The Roots of Connecticut River Valley Deindustrialization: The Springfield American Bosch Plant 1940-1975

By

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In the late 19th century and early 20th century, Springfield's economic prosperity came from a diversified manufacturing base deeply rooted in a set of industries that required at their core large numbers of highly skilled metalworkers and machinists. In his comprehensive four volume history of Massachusetts industry published in 1930 Orra Stone called the city "a beehive of diversified production" as he described 24 factories each with an annual production in excess of $1 million.[1] For over 100 years the Connecticut River Valley between Hartford, Connecticut and White River Junction, Vermont with Springfield at its middle-prospered as a metalworking region.

American industry, undamaged by the Second World War, accounted for close to half of global manufacturing output in the mid-1950s and firms in Springfield prospered. Productivity rose, workers enjoyed rising standards of living and benefited from the protections of the liberal state and Keynesian fiscal and monetary policy. However, the country could not sustain its premier position as 'manufacturer to the world' and between 1979 and 1983 employment in the highly unionized durable goods sector declined by slightly over two million jobs (16 percent). Much of the manufacturing done by American corporations

[1] Orra Stone, *History of Massachusetts Industries: Their Inception, Growth, and Success* (Boston, 1930) Vol. 1, ch. 26, "Springfield: The Industrial Beehive of Massachusetts and the Habitat of Almost Four Hundred Manufacturing Enterprises," pp. 481-574. Today just two of Stone's 'Big 24' remain open.

shifted overseas during these years as the nation deindustrialized. During the 1980s one in five American workers saw their job disappear and the percentage of unionized manufacturing labor declined from almost 50 percent in 1970 to approximately 10 percent by the early 1990s.[2]

The roots of the deindustrialization process and the weakening of organized labor are seen in events in Springfield, Massachusetts starting in the 1950s, as Springfield and the Connecticut River Valley suffered numerous plant closing that culminated with the dramatic shutdown in 1986 of the American Bosch plant. While a thorough history of factory closings in the region is well beyond the scope of this article, herein I make a contribution to such a history through an account of the early stages of deindustrialization in greater-Springfield-as evidenced by the movement of work out of the city in the 1950s and 1960s-with a particular focus on the Bosch, as it was familiarly known. The story matters for the permanent closure of the plant in 1986 marked the watershed for large-firm metalworking and metalworking unions in the Connecticut River Valley.

Springfield, Massachusetts sits at the approximate center of the 200 hundred mile long Connecticut River Valley between Bridgeport, Connecticut and Springfield, Vermont. The valley began to secure a diverse manufacturing base in 1776 when Springfield became the site for a federal armory.[3] By the early 1800s the Armory had become the hub

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[2] Among the Fortune 500's largest manufacturers, employment dropped to 12.4 million from 15.9 million between 1980 and 1990. General Motors, Ford, Boeing and General Electric collectively eliminated 208,500 jobs from 1990 and 1995. By 1996 about three-quarters of all employed Americans worked in service industries, up from two-thirds in 1979. For a discussion of these trends see S. Herzenberg, S., J. Alic, J. and H. Wial, *New Rules for a New Economy: Employment and Opportunity in Postindustrial America* (Ithaca, 1998); Harley Shaiken, *Automation and Global Production: Automobile Engine Production in Mexico, the United States, and Canada* (San Diego, 1987); Kim Moody, *Workers in a Lean World: Unions in the International Economy* (New York, 1997).

[3] Michael Frisch, *Town into City: Springfield, Massachusetts and the Meaning of Community: 1840 -1860* (Cambridge 1972). The Armory was described by one British visitor as "beautifully situated on an eminence overlooking the town." For the passage, Nathan Rosenberg, ed., *The American System of Manufactures: The Report of the Committee on the Machinery of the United States 1855 and the Special Reports of George Wallis and Joseph Whitworth* (Edinburgh, 1969), p. 364. For an historical analysis of pre-Civil War industrialization in New England that compares the role of merchants in the Lowell textile paradigm with the role of merchants in Springfield see

of a flourishing industrial district along the river and for most of the 19th century Springfield and its environs enjoyed a comparative technological advantage over many other regions of the country due to the diffusion of Armory manufacturing techniques such as the utilization of gages, fixtures, jigs and dies and the availability of large numbers of skilled metalworkers. According to historian David Hounshell, "The Armory acted both as a clearing house for technical information and a training ground for mechanics who later worked for private arms makers or for manufacturers of other goods." Numerous skilled mechanics and machine designers took a stint at the Springfield Armory before traveling to other clusters of metalworking companies in Providence, Rhode Island, Worcester, Massachusetts, Hartford, Connecticut and Windsor, Vermont and by 1840 the Connecticut River Valley contained hundreds of small metalworking and machine making firms. By 1850 Springfield, Massachusetts housed 73 machine shops, six cotton factories, three paper mills, four printing concerns, two tool factories, a saw factory, several saw and grist mills, two brass foundries, two plow manufactories, and eight firms involved in the production of railroad cars and coaches.[4]

After the Civil War the valley machine tool industry fostered the growth of a range of industrial regions, such as watches in Waltham, footwear in Haverhill, furniture in Gardner, munitions in Bridgeport, Connecticut, typewriters and wire drawing across that state, the production of specialized machinery for the automobile industry in Windsor and Springfield, Vermont, textiles in Lowell, jewelry making in Attleboro, cutting tools in Greenfield, and metal working and specialist

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François Weil, "Capitalism and industrialization in New England, 1815 - 1845," *Journal of American History*, (1998) pp. 1334-54.

[4] David Hounshell, *From the American System to Mass Production*, pp. 33-4, p. 44. Hounshell points out that two keys to Armory success were an early reliance on private arms contractors as a source for innovation and the perfecting of various ways to inspect parts in the process of manufacture. This concept spread to other metalworking establishments in Springfield and over time added to the region's reputation for high quality work. Hounshell cites F. Deyrup's *Arms Makers of the Connecticut Valley* (Northampton, MA, 1948) for its documentation of instances when the Armory's patternmakers and skilled foundrymen made machine casting for many area machine tool builders without the internal capacity to do so. For Vermont, see Arthur F. Stone, *The Vermont of Today* (New York, 1929) esp. ch 23, pp. 391-418. For a more detailed history of early industrial growth in Springfield, Robert Forrant, " 'Neither a sleepy village nor a coarse factory town': Skill in Greater Springfield Massachusetts Industrial Economy, 1800-1900," *Journal of Industrial History*, Vol. 4 (2001), p. 24-47.

machine making in Worcester and Springfield. There existed a reciprocal relationship among machine tool builders, the hundreds of small, highly specialized tool-and-die shops and foundries that provided them with fixtures, tooling, gages, and made-to-order components, and final goods producers that greatly enhanced overall industrial competitiveness in the valley and established a plentiful pool of skilled machinists and engineers there.[5] The Armory and other Springfield-area machine-making firms and metalworking establishments had acted as a 'transmission agency' for the spread of production-enhancing techniques to users in numerous industries.[6] The *American Machinist* (1917) noted that in the Armory "…many good ideas are gathered from the rank and file and it is to the foreman's best interests to bring out the best that is in his men." Armory historian Patrick Malone concluded that "successful foremen at Springfield always followed this practice; most of them had risen from the rank and file in the production shop or had served an apprenticeship under a skilled machinist."[7]

In sum, Springfield became an important industrial center by building upon its rich skill base and the ever present sources of

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[5] The Fourteenth United States Census (1920) reported that 25 percent of the nation's machine tools were shipped from Massachusetts, Connecticut, and Rhode Island and approximately 20 percent of the country's machine tool firms employing more than 100 workers found along the Connecticut River. J. W. Roe's *English and American Toolbuilders* contains numerous genealogies of firms that trace the moves of key Springfield-area machine-making firms and metalworking personnel from plant to plant up and down the Connecticut River valley. The importance of collaboration for the diffusion of skill and technology was also noted by Deyrup in her study of the region's gun making industry. Deyrup, *Arms Makers*, p. 66; Frisch, *Town into City*, p. 15; M. Van Hosen Taber, *A History of the Cutlery Industry in the Connecticut Valley* (Northampton, MA, 1955).

[6] N. Rosenberg, "Technological change in the machine tool industry, 1840–1910," *Journal of Economic History*, Vol. 23 (1963), pp. 414-46. The development and diffusion of skills through movements of skilled workers within and across industries, represents one example of how learning systems developed during the nineteenth century, Much research needs to be done to trace the career patterns of skilled machinists and the pioneers in machinery design.

[7] P. Malone, "Little kinks and devices at the Springfield Armory, 1892-1918," *Journal of the Society of Industrial Archeology*, Vol. (1988), pp. 55-71. Malone notes that the Armory's shop culture placed a great value on practical experience, promoted shop-floor participation in machine design and incremental innovation and "encouraged respect for the ideas of 'practical men.'" pp. 64

manufacturing innovation that first the Armory and then other leading machine shops and metalworking firms provided. By 1880 Springfield factories printed and published books, produced envelopes and fine writing paper, sewing machines, church organs, ice skates, paint and chemicals, steam boilers, and fine watches. In 1910 Springfield machine tool builders, and electrical machinery firms and a 1913 directory of Massachusetts manufacturers identified eight firms making automobiles, six firms engaged in the manufacture of electrical machinery; and forty firms building machine tools and machine-shop products in the city.[8] Manufacturing was clustered in two centers: East Springfield became home to a massive Westinghouse plant and the Stevens-Dureya Car Company, the first automobile factory in the country; the North End, bordered by the Connecticut River to the West and Chicopee to the North, contained dozens of metalworking firms, small tool and die shops, and foundries that specialized in the production of fixtures, tools, and spare parts for these larger companies. Big or small, companies employed mainly skilled machinists, machine operators, and precision assemblers.

Springfield's diversified industrial base served as a magnet for skilled workers well into the 20th century.[9] For example, in the twenties 1,400 Rolls Royce workers built automobiles costing $20,000 in their North End factory.[10] According to car builder Henry Ford "The skill of Springfield's engineers and workers is traditional. Less well known is the fact that in its world-wide search for never ending improvements, the Ford Motor Company has found in Springfield dependable sources for a substantial portion of its equipment and parts used in building Ford

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[8] Commonwealth of Massachusetts, *A Directory of Massachusetts Manufacturers* (Boston, 1913).

[9] The Bosch company newsletter aptly titled The Craftsman contains evidence of the role highly skilled workers played in production. The December, 1948 issue carried the names of forty-nine workers who had reached twenty-five years seniority in the factory. Seventeen of the forty-nine were foreign born, including six from Germany and four from Italy. Among the group were four toolmakers, three die makers, two set up men, a production engineer, and the foreman of the experimental machine shop (*Craftsman*, 5, no. 8). *Issues of the Craftsman* from 1944-1958 are located in the Pioneer Valley Historical Society company archives, Springfield, Massachusetts.

[10] Orra Stone, *History of Massachusetts Industries*, Vol. 1, p. 550.

cars."[11] William Cooper, the Director of the U.S. Bureau of Foreign and Domestic Commerce, noted in 1930 that in Springfield "the large number of successful firms, including Van Norman, Chapman Valve, Westinghouse, and Bosch relied on worker skills to design and build new equipment and products." A rich shop-floor skill base, when combined with innovative and forward-looking employers, provided the region with a competitive advantage.[12] City employment grew at twice the state average between 1937 and 1947, causing a shortage of skilled machinists. To rectify the problem the armory enrolled hundreds of its employees in evening skills upgrading courses in the early 1940s, while American Bosch, Westinghouse, and Van Norman established their own collaborative training program.[13]

Precision metalworking allowed Springfield to grow and prosper from the 1930s through the mid-1950s, long after Massachusetts textile cities like Holyoke and Lowell struggled with job loss. Holyoke, Worcester, and Lowell reached their employment pinnacles in 1919; by contrast, Springfield employment rose dramatically through World War II. And from 1939 to 1947 Springfield's production workforce grew almost 62 percent, doubling the state-wide average. However, c. 1940-1950, firms began to pass out of local ownership, and thereafter plant and equipment investments lagged while new owners built factories in the South and overseas and shifted work to these new facilities. In a remarkable downturn, half of all Springfield manufacturing facilities closed between 1950 and 1987.[14]

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[11] *Springfield Republican* (*SR*), November 21, 1936, p. 13.

[12] William Cooper, forward to Charles Artman, *The Industrial Structure of New England* (Washington, D.C., 1930), p. xi. The report is based on information gathered from close to 5,000 manufacturers regarding methods of manufacturing, plant organization and marketing strategies supplemented by Federal manufacturing census data. It contains richly detailed analyses of the metalworking, machine tool building, textiles, leather, paper, printing and publishing and wood and furniture industries.

[13] *SR*, October 25, 1936.

[14] R. Forrant, *Metalworking Plant Closings. and Major Layoffs in Hampden County, 1967-1986* (Springfield: Machine Action Project, 1987); US Department of Commerce, Manufacturing Censuses. For the Holyoke story on mill ownership changes and disinvestment see William Hartford, *Working People of Holyoke* (New Brunswick: Rutgers University Press, 1990), see esp. ch. 8.

The Springfield Bosch plant was built in 1911 by Robert Bosch, the founder in 1886 of the Germany-based Bosch Magneto Company. Early photographs of the factory interior show lab-coated machinists producing parts for the emerging automobile and truck industry. By 1920 the four-story plant employed 3,000 workers and turned out 50 percent of the all of the electrical starter parts required by the U.S. vehicle industry. The outbreak of World War II led to the rapid expansion of the plant. In 1941 the U.S. Office of Production Management (OPM) authorized Bosch officials to build a $700,000 facility for aircraft magnetos. The Federal Defense Plant Corporation (FDPC) provided $400,000 worth of new machine tools for the expansion. Bosch also opened a production facility in Providence, Rhode Island which employed 600 workers. Growth might have been even greater, but the OPM denied a $2,000,000 federal appropriation to more than double Bosch's production capability for magnetos. The OPM wanted magnetos to be built primarily in plants shifting from automobile to war-related production. But even with this more modest expansion, the company generated profits for the first six months of 1942 four times greater than in all of 1941.[15]

Concerned about the loyalties of Bosch management, at the end of 1941 the United States Treasury assumed formal operation of the plant and the federal Alien Property Custodian's Office (APC) took possession of all foreign-owned stock. With ownership issues resolved, the plant received and additional $4,000,000 in leased machine tools from the FDPC in the Spring of 1942 to expand production.[16] By 1942 Bosch magnetos or fuel injectors appeared in virtually every U.S.-built plane, battleship, aircraft carriers, destroyer, and submarine as highly skilled machinists, operators and assemblers turned out precision parts with tolerances as close as 39 millionths of an inch, far less than the width of a human hair.[17] Sales rose to $13 million in 1941, reached $31 million in

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[15] *Springfield Morning Union* (*SMU*), February 14, 1941; *Springfield Daily News* (*SDN*), March 15, 1942.

[16] *SDN*, March 27, May 7, 1942; *SMU*, March 27, June 22, 1942.

[17] The Treasury Department determined that 23 employees-all non U.S. citizens- were security risks and they were fired. The article, "Top Notchers in Production" was quoted in *SMU*, April 6, 1945; *SMU* June 7, 1944. A 1945 issue of *Steel Horizon*, an industry trade publication, praised Bosch's quality work: "In the manufacture of diesel fuel injection equipment tolerances are measured not just in thousandths of an inch, which is generally accepted as precision manufacture, but in hundred-thousandths, a degree of accuracy not found in the finest of watches ... ."

1942 and peaked at $61.2 million in 1944, while in that year employment jumped to 7,300 from under 1,000 in 1941. The APC paid out small stock dividends, but chose to set aside close to $2 million in cash to assist it in what it anticipated would be a costly adjustment to peacetime production. These cash reserves would figure prominently in the plant's return to civilian ownership in 1948.[18]

Nearly every metalworking factory in greater-Springfield in the early 1930s remained non-union. However, by the early 1940s the United Electrical, Radio and Machine Workers of America (UE) had organized Bosch and several other plants. The 1940 local 206 agreement established the principle of plant-wide seniority and contained strong maintenance of membership language, stating that employees "will be required as a condition of employment with the Company to maintain their membership in good standing during the life of this Agreement."[19] In 1940 the union negotiated a grievance and arbitration procedure, seniority rights, six paid holidays, and a vacation schedule. All layoffs and recalls now followed plant-wide seniority rules. Wages steadily crept up as well, with eight and 10 cent per hour increases in 1938 and 1939. In five years base rates rose from a range of 20 cents to 50 cents an hour to a new range of 60 cents to $1.21.[20] The labor agreement greatly reduced the arbitrary authority of foremen, the catalyst that had sparked worker organizing in the plant.

In the early 1950s Bosch workers voted to withdraw from the U.E. and affiliate with the newly formed International Union of Electrical Workers during a vigorous period of anti-communist activity in the national labor movement. A week-long wildcat strike in 1958 and bitter

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[18] *Local 206 Labor Bulletin* (*LB*), March 23, June 2, 9, 1943. The *Labor Bulletin* was a monthly paper written and distributed by the local at the factory gates. Several issues of the paper are in the Local 206 archives in the University of Massachusetts Amherst library. Profits in 1943 were almost $4 million, however the APC held on to $2.5 million of it. *LB*, April 5, 1944, March 21, 1945.

[19] David Brody, *Workers in Industrial America* (New York, 1980), 178. *Local 206 Contract*, 1942, p. 30.

[20] *LB*, September, 1963. Nelson Lichtenstein, *Labor's War at Home: The CIO and World War II* (New York, 1982), pp. 46 - 47. By comparison, only after work stoppages and sit-downs throughout the early months of 1941 did the UAW and Ford settle on a 10 cent increase, the first for Ford workers in three years.

strikes in 1968 and 1971 over wage and job security punctuated a rocky labor-management relationship and surely influenced management's work location decisions from the mid-1950s forward.[21]

The APC sold the plant in 1948 for $6 million to AMRA, a two-year old financial holding company headed by Charles Allen, the president of the Wall Street investment firm Allen and Company. The holding company's board of directors included the major partners of several Wall Street legal firms as well as the presidents of the American Securities Corporation and the American Overseas Development Corporation.[22] In 1949 Allen merged the Bosch with ARMA Corporation, a Long Island, New York defense electronics firm, to form American Bosch-ARMA (ABA), with headquarters on Long Island. Bosch became one of several production facilities owned by a financial holding concern with a growth strategy predicated upon product and market diversification, cost cutting, and eventually the construction of low-wage, non-union plants in the South. The switch from a localized ownership-with at least some concern for the well-being of the Springfield plant and workforce-to ownership with the ability to play off against one another the interests of several production facilities in a search for maximum profits, commenced the slow downward slide to closure.

The Bosch plant's new owners had a growth strategy predicated on product and market diversification, wage and cost cutting, the construction of plants in the non-union South, and the establishment of numerous joint production ventures in Europe. Early on, management informed workers that a move of some work to a low-cost area had to be made for the company to preserve profits. A 'Dear Worker' letter read in part 'When one or more companies start producing in an area where operating costs are much lower, other competitive companies in the same

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[21] *Local 206 Contract*, 1942, 26, 33. For a discussion of the UE-IUE splits in Springfield and the strikes see Forrant, *Skill Was Never Enough*, esp. chs. 6 and 7. For a more detailed history of the UEIUE split see Ronald Schatz, *The Electrical Workers: A History of Labor at General Electric and Westinghouse 1923 -1960* (Urbana, 1983) and Ronald Filippelli and Mark McColloch, *Cold War in the Working Class: The Rise and Decline of the United Electrical Workers* (Albany, 1995).

[22] The sale was a particularly lucrative one for the holding company since at the time of purchase the plant was valued at $13.5 million and the cash reserves that the APC established during the war reached $5 million.

field also have to move in order to survive. It is either move or quit.' During 1959 contract talks, management once again warned workers of global wage pressures

> American Bosch's foreign competitors enjoy a greater and too frequently a decisive cost advantage over us .... A major cost factor is of course labour costs ... . For every dollar earned by an AB employee an employee of a foreign competitor is paid an average of only 25 cents. This means that where our average hourly rate is $2.66 the comparable hourly rate in West Germany is 66 cents, in Japan 27 cents and only 80 cents in the United Kingdom.[23]

Mississippi proved irresistible to Hess; referring to development officials there he fairly gushed that "They will help find a plant site; they will build a building and rent it to you at a very reasonable rate. They will arrange to put in railroad sidings; provide good roads to the plant; run in water and sewers and do everything else you need to make the proposition attractive." Across the South such concerted efforts to entice industries dated back at least to the early 1930s and in 1937 nine Southern governors agreed to establish a $500,000 fund to launch a national advertising campaign in leading newspapers and magazines extolling the region's cheap power and efficient and reasonably paid native-born labor.[24] Mississippi issued $5.5 million in industrial bonds by 1950 with good results for by 1959 new plants provided almost 36,000 jobs and paid out $100 million in wages. The program generated 76 percent of the state's increased employment and 34 percent of its earnings between 1940 and 1958.[25]

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[23] Forrant, *Skill Was never Enough*, p. 72.

[24] James Cobb, *The Selling of the South: The Southern Crusade for Industrial Development* (Urbana, 1993), pp. 7-8.

[25] Ibid., pp. 97-98, p. 100. One Mississippi city extolled the virtues of it's "wonderful labor, 98 percent native born, mostly high school graduates," who will "lower average hourly industrial wage rates 5 cents to 49 cents below other Southern states and from 50 cents to 95 cents below Northern states."

Secret plans to move work out of Springfield had begun several months before any public announcement was made. Bosch officials searched for a Southern site in 1952 and by early 1953 their focus narrowed to a handful of cities, including Columbus, Mississippi. Interested cities conducted a labor market survey for Bosch to determine how many women between the ages of 18 and 40 might seek employment in the new factory. For a time Columbus could not generate enough female interest in the jobs and the local newspaper reported that "The situation on the male registration appears good with the goal in sight. But on the other side of the picture it is not good. The number of white women has barely reached the halfway mark." Bosch officials surely knew that only white women took the survey and there was no evidence that they urged Columbus officials to do otherwise. At the time of the survey, Lowndes County (where Columbus was located) was the tenth poorest of 55 urban areas in Mississippi. In 1950, among Lowndes County's 38,000 residents, 18,500 were African American; statewide, African Americans comprised 45 percent of the total population. It appears that Bosch management wanted to keep the workforce as white as possible as one way to divide workers in the region while at the same time capitalizing on the fact that there had been no successful industrial union organizing in Columbus. The city extended the survey area to seventeen surrounding communities before 1,083 women and 923 men completed the questionnaire.[26]

To sweeten the Bosch deal, the city's Industrial Development Committee agreed to cover the costs of the land, and the construction of a new road, a water main, sewer lines, and power lines to the new factory.[27] And on April 14, news of the Korean War peace talks disappeared from the newspaper's front page as the city celebrated the Bosch decision to construct at $1 million factory in Columbus to manufacture small electrical motors to power windows, windshield wipers, seat lifts, and convertible tops for automobiles. Eight hundred

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[26] United States Bureau of the Census, *Census of Population 1950*, Vol. II, part 24 Mississippi (Washington, D.C., 1952). *Commercial Dispatch*, "Labor Survey on Proposed New Industry Begins Tuesday," March 2, 1953, p. 1; Ibid., "Labor Survey Climax Seen on Saturday," March 6, 1953, p. 1; Ibid., "Labor Survey Slow Despite Tub Thumping," March 7, 1953, p. 1; Ibid., "Labor Survey Passes Goal," March 15, 1953, p. 1.

[27] Ibid., "What is a New Industry Worth to You?" April 3, 1953, p. 4.

jobs were coming to Columbus, with 60 percent of the workforce to be white women.[28]

During the Mississippi move Charles Perelle became president and Chief Executive Officer of ABA. Perelle had worked his way up from part-time employment at a Boeing plant in Seattle in the early 1930s to become manager of Boeing's entire Canadian operation. In 1940 he directed production management at airplane manufacturer Vultee Aircraft, and at war's end moved on to Gar Wood, a manufacturer of speed boats and truck bodies, followed by a brief stint at ACF Brill, a bus manufacturer. When Charles Allen's financial holding company, which owned Brill, decided to liquidate it in 1954, Allen hired Perelle to run ABA.[29]

The decision to build in Columbus marked the first occasion when metalworking jobs left Springfield, it would not be the last.[30] In April 1953 Local 206 business agent Jim Manning urged union members to oppose the Mississippi move, labeling it the 'Mississippi Muddle': "Now we are facing a bitter fight to maintain a Bosch plant in Springfield and we mean just that." Hess came in for sharp criticism for betraying workers "in a manner as the Japanese Ambassadors did just before Pearl Harbor."[31] Manning argued that the move not so subtly masked an attempt "to get away from paid holidays; three weeks vacations; cost of living increases; pensions; paid insurance; seniority" and he urged unionists to defend their jobs. Local 206 president Jim Parker stated "This one time all of you must get into the battle, for though the North won the Civil War, the Union Army better organize and really win this one. When they open the gates of their new plant in Columbus, they will find themselves surrounded by IUE-CIO organizers."[32]

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[28] Ibid., "Am. Bosch Co. to Build Large Plant Employing About 800," April 14, 1953, p. 1. Bosch officials surely were aware that the work survey was being given to only white women and there is no evidence that they urged Columbus officials to do otherwise.

[29] *Fortune*, 1959, p. 115.

[30] *Springfield Morning Union*, April 15, 1953, p. 1.

[31] *Labor Bulletin*, April 1953; Hess letter to workers, April 15, 1953, in University of Massachusetts Local 206 archives.

[32] *LB*, April 1953, p. 1.

With chilling foresight, in an unsigned letter to the Bulletin, one unionist asked and answered "Is Bosch doomed in Springfield?" "The working class may succeed in postponing its final breakdown; they cannot avert it whichever way they turn, whatever remedy they resort to, they cannot overcome the fatal contradictions that gnaw ceaselessly at the workers' vitals... The moving to Mississippi plan is one of the desperate schemes to which stockholders have turned to increase their dividends."[33] In an effort to block the move, Bosch unionists took what turned out to be a disappointing trip to meet with the Massachusetts Congressional delegation. Local union officials wanted the delegation to introduce legislation to eliminate a provision in the Taft-Hartley law that permitted manufacturers bringing new industry to a community to receive a six-month exemption on minimum wage laws and wanted Congress to push for laws that would curtail defense contracts to any corporation running away from a labor agreement.[34] The delegation ignored these requests.

I.U.E. organizers went to Columbus in 1954 and successfully organized the plant a scant three months after it opened despite a pronouncement by Charles Perelle "we are not afraid of this (union) election."[35] Perelle had good reason not to be concerned for since 1952 well over a dozen efforts to organize transplanted manufacturing facilities in the Columbus failed. A full page advertisement in the Commercial Dispatch by a group called 'Citizens' appeared when news of the I.U.E. effort spread. The Bosch came to Columbus, the ad read "because our people are not easily influenced to rush into things based on fancy promises, high pressure methods or rosy claims. We are proud that our citizens are stable and that they make their own decisions based on true, complete facts. AB was looking for such a community." Playing very loose with facts 'Citizens' asked and answered the question whether there needed to be a union at the plant. "NO: Our investigation showed

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[33] Ibid., p. 2.

[34] Ibid., October and November, 1954.

[35] *Commercial Dispatch*, "Union Election Set for October 22," October 8, 1954, p. 1. For examples of failed organizing campaigns see the Commercial Dispatch, '"The Garment Plant Situation," October 30, 1953, p. 1; "Here is What the Union Can Do To You," November 19, 1953, p. 9; "Union Defeated By Plant Ballot," September 16, 1954, p. 1; "Beneke Workers Reject Union 2-1," September 17, 1954, p. 1.

that the company operated without a union for many years and that its relationships with employees ad the community were pleasant, harmonious and satisfactory." Finally 'Citizens' reminded everyone that "employees in our industries have not suffered from strikes and job loss. Let's keep this good record."[36] On the day before the election, in another ad, 'Citizens' reminded readers that unions caused violence, strikes, and force plants to move. "We are confident the local Bosch plant will continue to expand, provided they are left alone and can deal with any employee on the basis of their ability and initiative without 'outside help' from someone who claims to represent your interests. Could it be your hard earned dollars that really interest them?" Despite 'Citizen's' dire warnings workers voted for the union 121-74 marking the first successful organizing campaign in an industrial plant in Columbus.[37] But, in the near term, wages and benefits remained lower in Columbus than in Springfield, thus no let-up in the movement of work south followed the successful organizing campaign.

Senator John F. Kennedy Weighs In The Bosch move added to a lengthy list of closings and relocations in Massachusetts and almost a year after the union's trip to Washington, D.C. Massachusetts Senator John F. Kennedy prepared a detailed analysis of New England's economic problems. He warned that the "defense contracts in the aircraft and electrical machinery industries and the inflated government payrolls and other activities resulting from mobilization cover up the static position of the private civilian economy of the region" and pointed out that "Even after the Korean War boom nearly 40 percent of Massachusetts' textile workers were jobless ... . Instead of declining during the heavy mobilization year of 1951, unemployment increased 150 percent in Fall River, 103 percent in Lawrence, and far more in Nashua, New Hampshire, and in the Rhode Island textile mills."[38] In his Senate remarks, Kennedy proved prescient in realizing that job loss

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[36] Ibid., "Who Wins If Everybody Loses," July 25, 1954, p. 5. The *Commercial Dispatch* is the Columbus, Mississippi daily newspaper.

[37] Ibid., "Employees of American Bosch," October 21, 1954, p. 4; "Bosch Employees Vote for Union," October 24, 1954, p. 1. The news story was barely six lines long.

[38] Senator John F. Kennedy, "The Economic Problems of New England," *Proceedings of the 83rd Congress, First Session*, Vol. 99, (May 18, 1953), pp. 5054-56.

would not be confined to textiles and apparel as it had been in the 1930s and 1940s.

> According to the Springfield Free Press, the American Bosch Co., a permanent fixture in the industrial life in the city of Springfield, is leaving its location in that city for a free plant, free taxes for ten years, and low-wage labor in Columbus, Mississippi.[39]

Kennedy spoke against federal tax legislation that allowed the issuance of rapid tax amortization certificates to corporations that needed to build new plants to meet defense orders and argued that the program amounted to little more than a corporate subsidy to move jobs from the Northeast. J.P. Stevens had obtained such a certificate in March, 1951 to construct a plant in Stanley, North Carolina and a few days later shuttered a Haverhill, Massachusetts mill, putting four hundred people out of work. General Electric secured a certificate for $20 million to build a jet engine plant in Louisville, Kentucky and then determined that it required only a small area in the massive facility to build engines so filled the remainder of the factory with 19,000 jobs it removed from plants in Trenton, New Jersey, White Plains, New York, South Scranton, Pennsylvania, and Bridgeport, Connecticut. Similarly, Westinghouse received $30 million in certificates to build plants in Columbus, Ohio and Raleigh, North Carolina and shifted production jobs to these plants from Springfield, Massachusetts and Newark, New Jersey.[40] In January 1954 in the Atlantic Monthly Kennedy informed readers that there were some 70 textile mills shuttered in Massachusetts and that relocations in the machinery, electrical equipment, paper, and chemical industries were underway. Work shifts tended to be subtle at first, he warned. And in only a small number of cases:

> does direct migration take place through closing New England plants and transferring their operations to southern plants. More often, firms start by operating mills in both New England and the South, then tend to abandon

[39] Ibid., p. 5233.

[40] Ibid., p. 5235.

> their northern plants in periods of decline and later expand their southern operations when prosperity returns.[41]

Kennedy concluded that any development efforts predicated on low wages were not sustainable, for too many other regions of the world were being developed with wages that were lower than those found in the U.S. South. Eventually the South's low wage strategy could result in the region suffering "the same pangs of aging now suffered by New England" he warned.[42]

While the Bosch story unfolded, there was more bad news for Springfield's blue collar workers for rumors persisted that the massive East Springfield Westinghouse plant might close. While Westinghouse's Board of Directors issued statements to the contrary, a 1955 letter by plant manager James Weaver to Springfield's mayor did little to put the rumors to rest and quiet workers' fears. Weaver wrote in part:

> If we (Westinghouse) are to get our share of the going business the products we build here must be competitive in price with similar products built by other companies in other cities and states. If we are burdened with higher taxes than our competitors, only because we are located in what others interpret as a listless community, we're in trouble - real trouble, and in order to even stay in business must create off-setting economies in other ways.

Concerned that the city planned to pass its tax burden on to industries, Weaver wondered why Westinghouse should have any confidence in the city when even the Springfield Taxpayers Bulletin called the city "financially sick."[43] In mid-1958 local newspapers reported that a Westinghouse Board of Directors study had called for the East Springfield factory to be closed as quickly as practical and Westinghouse officials admitted that there was a plan drawn up to consolidate six

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[41] John F. Kennedy, "New England and the South: The Struggle for Industry," *The Atlantic Monthly* (January, 1954), p. 33.

[42] Ibid., p. 35.

[43] *DN*, July 30, 1958, p.l.

consumer products plants into two. Their press release stated "There is a continuing survey at our various Westinghouse plants across the country to determine what facilities are best fitted or equipped for the various products we manufacture." Several days later workers poured over newspapers accounts that work was going to be transferred from the East Springfield plant to factories in Mansfield and Columbus, Ohio. During the recent national Westinghouse strike many workers at the two factories had crossed picket lines and kept the plants open, so the move rewarded Ohio workers for 'good behavior' and reminded unionists that swift punishment could be meted out when workers 'misbehaved'. Finally, on October, 17, 1958 the union local's newspaper reported the corporation's decision to close the factory. Over the next four months management terminated 1,500 workers and thereafter the factory suffered a slow strangulation as employment fell below 200 before it closed in 1970.[44]

There is no evidence that Bosch and Westinghouse unionists, all members of the International Union of Electrical Workers, engaged in any concerted and coordinated efforts to organize a broad-based trade union response to the loss of jobs. Since there were several other I.U.E. factories in greater-Springfield that might have rallied in defense of jobs, this was most likely viewed by corporations and workers alike as a surrender to capital mobility and inevitable unemployment. At one point Local 206 officers called for the establishment of a movement to fight runaway shops and safeguard Springfield jobs. "The storekeeper, grocer, milkman and all other businesses will suffer from this move by industry out of the area unless something is done and done soon," a union flier read; but no coalition formed. And at Westinghouse, it appears that the rank and file wanted to ignore the situation. There, the rank and file sent a chilling message to any union leaders interested in publicly fighting for job retention. For even while rumors swirled that thousands of jobs could be lost, the local 202 rank and file soundly defeated William Liberman in his 1958 presidential reelection bid. Liberman had challenged

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[44] *DN* July 29, 1958, p. 1; July 30, 1958, p. 1; July 31, 1958, p. 1; August 12, 1958, p. 1. The union article was quoted extensively in *DN*, October 17, 1958, p.l. The Lima, Ohio Local 724 president wished Local 202 well and said " I know that it was leaders like you that made it possible for the scab-infested Ohio plants to receive a contract as good as the one we did in 1956."

Westinghouse management and advocated for a Massachusetts AFL-CIO boycott all Westinghouse products.[45]

Despite repeated assurances by Bosch management during the first quarter of 1955 that new work appropriate to the skill levels in the plant would take the place of that shipped South, this did not take place and by the spring unionists wondered whether the plant would lose even more jobs. The union urged management to think about their obligation to the community, and in a Bulletin editorial called on the corporation, as "an employer who has prospered and grown in this community to think of some of the debt it owes to its 44 years in this locality." However, appeals to community spirit fell on deaf ears for Perelle and his new management team had very shallow roots in the city.[46] In fact, floor space in the Mississippi factory more than doubled and in early 1958 management notified the union that generator and magneto products would be taken from Springfield to "complete the consolidation of electrical manufacturing at the Columbus plant, with the Springfield division concentrating on mechanical and hydraulic products." Alarmed, in February 1958 the Springfield Industrial Commission publicly appealed to corporate president, Charles Perelle to reconsider the move.

> As you are undoubtedly aware, the skilled labor and craftsmen available in this area far surpass any other area in the country. Any financial benefit that might accrue in another section of the country would be offset by inferiorworkmanship.[47]

After eleven days C.A. Sharpe, vice president of the corporation, met with Springfield Mayor Thomas O'Connor on February 25th and assured

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[45] Forrant, *Skill Was Never Enough*, pp., 186-188. In general organized did not mount any serious challenge to capital mobility at all and more often than not joined with the very same corporations that were vacating the industrial Northeast in ironically-tinged, highly publicized "Buy America" campaigns.

[46] *LB*, February, 1954; *SMU*, March 7, 1954; *AB*, April, 1954.

[47] *SDN*, February 12, 1958, p. 1; Industrial Commission letter to Charles Perelle quoted in *SDN*, February 15, 1958, p.6

him work would pick up. The increase, Sharpe claimed, would provide jobs for 70 of the 250 newly dismissed workers.[48]

By now Perelle had thoroughly alienated the rank and file and one shop floor poet caught the plant mood well.[49]

Perelle Psalm

> Perelle is our shepherd. We are in want
> He maketh many to lie on park benches
> He leadth many beside his still factory
> He restoreth our doubt in his administration
> (Yea, though we walk through the valley of unemployment)
> We will always remain hungry.
> He clobbers our rates with new methods
> Our expenses over-runneth our income.
> Surely poverty and hard living shall follow us, all the days
> Of the Perelle administration.
> And we shall dwell in a rented house forever.

Perelle had a less poetic but equally pointed message of his own for unionists when in a June 1959 letter he let them know that "American Bosch's foreign competitors enjoy a greater and too frequently a decisive cost advantage over us .... A major cost factor is of course labor costs." For 1959, Springfield's commercial sales fell to a third of what they had been in 1955 and Perelle placed blame for the slump on too high wages. "For every dollar earned by an AB employee an employee of a foreign competitor is paid an average of only 25 cents. This means that where our average hourly rate is $2.66 the comparable hourly rate in West Germany is 66 cents, in Japan 27 cents and only 80 cents in the United Kingdom."[50] With all high volume automotive parts production now in Mississippi, workers surely questioned whether they had any job security at all.

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[48] *SDN*, February 26, 1958, p. 1.

[49] "Perelle Psalm," *LB*, February, 1958, p. 2.

[50] Perelle letter reprinted in *SMU*, June 4, 1959.

In the early 1960s the corporation launched an aggressive campaign to control costs and weaken labor, led by Charles Beck, Perelle's successor at the top of the corporation.Several firms were purchased, including Bacharach Instruments and Packard Instruments, U.S. leaders in the production of electronic measuring and testing instruments for medical and radiation research; Pace Industries, a Tennessee defense manufacturer; MichiganDynamics, a producer of scientific and medical instruments; and European leaders in a full range of factory automation equipment, Hispano Suiza in the Netherlands and Steelweld in Great Britain. Finally, a joint production agreement with the British conglomerateDeHaviland Holdings Ltd., established a presence in important European defense and automotive markets.[51]

The Bosch's European acquisitions were part of a dramatic increase in domestic disinvestment and capital reallocation by U.S. corporations. Total overseas directinvestments in factories, office buildings, machine tools, and office equipment, less than $50 billion in 1965, reached $124 billion in 1975, and surpassed $213 billion by 1980. According to economists Barry Bluestone and Bennet Harrison profits from theseinvestments jumped from $5.2 billion in 1965 to more that $424 billion in 1980. Plant closings in the U.S. became endemic, and by Harrison and Bluestone's calculation "over the whole decade of the 1970s, a minimum of 32 million jobs were probably eliminated in the United States as a direct result of private disinvestment in plant and equipment." Beck's investments bolstered ABA's strategy to reduce production costs at the expense of the Springfield workforce and gain access to European markets.[52]

Bosch moves south and abroad had been designed to break whatever remaining hold labor had on the shop floor. When Perelle stepped down as president in 1964, his successor Charles Beck, gave an

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[51] *SMU*, March 23, April 8, 1967 and Forrant, *Skill Was Never Enough*, pp. 241-44.

[52] Wide scale work relocation and permanent job loss became very potent weapons in the U.S. corporate arsenal for the last 30 years of the 20th century. See, Bennett Harrison and Barry Bluestone, *The Great U-Turn: Corporate Restructuring and the Polarizing of America* (New York, 1988), p. 26. For a discussion of deindustrialization see Barry Bluestone and Bennett Harrison, *The Deindustrialization of America* (New York, 1982); Gordon L. Clark, *Unions and Communities Under Siege: American Communities and the Crisis of Organized Labor* (New York, 1989); John T. Cumbler, *A Social History of Economic Decline: Business, Politics, and Work in Trenton* (New Brunswick, 1989); Jefferson Cowie, *Capital Moves* (Ithaca, 2000).

interview to the business editors of the Springfield newspapers. He placed the blame for Springfield layoffs squarely on what he said was the $3 an hour wage differential between the Springfield plant and its European competitors. The remainder of the work in Springfield, extremely close tolerance final machining and intricate assembly of fuel injection pumps, was extremely difficult to automate and thus required large numbers of workers. Therefore, considerable labor savings could be realized in the shift of this work to lower wage plants. Beck warned that "competitive market conditions will determine the future of any facility in Bosch's corporate structure," and pointed out that the average hourly labour cost of Germany-based Robert Bosch, Springfield's chief competitor, stood at $1.52, compared to $4.45 in Springfield. The overseas purchases and joint ventures now made it possible to shift the intricate machining and assembly work to several European sites where highly skilled machinists and engineers worked for a lot less money and gave Beck an important trump card over the union. By the close of the 1960s factories in Italy and Holland started to manufacture several newly designed diesel fuel injection systems for the automotive and agricultural equipment market and more Springfield workers lost their jobs.[53]

Thereafter, a corporate shift in market orientation away from diesel and defense work and into the scientific and medical instrumentation fields occurred. And as a result diesel and aerospace sales fell to $45 million from $73 million between 1968 and 1971. The only division to register strong sales gains was scientific and medical instruments, which jumped to $36.6 million from $22.6 million. The Springfield plant was marginalized still further when in 1970 'Bosch' disappeared from the corporation's new name, AMBAC Industries. The 1971 annual report celebrated the fact that "27 percent of total sales and 40 percent of total profits came from scientific, medical, environmental, and industrial instruments, products all acquired or developed in the last five years."[54]

Management continued to press the issue of labor costs, arguing that wages needed to be dramatically lowered for, the Springfield plant to be

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[53] Forrant, *Skill Was Never Enough*, ch. 8. This decision was a serious blow since all of the prototype development and experimental machining for these new products was completed in Springfield.

[54] AMBAC, *Annual Report*, 1971; AMBAC, *Securities and Exchange Commission Prospectus*, 1971.

competitive in the global economy. But 'reduced costs' arguments carried little weight with the rank-and-file -- who dismissed them as a 'make the workers pay' approach to the resolution of shop floor problems-and provoked a series of bitter strikes, including in 1971 a 15-week walkout. The strikes surely hastened management's decision to exit the plant.[55]

During the 1971 contract talks management hammered at the wage differential and its functioning overseas production ventures emboldened negotiators to confront the local head-on. Even before the contract expired both sides made vigorous appeals to the rank and file. In an April 13 leaflet distributed at the factory gates the union assaulted the company's demand to time-study all incentive jobs using pre-determined engineering times, charging that this was tantamount to "rolling us back to the 1930's working condition era" when workers had no say over rates. In an effort to split the union, and in a move guaranteed to cause considerable anxiety among workers' families, management, mailed a 'Dear Worker' letter to every unionist's home. In the letter they claimed that they only wanted to insure that the plant's competitive position deteriorated no further, and pointedly reminded readers that over 1,000 Bosch workers were already on lay-off status. Now the specter of permanent job loss was on hundreds of kitchen tables and surely roiled the calm in many households. The letter concluded "We are in a difficult competitive position. We have been diligently reducing costs for more than a year. The Union must face the necessity for changes in the Agreement to enable the Company to maintain its competitive position and thus continue to provide and expand employment in Springfield."[56]

The strike commenced on April 22 with management charging that the union had not responded to its piece-rate proposal. In fact, throughout the strike the union refused to discuss what it believed to be the company's retrograde plan. But for management, the existing "inaccurate, unfair, and impractical pay system" made it possible for "Some employees with less than a reasonable effort to attain higher than

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[55] For an examination of union - management conflict in the Bosch, Robert Forrant, " 'Quality and Selling Price Go Hand in Hand, Like Ham and Eggs, Toast and Butter': American Bosch, Local 206, and the Blunting of Shop-floor Participation 1950 - 1970," *International Contributions to Labour Studies*, Vol. 6 (1996), pp. 1-27.

[56] Union 1971 contract leaflet dated April 13, 1971 and company letter dated April 16, 1971 in Local 206 archives, Series III, Box 8, University of Massachusetts Amherst.

average earnings" while other employees "have a limited earning opportunity in spite of their very best effort." Only the introduction of a new system could allow methods to be improved and costs controlled so that "we could earmark a reasonable amount for wage and pension increases in the years to come."

During the walkout management assured the union that they had no plans to shift production to Europe, but workers must have recognized their precarious position since the plant's military work had already been scheduled to shrink by close to 80 percent and the Italy and Holland factories duplicated Springfield's production capabilities. Through its control of numerous plants, management had gained the upper hand and reminded unionist "It is our responsibility to plan a course of action for American Bosch that can insure the survival of the Division. At this time the improved technology and capabilities of European manufacturers, their advanced engineering, low import duties and the low cost of transportation bring new competition and new pressure to bear with our efforts to maintain a volume of business in the heavy-duty truck manufacturing industry of this country." In a cynical move-and for added punch-the blunt letter reminded unionists that several Springfield metalworking plants were already closed and that "Some of these are substantial firms, national in scope, and not really affected by a temporary set-back or recession. They left Springfield because of a limited future considering manufacturing costs in this area."[57] Though vulnerable, workers remained on strike for fifteen weeks before they ratified a three-year contract with 75 cents an hour in wage and benefits improvements. This marked a significant increase over the company's 'final' proposal before the strike began of 41 cents, which had been contingent on the union's acceptance of the pre-determined time system. For in a bitter pill for management to swallow-and in what would prove to be a pyrrhic victory for the union -- the corporation failed to obtain the incentive program it so badly coveted.[58]

The final nail in the Bosch coffin was pounded in when in the early 1980s the plant's new owner, aerospace giant United Technologies, constructed a state-of-the-art plant in Columbia, South Carolina to perform the exact work done in Springfield. And on February 4, 1986 at

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[57] Hershfelt letter to employees, June 8, 1971, Local 206 archives, Series 111, box 8.

[58] *SDN*, July 24, 1971, p. 1.

the start of a scheduled round of contract negotiations, a terse twenty line memo informed the negotiating committee that:

> We are unable to continue operating four facilities with this continuing overcapacity situation. I, therefore, regret to inform you that a very difficult business decision has been made to close the Springfield manufacturing operation by the end of August of this year. The military products will be moved to Columbia, South Carolina; injectors to Brescia, Italy; and industrial products to Fluid Power of the Components Division.[59]

Three weeks later UTC spokesperson Alan Muncaster stated, "We have to do something or we're not a viable company anymore. We're stuck with manufacturing space and nothing to fill it and no hope of filling it." The Columbia, South Carolina plant represented a $140 million investment for UTC, and it was not going to remain empty for long.[60]

Responding to the announcement, a shocked and disappointed Springfield Mayor Richard Neal said:

> I feel betrayed, because the city of Springfield, in good faith, held a series of meetings, that began eight to ten months ago, in which we offered all kinds of assistance. And I never knew until today what was going to happen. Each step of the way we were told not to worry, that they were not going to close.... To tell me at 2:00 p.m. that the eventual phase out was imminent does not, to my mind, demonstrate high regard by that corporation for this community.

State Secretary of Labor Paul Eustace called the corporation's previous assurances that they would remain in the city "bold-faced lies." For sixty-one year old Donald Staples, union activist and 36-year veteran in the plant "It's not like they pulled the rug out from under us-it's more

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[59] Jon Adamson to all employees, *Plant Closing Memorandum*, February 4, 1986.

[60] *Holyoke Transcript-Telegram*, March 1, 1986, p. 1.

like they pulled the trap door out from under the hangman's noose." [61] The February announcement confirmed the predictions union leaders had made after watching 300 workers lose their jobs in the spring of 1985. In a scathing memorandum distributed to city, state, and federal officials the union warned "If all that were involved here was the loss of 300 or more well-paid jobs, there would be enough cause for very serious concern." And went on:

> But these job losses are only the beginning. A clear pattern of mismanagement and disinvestment on the part of United Technologies, the parent corporation of American Bosch, point toward a phase-out of all operations at American Bosch's Springfield plant. Repeated management assurances that American Bosch and UTC have a strong commitment to continuing operations are contradicted by management actions.... All of this occurs while the markets for AB's traditional product lines are booming. Other firms are becoming more cost competitive and investing heavily. Meanwhile we see UTC milking this plant for whatever remains here to be taken in profit and moving all its jobs, all its commercial product lines and much of its machinery elsewhere.

The union reported that management turnover had been close to 100 percent since 1981 and that ten production managers had been fired or resigned since November, 1984. It concluded with the somber warning that "The union has cooperated fully in trying to stem absenteeism, in trying to increase production. We've shown results. Such cooperation has been repaid with layoffs and the promise of more layoffs. We see clearly the impending closing of this plant."[62] The company offered a response much like the man others that had been issued over the previous thirty years.

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[61] *SMU*, February 5, p. 1; February 7, 1986, p. 1.

[62] Local 206, *UTC Disinvestment Points Toward American Bosch Closing*, Summer, 1985.

> We want to maintain all four of our plants, including the two in Europe, but we have to redirect a number of product lines to better utilize our manufacturing capacity. Nothing has changed since we announced those 80 layoffs. We've done exactly what we said we'd do. There are no plans to shut the plant down.[63]

Seven months later United Technologies announced the closing, and between February and August 1986 it relocated all diesel truck work to South Carolina, dispersed the plant's hundreds of machine tools to its factories around the world and fired 1,200 people.[64] At century's end events the aircraft engine industry reflects several trends discerned in the 1950s and 1960s in the Bosch plant. General Electric and Pratt and Whitney (owned by United Technologies Corporation) have the wherewithal to manufacture around the world and this makes it possible for both corporations to play-off workers from different unions and nations to ascertain the most expedient place to do business. Thus, unimpeded by labor, GE is able to shift work between Florida, Massachusetts, Ohio, and Mexico with impunity, laying off and recalling scores of workers in the process. Pratt and Whitney behaves similarly as it shifts work between Connecticut, Florida, and Maine and participates in numerous overseas ventures in Malaysia, Taiwan, and China to increase its global reach and drive down labor costs.[65] And today, the North End contains only one manufacturer and block after block of triple-decker wood-frame apartment buildings-first home to the thousands of workers who made their way to Springfield-have burned down, been torn down, or are in thorough disrepair. In a neighborhood that had teemed with working class pubs and diners are a refuse recycling center and several low-rise office building housing lawyers, a

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[63] *Holyoke Transcript-Telegram*, June 27, 1985, p. 10.

[64] The financial costs of the closing were staggering. Over two years the 1,000 lost jobs resulted in $31.1 million in lost income to the area, the additional expenditure of $9.1 million in unemployment insurance, welfare, and other benefits, and $8.6 million lost in federal and state taxes. Cost accounting in Forrant, *Metalworking Plant Closings and Major Layoffs*, July, 1987.

[65] See for example Beth Almeida, *Are Good Jobs Flying Away? U.S. Aircraft Engine Manufacturing and Sustainable Prosperity* (New York, 1997), Working Paper No. 206, Jerome Levy Economics Institute.

cable television company, a medical complex, and eight industrial smokestacks, stark physical reminders of a once thriving industrial center.