textsuperscript{101}

On May 27 a meeting of Blue Card Union organizers adopted the constitution and by-laws of the union. These articles, drafted by Miami attorney Kelsey Norman, included no provisions for collective bargaining and a promise not to strike: "Persuaded that it is for the interests both of our members and their employers that good understanding should at all times exist between the two, it will be the constant endeavor of this organization to establish mutual confidence and create and maintain harmonious relations. Such are the aims and purposes of the Tri-State Metal, Mine, and Smelters Union." The constitution also specified that the Blue Card Union would be controlled by a twelve-member executive committee made up of men who "shall have had at least five years experience as a vice-principal in the metal mines or smelters in the Tri-State area."\textsuperscript{102} In other words, only those in management positions could serve on the committee.

The events following the creation of the Blue Card Union illustrate the substantial amount of pent-up hostility and frustration over the unionization of Tri-State mining workers. In an industry where extreme violence during labor disputes was common, the mining operators in the Tri-State had largely escaped trouble until the formation of the Blue Card Union. Unfortunately, a succession of violent encounters between the Blue Card Union and the International Union followed.

When a delegation of International Union members came to see Evans at his office in Picher to protest the Blue Card's strikebreaking tactics, tempers flared and violence ensued. When Evans sought protection from Ottawa County Sheriff Eli Dry, International Union members assaulted the sheriff. To avenge the attack, Joe Nolan, a local mine operator and vice-president of the Blue Card Union, organized over three thousand of his union members into a pick handle brigade. Equipped with hickory replacement handles for miner's picks, Nolan and his mob broke up International Union meetings throughout the district. They raided union locals at Joplin, Galena, Baxter Springs, and Picher on a regular basis. Furthermore, if any International Union members attempted to protect themselves or stage counterattacks, local law enforcement officials arrested them for rioting.\textsuperscript{103}

The Blue Card Union enjoyed such widespread support primarily
due to the economic hardships during the depression. Mine workers were especially susceptible to a back-to-work movement, and the support of district bosses seemed to guarantee the success of the movement. Many mine workers undoubtedly joined the Blue Card Union for the sole purpose of providing a means to support their families. Thus, the union held significant coercive power over mine workers and their families. In turn, the Blue Card Union used this seemingly solid support to fulfill its main purpose of breaking the strike and returning the men to work.

During the remainder of 1935, Governor Alfred M. Landon of Kansas and Governor Earnest W. Marland of Oklahoma called out the National Guard of each state to ensure that striking International Union members would not interfere with the opening of the mines and smelters. The Ore Producers Association, working mainly through Eagle-Picher, signed agreements with and gave financial support to the Blue Card Union.

Evans and the Blue Card Union virtually took over local law enforcement. With the permission of Sheriff Dry, Evans distributed deputy commissions to members of the Blue Card Union. So called squad cars of union members patrolled the district supposedly to protect property. In reality they were little more than harassment teams organized to search for and physically abuse International Union members. Often, these squad car patrols would haul a number of International Union "prisoners" to Evans's headquarters at the Connell Hotel for questioning.

An important factor in the growth of the Blue Card Union along with the economic needs of its members was the general state of confusion in the national labor movement. John L. Lewis led a split with the AFL when it voted in 1935 to favor craft unions. With a core of eight unions, including the International Union, Lewis organized the Committee for Industrial Organizations (CIO). The new affiliation of the International Union confused AFL members, and the Blue Card Union gained recruits as a result of the dissatisfaction with the switch to the CIO.

The new affiliation with the CIO engendered much criticism of the International Union in the district. Rumors that the CIO was controlled by Communist and Jewish interests were frequently heard at community gatherings. Criticism also took the form of verse in which the Blue Card Union was praised for its stand:
The head of this Union, his name is Mike. He and Joe Nolan were at the head of the parade with Pick Handles when we broke the strike. Mike said let the yellow bellys stay on relief. And drink their dried milk and eat canned beef Because our little union is just doing fine. Let the rest of the strikers stay on the soup line. They are losing their cars and selling their hogs. For the International Union has gone to the Dogs.\textsuperscript{109}

Once people identified the International Union with Communism and special interests, it became very difficult to argue that the union was in the best interest of district miners.

The new affiliation of the International Union gave respectability to the Blue Card Union and diverted attention from Blue Card’s questionable status. Although the methods of the Blue Card Union were hardly ethical, it did succeed in its major purpose of breaking the strike. However, the union eventually paid for its actions. On 5 July 1935 the Wagner Labor Relations Act became law. The International Union filed charges with the National Labor Relations Board (NLRB) in May 1936, accusing Eagle-Picher and other district operators of unfair labor practices under section 8(2) of the act, which declared it illegal to “dominate or interfere with the formation or administration of any labor organization or contribute financial or other support to it.”\textsuperscript{110}

Not surprisingly, among the accusations were charges that Eagle-Picher had refused to accept the International Union as the exclusive representative of its employees for purposes of collective bargaining, even though the union represented a majority of the company’s employees. Also, the petition alleged that the company had locked out its employees, dominated and supported the Blue Card Union, instigated and encouraged the use of violence against the International Union, made membership in the Blue Card Union a condition of employment, and refused to hire International Union members because of their affiliation and activities.\textsuperscript{111} The complaint, however, failed when Eagle-Picher secured an injunction against the NLRB. After the injunction was dissolved in May 1937, the International Union filed a second, identical complaint.\textsuperscript{112}

The scope of the International Union’s charges paid tribute to the
success of the Blue Card Union in breaking the strike and reopening
district mining operations. Nevertheless, the early success of the Blue
Card Union faded to uncertainty after the United States Supreme
Court decision in *NLRB v. Jones and Laughlin Steel Corporation* in April
1937 declared the Wagner Act constitutional.\(^{113}\) Initially, attorneys
for the Blue Card Union led by Kelsey Norman had predicted that the
act would be declared unconstitutional and that district operators
like Eagle-Picher would not be bound by the collective bargaining
process. However, the Court’s decision in the Jones and Laughlin case
caused the Blue Card Union to change its strategy and seek affiliation
with a national union in an effort to gain the appearance of respect-
ability. On the same day as the Court’s landmark decision, Norman
signed an agreement affiliating the Blue Card Union with the once
vilified AFL.\(^{114}\)

After the International Union filed its second complaint with the
NLRB on 8 November 1937 and Eagle-Picher and other district op-
erators persisted in their denials of the charges, the NLRB ordered a
hearing under regional trial examiner William Ringer to begin in
Joplin on 6 December 1937.\(^{115}\) The regional examiner intended to
conduct a hearing to determine if the International Union’s charges
were justified, and then submit a full report to the NLRB in Wash-
ingen with a remedy for the situation. While the Blue Card Union
maintained its innocence, the evidence presented at the hearing,
which lasted until 29 April 1938, proved overwhelmingly that the
Blue Card Union was indeed a company-dominated union.

Throughout the hearing, though, officials of the Blue Card Union
worked feverishly to maintain the facade of independence from com-
pany influences and to attack the NLRB at every opportunity.
Through the *Blue Card Record*, the union newspaper, its leaders ac-
cused the NLRB of “radical conduct” and of giving “aid and com-
fort” to the CIO “in robbing the very cradle of American liberty and
ideals.”\(^{116}\)

The *Blue Card Record* continued its attacks in hopes of raising mo-
rale in preparation for the damning evidence that Blue Card officials
expected to be revealed at the hearing. Many articles expressed the
belief that the Blue Card Union could not obtain a fair hearing from
the NLRB because they were “a group of CIO lovers.” Others at-
tacked NLRB attorneys, claiming that “our information is that a cou-
ple of cheap skate shysters, one of which is named Avrutis (nice sweet
bolchevick name) . . . are in the district now making their one sided investigation."\textsuperscript{117}

Despite the propaganda campaign of the Blue Card Union, the regional examiner found sufficient evidence to uphold the International Union’s charge that Eagle-Picher and other operators had “since July 5, 1935, dominated and interfered with the administration of the Tri-State [Blue Card] Union and . . . contributed support to it” and “that the respondents have at no time ceased dominating and interfering with its administration.” The board’s remedy for the situation included requiring Eagle-Picher to cease and desist its unlawful activities and allow for the free self-organization of its employees. The board also ordered the company to withhold exclusive recognition from the Blue Card Union or any other labor organization of its employees until such an organization could be certified by the board as an appropriate bargaining unit.\textsuperscript{118}

In addition, the board ordered Eagle-Picher to pay back wages to employees who were fired because of their association with the International Union.\textsuperscript{119} On 31 August 1938 regional examiner Ringer submitted his report to the NLRB in Washington, and the board issued a decision affirming Ringer’s report on 27 October 1939. Eagle-Picher’s attorneys appealed the case to the United States Eighth Circuit Court of Appeals, where a decision was handed down on 21 May 1941. Although the court conceded that the 1935 strike “was not attributable to an unfair labor practice of petitioners [Eagle-Picher],” it affirmed that “there can be no doubt that the Board was justified in finding that the Blue Card Union was dominated and supported by the petitioners. . . . The Board, acting within the compass of its power, has held a proper hearing, has made findings based upon substantial evidence, and has ordered an appropriate remedy.”\textsuperscript{120}

The intensity with which the Tri-State mining companies opposed unionization and collective bargaining reflected regional as well as national trends. For a variety of reasons, district operators were largely spared difficulties with labor unions until the 1930s. Thus when the union movement confronted them, they expected to triumph as they had so successfully in the past. However, at the same time, the national labor movement was beginning to arm itself with powerful legal weapons. The impact of New Deal reforms such as the Wagner Act, which guaranteed collective bargaining, reverberated throughout the national economy and set the wheels of change into
motion. Progress was neither smooth nor without opposition. But history had caught up with the Tri-State mining district, carrying even the most backward of regions into a new era of management-labor relations.

Reorganization and Decentralization

Despite ongoing labor difficulties in the Tri-State, the company’s financial position remained stable. The ratio of assets to liabilities at the end of 1935 was 7 to 1 compared with 5 to 1 in 1934. Mining and milling operations in 1935 also reached the highest levels since 1929. Eagle-Picher continued to expand its ore reserves, acquiring mining rights and leases covering six thousand acres in the Webb City–Oronogo, Missouri, area. In 1936 the company purchased the Mary M Mining Company and obtained approximately fourteen hundred acres of fees and leases in Oklahoma and Kansas.

Manufacturing showed a steady increase as well. Bendelari reported that “the fabricating plants of the company produced the largest tonnage of manufactured products for any year since 1930.” Increased sales of insulation products had accounted for the high volume. The board ordered insulation-producing facilities doubled and instructed them to produce at capacity. “Our insulating products are being given a very gratifying reception by the public,” the president observed.

However, despite improved operating results, top management displayed a continuing concern that Eagle-Picher was “drifting with the times.” To assess the overall position of the company and to conduct an analysis of the structure of corporate operations for the purpose of reorganization, the board looked to Joel M. Bowlby, a senior executive with the Chicago accounting firm Barrow, Wade, and Guthrie. On 26 October 1936 a special committee of the board arranged to “retain Mr. Bowlby to procure and prepare for it such data in connection with the operations of the Eagle-Picher Lead Company.”

Bowlby began an intense research program covering all facets of the company. He conducted interviews with directors, officers, and selected employees and studied vast amounts of data on sales, production, finance, and administration. His memorandum, submitted
to the board in January 1937, recommended a reorganization and
decentralization of Eagle-Picher into separate and autonomous di-
visions. Each division would become, in effect, a separate company
yet continue to use centralized functions such as the legal, purchas-
ing, traffic, and research departments.\textsuperscript{125}

The divisional management structure proliferated among U.S. in-
dustrial companies after World War I. Although employed by some
railroads, E. I. DuPont de Nemours was the pioneer in industry, im-
plementing the structure in 1920 in response to failed diversification
efforts. General Motors, under DuPont control, also became an early
convert to the divisional system.\textsuperscript{126}

The major advantage of the divisional structure was that it enabled
large enterprises to function with the advantages of smaller busi-
nesses. Top executives in a general office, free from operational con-
cerns, became policy makers and central planners. They formulated
goals, allocated resources, set corporate regulations, and evaluated
the success of operating units. Division offices, in turn, administered
daily operations such as production, sales, personnel, and quality
control. Companies most often organized divisions around a major
product line or a large geographical area.\textsuperscript{127}

Because top management remained isolated from daily opera-
tions, it functioned as a strategic planning unit. Division manage-
ment sometimes made long-term decisions; however, these often
dealt with tactical or operational problems. The divisional system
also provided an excellent method for executive development since
division managers assumed responsibility for every facet of their op-
erations. Finally, the system encouraged more employees to think in
broad terms and adopt a company-wide perspective.\textsuperscript{128}

Bowlby's report, which owed much to the ideas and suggestions
of George Potter, followed the general outline of divisional reorgan-
ization adopted by other firms. But, within the lead and zinc industry,
Eagle-Picher was a pioneer of this structure. Unlike most nonferrous
metals companies, which specialized in one phase of the mine-to-
market process, Eagle-Picher's operations fit readily into divisions.
National Lead was mainly a processing company, and mining firms
such as St. Joseph Lead, American Zinc, Lead, and Smelting, and
United States Smelting and Refining largely stayed out of the pro-
cessing and fabricating businesses.\textsuperscript{129}
Bowlby pointed out that since the company had distinct product lines, the divisional form could function efficiently. He listed other advantages of the structure:

One of the primary benefits . . . is the extent to which it permits a determination of the capital employed in the operation of the respective divisions and a correspondingly clear delineation of the profits or losses of each division. To a company such as the Eagle-Picher Lead Company, which manufactures a number of distinct products produced in separate plants and sold to largely unrelated classes of customers, the divisional form of organization is extremely well suited and possesses many obvious advantages.\(^{110}\)

Bowlby proposed to divide the company into four major divisions with a number of central auxiliary services. The product divisions originally included were lead carbonate (white lead), pigments, insulation, and metal goods. Auxiliary services included purchasing, shipping, warehousing, traffic, legal, and research.

Following other examples, Bowlby envisioned that the executive officers of the company would assert direct control over divisional operations through accounting, allocation of capital and credit, and long-term planning. He also maintained that existing control over operations would not be sacrificed by the structure and that extending additional control could be easily accomplished. Also included in the divisional restructuring was a profit-sharing plan for division managers and for certain other employees. Bowlby intended to give division managers an incentive to innovate and manage their respective resources efficiently.\(^{111}\) On 27 May 1937 the board approved Bowlby's proposal "in principle," and the company began to implement the new structure in the second half of 1937.\(^{112}\)

With the adoption of divisional organization, Eagle-Picher possessed a management system that proved adaptable to changing times. The management philosophy and practices employed by the company in subsequent years evolved from the ideas behind the reorganization. The practice of allowing divisions freedom to develop new products and markets while relying on the central office for general direction or management aid in time of crisis grew out of solutions to company problems during the 1930s.

However, Eagle-Picher's greatest problem remained long-term sta-
bility and growth. Lines on an organization chart could not guarantee a successful future, nor could it guarantee that the system would work in practice as outlined on paper. Indeed it took years before decentralization was a fact as well as a policy. During the next fifteen years the company would struggle to find security in the midst of a tumultuous era. Seeking a new direction would test Eagle-Picher’s ability to adapt, innovate, and become an aggressive company. The drift would continue in the interim, but the lethargy would soon end.