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ABSTRACT

Mass production, introduced into the factories of the United States in the early 1900s, required workers who were trained to be cooperative, loyal to the company, and possessed specific job skills to operate the machinery. To produce these workers, American corporations turned away from the educational programs of the public schools, and began to create their own industrial training programs. One of the most successful of these programs was the corporate educational program begun by P. W. Litchfield at the Goodyear Tire and Rubber Company in 1913. Litchfield's solution was the "Flying Squadron" training program. From this base, the corporate educational program expanded and, by the 1920s, was called the Goodyear Industrial Training Program. The formal educational program was offered through the Goodyear Industrial University, an on-site factory-sponsored educational institution. By the 1930s, this program had grown and become recognized as one of the largest of the industrial educational programs in the United States. Lists of the successful placement and promotion of squadron men in books about the era point out how very successful the corporate educational policies and programs at Goodyear were in selecting, training, and keeping men in the organization and drawing on their talents to keep the organization a unified one. Education at Goodyear continues today and the "Squadron" idea is still in use, but the ideal of corporate education as advanced by P. W. Litchfield faded after the 1930s because of declining economic conditions, union demands, and competition by the public schools. Today's training programs are specifically job-related rather than aiming at the general education of the workers. (KC)

P. W. LITCHFIELD AND EARLY CORPORATE EDUCATION AT THE GOODYEAR TIRE AND RUBBER COMPANY

by

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The industrialization of America during the period from the 1880s to the 1930s led to major economic and social upheavals and caused the country to face a shifting of traditional views of the American way of life. The rise of scientific research, the creation of mass production systems, shortages of both skilled and unskilled manpower, the development of the efficiency movement, the weakening of the apprenticeship system, the labor movement and unionism, and the urbanization of America were factors which led to these changing images of American society and the place of the worker within it. This paper examines the role played by one industry in preparing laborers to take their places in this new social order based on the values of industry.

The Setting: Industrialization

An example from the wave of new ideas which arose in industrializing America, corporation-sponsored programs of education emerged as a result of the progressive changes and the manpower needs created in industry as the mass production system became dominant. Corporate educational programs were established to meet the specific needs of industry, but they were implemented outside the mainstream of education from 1900 to 1930 because no adequate secondary level industrial training existed in the United States.

Schooling as preparation for jobs in industry was viewed by many as the business of business. Support for maintaining this point of view was the fact that those traditional or special schools which did attempt to train men for work either could not meet industry's specific needs or could not train enough men as quickly as needed. Mainstream schools could not adequately prepare the type of men needed in industry because mass production techniques and machines were constantly being improved or replaced and production methods revised. These rapid changes in the industrial setting not only meant that schools had difficulty creating (or duplicating) training programs, but also that automation was developing at a pace difficult even for industry to meet in its preparation of a skilled work force. Schools, however, could not hope (or afford) to compete in the training of men for industry if specific jobs might not exist once students graduated.

Groups in industry and groups in education came to advocate diverse approaches to formulating specific objectives for corporate educational programs as well as for mainstream vocational educational programs, and the ideals or goals relevant to one group seldom blended with those of the other. Arguments about corporate education in relation to our country's industrialization and to the incorporation of such training into the American school system reflected American attitudes toward industry and the reasons why corporate education was established outside the mainstream of education.

American educators have always pushed for the development of the most adequate modes of education to suit the needs of society, regardless of location. The major questions which have arisen about

those modes are related to curricula and control. Corporate education presented a particular problem related to both issues because of the implications of education in industry and the fear of perpetuating the negative influences of industrialization on society. The clash which began between educators and corporations in the early 1900s focused on the idea of autonomy or victimization of workers.

Educators sought most actively from 1900 to 1917 to promote "industrial" education in public and special schools rather than in industry. Their goal was to reduce the power and the control of corporations over the worker, and to increase the ability of the worker to fit into the social order without loss of personal autonomy or independence. However, industrialists countered an important theoretical claim made by educators. Traditional schooling was being held out to the public as a means by which to realize economic advancement. Corporate managers noted the obvious gulf between opportunities for the rich and opportunities for the poor. The promise of economic advancement through schooling could not be afforded by many; a corporate educational program was usually free, job related, physically available to workers, and proven (by well-advertised company promotions) to offer opportunities for job success, advancement and personal fulfillment.

Industrial leaders began to see themselves, "rather than the statesmen and educators, carrying the destinies of modern America on their shoulders."[1] They considered their responsibility that of

[1]Arthur Pound, The Iron Man in Industry: An Outline of the Social Significance of Automatic Machinery (Boston: The Atlantic Monthly Press, 1922), p. 85.

guiding and training the worker's intelligence and creating a cooperative spirit and loyalty to the company, thereby attributing democratic values to industrial situations. The cultivation of attributes of what John Dewey called industrial intelligence--personality adjustment, habit formation, and value conditioning[2]--were part of this training. Though some in corporate leadership positions were not amenable to incorporating such "psychological" aspects into the curricula of their programs, others often corporated with liberal reformers, in the sense that they used their ideas to correct worker problems, because such reform was necessary to obtain stability, harmony, and other conditions necessary to keep production moving and profits predictable.[3]

Skill dilution and the simplicity of many manual operations required little mental ability or initiative, but demanded the development of worker attitudes conducive to maintaining a spirit of cooperation and which would allow the worker to survive in the new work culture. Order, regularity, punctuality, adherence to rules, and loyalty were attributes which could be developed through moral training in the public schools; but the "preparation for opportunity" ideology of nineteenth-century educators in practice did not satisfy the needs of industry or of the worker.[4] Industry found it easier to acculturate the worker than to adjust or restructure the work situation. The door to opportunity was closed to many by the restrictions of the

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[2]Paul C. Violas, The Training of the Urban Working Class: A History of Twentieth Century American Education (Chicago: Rand McNally College Publishing Company, 1978), p. 130.

[3]Ibid., p. 7.

[4]Ibid., p. 5.

mass production system and the new corporate order; it was opened for those within the industrial setting who demonstrated their loyalty and accepted corporate values.

Corporate education was promoted by industrialists as meeting more than just the needs of the companies. As Carnegie before them had attempted to restore the faith of the working man by "casting the rich men of America into the role of saviours of American opportunity,"[5] so the managers of modern industry portrayed their attempts to provide educational opportunities and chances for advancement within the corporate structure as the means to dispel the confusion and violence which had resulted from the threat to job security and harmony by the new mass production system.

A goal stated by both educators and industrialists was the "restoration of stability to American society."[6] Unfortunately, the opposing viewpoints of each group regarding the autonomy of the worker forced their efforts to remain largely independent of each other. As has been the history of efforts to establish a positive relationship between industry and education, the chance for cooperation and integration of corporate training and mainstream educational programs was lost.

American manufacturers took upon themselves the task and responsibility of providing more comprehensive, job-related types of educational programs to prepare workers to fit into the corporate

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[5]Henry J. Perkinson, The Imperfect Panacea: American Faith in Education, 1865-1965 (New York: Random House, 1968), p. 124.

[6]Ibid., p. 1.

order. American educators were forced to assume responsibility for those aspects of education which did not attempt to duplicate corporate educational programs.

One response, by a corporation, to the problem of satisfying industry's special manpower needs and maintaining smooth production was the corporate educational program begun at the Goodyear Tire and Rubber Company in 1913. Founded in 1898 by F. A. Seiberling, Goodyear grew so rapidly that it soon faced severe shortages of workers, which hindered production. The solution to these production problems was proposed by P. W. Litchfield, a Bostonian and 1896 M.I.T. graduate in chemical engineering, who had joined the company in 1900 as Production Manager.

Litchfield's solution was the "Flying Squadron" training program. From this base, the corporate educational program expanded and, by the 1920s, was called the Goodyear Industrial Training Program. The formal educational program was offered through the Goodyear Industrial University, an on-site factory-sponsored educational institution. By the 1930s this program had grown and become recognized as one of the largest of the industrial educational programs in the United States.

Goodyear's corporate educational program followed the type of policy and organizational structure which had been created by the R. Hoe Printing Press Company of New York in 1875, the first corporation school in the United States. These standards were used by companies

other than Goodyear but the reason Goodyear was selected for this study was because it represents a cohesive structure; one into which the most common elements of an industrial educational program were successfully incorporated.

This paper concentrates on tracing the development of the Goodyear Industrial Training Program from its formal beginning on May 1, 1913 through the 1920s because it was during that period that the program reached a well-organized, viable form and modelled most closely the common elements of American corporate educational programs. The study concludes with the late twenties because 1930 was a major point of transition for the program, the company, and the country due to the severe depressions and labor unrest of the 1930s.

Central in its value to this study was the examination and inclusion of relevant portions of the personal and business philosophy of P. W. Litchfield. Litchfield's position of power and influence within the company executive structure--he rose to the presidency by 1926 and in 1940 became the chairman of the board--combined with his desire to incorporate an educational policy into the company management policy network led to the success of this example of corporate education.

The executive powers and personal influence Litchfield wielded throughout his tenure at Goodyear led to important company policy decisions about labor relations and education. Litchfield's policy considerations included an understanding of the value of personnel and the development of a strong, positive labor-management relationship. His extensive executive powers provided him with the means by which to achieve this desired interaction as a consequence of the labor policies

and educational programs he implemented. His ideas became those from which the educational program policy network was formulated and his executive decisions became those by which these programs were implemented. This "corporate educator," P. W. Litchfield, was the person most instrumental in developing the industrial training programs at the Goodyear Tire and Rubber Company.

The Innovator: P. W. Litchfield

Corporate education at Goodyear was the "creation" of P. W. Litchfield. The organizational structure--the criteria for selection, the students enrolled, the attendance and graduation requirements, the curriculum, the personnel--are shown to have been personally supervised by him from 1913 to 1930. School policy was written by Litchfield and all changes were directives which originated in his office. He delegated authority to those persons who met his personal standards for responsibility and advancement within the Goodyear organization and, through his industrial "lieutenants," he perpetuated a consistent, predictable, successful educational program. The analysis of this example of corporate education was made more easy due to the coherence and interrelatedness of Litchfield's business philosophy and his educational ideas and policies.

The comparison of Litchfield's personal views with those policy decisions he enacted concerning management, production, efficiency, and education and job training demonstrate how deeply his ideas were incorporated into company management policy. He exercised complete control over the areas of management, production, personnel, and public and

company relations. Innovation was his trademark and the acceptance of his ideas for on-the-job training combined with formal classroom training allowed the development of the Goodyear Industrial Training Program and Goodyear Industrial University.

Family influence played an important role in the development of Litchfield's positive attitude toward education, which he viewed as a means by which one could strive for intellectual excellence and personal success. Education was highly valued by his family and they believed, based on personal experience, that education could allow one to overcome the negative effects of heredity and environment and increase the positive aspects of both influences. One could pay the "debt" owed to the past by transmitting one's good qualities and wisdom to succeeding generations.

Litchfield outlined the points of his personal and business philosophy in the first of his three books, Autumn Leaves: Reflections of an Industrial Lieutenant, which he wrote after he became Chairman of the Board of Goodyear in 1940. The major points of this work are summarized for this study.

"Time" was considered personal capital by Litchfield and he believed that if it were properly budgeted and devoted to educational and other types of personal improvement, it could allow one to make, within the limited span of one's life, important contributions to the advancement of civilization. Litchfield believed every person should become a "capitalist" and invest time efficiently to achieve the greatest return.

Success, to Litchfield, was to be achieved by the proper investment of an individual's time. He outlined the conditions over which an individual had control and the development of which enhanced chances for success. These "Five Points for Success" were as follow: health, character, ability, teamwork, and thrift.

Health was a primary consideration for Litchfield and he frequently evaluated a person on the basis of physical fitness. Character, Litchfield believed, could be developed through moral education. Both these points were criteria for entrance into the educational programs at Goodyear. Ability was related to the practical application of learning. Ability was necessary to maintain a company organization which could meet changing demands. Ability could be recognized and developed, along with a sense of teamwork, to create a strong factory organization while allowing personal fulfillment and success for the individual worker. Thrift Litchfield considered necessary for continued success. Through efficiency and industry, an individual could save money, make better use of time, and take the best advantage of opportunity. Litchfield also stressed the importance of these points for company success.[7]

Litchfield felt if management earned the loyalty of the men, they would present a united front when faced with difficulty. Education could improve this relationship, thought Litchfield, and also could reduce the influence of socialism and unionism. Education could

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[7]P. W. Litchfield, Autumn Leaves: Reflections of an Industrial Lieutenant (Cleveland, Ohio: The Corday & Gross Company, 1945), pp. 99-105.

instill democratic ideals and a sense of obligation to the corporate system and to the perpetuation of capitalism, freedom, and the free enterprise system.

Another thesis which Litchfield developed was "Business" as a partnership of "Labor, Capital and Consumer." This relationship was explained in his second work, The Industrial Republic: Reflections of an Industrial Lieutenant, as a part of Litchfield's ideas for creating an industrial democracy. Litchfield believed this three-party relationship had to be a balanced partnership to remain successful and to benefit each of the partners. Litchfield felt the American tradition of independence and self-reliance stressed that one not come under the financial control of another.[8] The "Wage System," which had resulted from persons with no capital selling their labor for a fixed amount, contributed to the lack of control over capital by workers and to their reliance on an employer.[9]

Labor's diminished power, due to the "wage system," allowed the distinction of two classes, "Labor" and "Capital," to develop in sharp opposition to each other. Litchfield described the extremes of the two classes as follows: "a class of capitalists, who do not work, and a class of laboring men who do not save and who have no capital." Obviously there could be no community of interest between the two groups.[10]

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[8]Ibid., p. 76.

[9]P. W. Litchfield, The Industrial Republic: Reflections of an Industrial Lieutenant (Cleveland, Ohio: The Corday & Gross Company, 1946).

[10]Ibid., p. 13; and P. W. Litchfield, "Our Responsibility for Goodyear's Future," in Some Wingfoot Clan Editorials (Akron, Ohio:

Litchfield believed America's continued success lay in an unhindered private enterprise system. He felt all partners in the system benefitted when it was properly balanced but that "the size and complexity of our modern industrial system has tended to ob cure some of the basic things" about the relationship.[11] The profit motive was the accepted supreme incentive of free enterprise but the class battle between Labor and Capital had caused a breakdown, through misunderstanding, of other aspects of the system, especially the roles of each partner. Litchfield sought to weld the business partnership of Labor and Capital through education, and to meet the responsibilities of both to the Consumer by producing more and better goods at less cost.

Litchfield's "Industrial Republic" idea was an effort to remedy the "ills" of the existing system in industry by replacing it with a system based on labor participation in business through representation in decision making. Establishing a "community of interest amongst the people" would be achieved by educating workers in the principles and practices of business, through which education "industrial citizenship" in an "industrial democracy" could be earned. In this way the success of the "industrial democracy" could be more assured by including the greatest number of workers possible, which would result in decisions made for the greatest good.[12] Industrial citizenship leading to labor

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Goodyear Tire & Rubber Company Archives, June 1, 1912 to August 10, 1919), p. 109.

[11]Litchfield, Leaves, p. 82.

[12]Litchfield, Republic, "in explanation," pp. 5, 19-21, 25-26.

representation in policy making would hopefully also reduce the influences of socialism and unionism. Creating a "company union" was hoped to stimulate loyalty to the "Industrial Republic" and to perpetuate the free enterprise system.

Litchfield also expressed his faith and trust in the worker by attempting to establish his ideas for an "Industrial Republic" through the model of industrial representation called the "Industrial Assembly," established at Goodyear in 1919. Litchfield said that "too much had been spent in the past to obtain the good will of the customer and of those who furnished the capital." It was time for the worker to benefit from company good will.[13]

The "Industrial Assembly" was an effort to create an "industrial democracy founded upon labor citizenship developed under growing responsibility toward complete management."[14] Litchfield was viewed by more conservative business managers as having "socialist" ideas because he wished to see Labor in control of Capital. However, Litchfield felt such control would reduce the problems caused by the current condition of Labor-Capital misunderstanding:

> The only correct solution of the problem which will remedy the defects of the present system will come when labor controls capital, when the laborer saves and becomes a capitalist, and when the capitalist works.[15]

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[13]Arthur Pound, Industrial America: Its Way of Work and Thought (Boston: Little, Brown & Co., 1936), p. 64.

[14]Ibid.

[15]Norman Beasley, Men Working: A Story of the Goodyear Tire & Rubber Co. (New York: Harper & Brothers Publishers, 1931), p. 134.

This form of business implied that the managers of capital must educate labor to become capitalists who work. The paternalism of such a business attitude is obvious. Through such a benevolent attitude of education Litchfield hoped to realize an "Industrial Republic" at Goodyear through which the rights of both capital and labor would be preserved and the balance of the business partnership assured.

In this "Organization" of Capital and Labor, this "Industrial Republic," Litchfield stated that after Labor had received its wage, and Capital its rate of interest, the surplus should be divided between the two "in some proportion" and not all go to Capital. Litchfield believed this division could take the form of profit-sharing or joint ownership of stock.[16] To effectively implement such an organization, Litchfield believed, required the education of the worker as preparation for assuming the position of an "industrial citizen" in this Industrial Republic.

The development of the mental resources of the workers stimulated invention and research which resulted in increased efficiency in production and new and better products at lower prices. These products increased the market for rubber goods which in turn expanded company production, created more jobs, and insured company success--a beneficent cycle. This, said Litchfield, was the job of business--to produce goods at the lowest possible cost--and necessitated the development of knowledge from available resources of mental power and the application of this knowledge to mass production techniques. This

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[16]Litchfield, Republic, p. 18.

was the major reason for the development of corporate educational programs--efficiency. Management's responsibility to the partnership of Labor, Capital and Consumer was to develop these manpower resources through education related to the job and through the mental and physical improvement of the worker, all of which efforts would contribute to efficiency.

Training programs were created to develop men rapidly under the twin stimuli of education and responsibility. Education was the preparation of the worker for the opportunity and responsibility of advancement through promotion. Education was also an aspect of industrial relations programs and a means by which those deserving promotion could be identified and selected from the mass of workers in the giant industrial complexes. Promotion involved additional responsibilities and greater participation in the business partnership. Promotion from within the company rewarded education and personal improvement, inculcated loyalty, and built morale. The incentive of education as preparation for promotion was obviously a consideration of both Labor and Management. Educating people in the principles of business not only made those with greater management ability more visible, but also improved relations with those who remained a part of the labor hierarchy.

Litchfield considered training the most effective and most lasting of the efforts to establish positive labor relations. Success in keeping such a large organization efficiently run and smoothly functioning, said Litchfield, "depended on management's ability to extend itself through properly trained men."[17] He wished to capitalize most

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[17]Beasley, Men Working, p. 55.

on this investment in people through developing company loyalty because "the dividends on the spirit of teamwork are always large."[18] By locating and training cooperative and loyal men for executive responsibilities he could, via promotion, perpetuate a flow of men educated in company values and policies and build with them a continuing, strong organization at Goodyear.

Litchfield perceived himself as not a "Captain of Industry" but as an "Industrial Lieutenant." Classifying his job as that of facilitator and innovator, he believed he occupied a middle ground between Capital and Labor and that it was a responsibility of his position to maintain business practices fair to both parties. The educational training of the workers best suited that responsibility because both parties did benefit from the results of Goodyear's training programs.[19]

Litchfield perceived the education of workers as a means by which he could balance factory production, and achieve harmony in the work setting. By promoting a cooperative spirit of teamwork and company loyalty through education in the principles and practices of business, Litchfield felt confident that he could realize his ultimate goal of an "Industrial Republic." Education at Goodyear, therefore, went beyond the training of men in specific job-related skills, and assumed

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[18]Ibid., p. 139.

[19]Hugh Allen, The House of Goodyear (Cleveland, Ohio: The Corday & Gross Company, 1949), p. 67; and P. W. Litchfield, The President Talks to the Men: A Group of Radio Addresses by P. W. Litchfield, President, Th Goodyear Tire & Rubber Company (Akron, Ohio: Goodyear Tire & Rubber Company, 1933-1935), p. 9.

a socializing function through the preparation of men for their roles in the corporate order.

The School: Goodyear Industrial Training Program

Corporate education at Goodyear was created in 1913 to meet the demands of this rapidly expanding organization for skilled manpower and to increase the efficiency of factory operations. Faced with the problem of severe worker shortages, Goodyear (as did other companies) attempted to find solutions to the problem of rapid worker turnover. Attempts to remedy the high rate of labor turnover included creating more housing, improving working conditions, dealing with personal problems and offering other incentives to attract and hold workers. Industrial relations departments, organized employee activities, health programs, employee stores, banks, clubhouses, and employee newspapers, were examples of such incentives. All of these solutions, and others, were implemented by Litchfield at Goodyear. Educational programs were the most successful.

P. W. Litchfield's intended purposes for instituting this experiment in corporate education were two-fold. He wished to furnish, for capable men, the opportunity to take advantage of educational training programs as preparation for promotion, and to provide the company with a group of men both knowledgeable in the management and organization of the corporation and skilled in all aspects of factory production.

Litchfield considered industrial education to be based on the need of the company to win the race for business success through

competition with other rubber companies. Schooling at Goodyear was viewed as an investment in employees, through whose ideas and labor new goods and production techniques would be conceived and implemented and the company would produce more, better, and faster. Education would create a work force which would provide the company a return on its investment through savings in costs, increased and balanced production, worker contentment and goodwill, and through the development of a pool of intelligent, trained men from which to draw future executives.[20]

The Goodyear Industrial Training Program and Goodyear Industrial University were unique among other examples of corporate education because the focus at Goodyear was on the development of the "whole" man. While other companies were offering narrow job training programs in specific skills, the Goodyear idea included general educational subjects in order to broaden the educational opportunities available to workers. Educational programs at Goodyear were created to meet the needs of the company but were expanded to include the needs of the worker. The Goodyear corporation school went beyond the narrow limits of training in specific job skills to the training of the whole worker.

Training at Goodyear was intended to be education in cooperation taught in a real-life setting. It became not only education for a job but also education for work. Through the organization of worker efforts, Litchfield planned to increase efficiency in the company and to promote the idea of worker participation in the partnership of business. The democratic ideal of being able to rise within the "system"

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[20]Beasley, Men Working, p. 138; and Litchfield, "Industrial Education" in Editorials, pp. 88-89.

via opportunity, ability, education, and promotion was to be realized at Goodyear. By establishing a community of interest--a partnership of Labor, Capital, and Management--Litchfield hoped to make workers more aware and appreciative of their part in the production of wealth, and in the distribution of that wealth. All members of the business partnership, said Litchfield, should receive a return on their investment of money or labor in direct proportion to the value of their contribution.

In 1913 the most important and longest lasting of the incentive efforts at Goodyear was organized. The "Flying Squadron" was started as a program through which a reserve force of workers could be trained to fill in when needed and keep production running smoothly. Litchfield believed that Squadron men would act as visible proof that a man could, through training and education, work his way up in the company hierarchy. Squadron men also would create goodwill by stimulating worker interest in company policies and business and would pass their knowledge to others. In return for their efforts to balance production and foster worker contentment, the Squadron members would receive an advanced education, would learn more about business, would meet those in management positions, and would be in line for promotion. Ninety-eight percent of all Squadron members from 1913 to 1920 were promoted, therefore, the chance of each man for advancement was excellent.[21]

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[21] Coagulator (Akron, Ohio: Goodyear Tire and Rubber Company Archives, 1927), p. 29; and Paul Stevens, "The Squadron Plan as a Factor in Industry" (Thesis, University of Akron, 1924), pp. 5-9.

The Squadron idea formed the base from which the corporate educational programs at Goodyear expanded. Admission to these programs was an important point of transition for many Goodyear workers. Litchfield's "five points for success" were used as criteria by which to measure the men for selection and promotion. Men were admitted to factory school courses on the basis of age, physical condition, personality, work record, education, ability, and the desire to improve themselves.

The programs offered at Goodyear were a combination of on-the-job training and related formal classroom instruction. Learning the skills necessary to perform a task often involved on-site training. Such training was often supplemented with classroom instruction to save more time which was frequently lost to an inability to communicate efficiently on the assembly line or to a lack of understanding of the new concepts of production. Emphasis was placed on providing both specific and general subjects through which the workers would gain a well-rounded education. Physical development, in addition to mental discipline, was required of students and proper habit formation and attitude development was expected. Men were to become trained in specific job skills, in "industriousness," and in the proper use of leisure time. The development of the total person was considered necessary before an individual could contribute to society (and industry) through both mental and physical power.

In the years which followed 1913, the training program remained fairly flexible as this experiment in corporate education became more organized and more efficient in meeting the changing needs of the

company. The Squadron idea was expanded to include more divisions of specially trained men and, by 1916, the educational ideas of Litchfield had become so popular and successful, the "school was thrown open to all men in the Goodyear organization who cared to take advantage of its opportunities."[22] "Owl" (night) courses were organized and offered to all Goodyear men and were run along the same lines as the Squadron programs. The needs of the workers for education were being more fully met by this corporation school.

As the corporate educational ideas of Litchfield were enlarged, subdivisions of existing programs were made according to the needs and the economic resources of the company during each year from 1914 through the 1920s. For example, in 1917 "The Silents Squadron," a group of deaf-mutes, was organized as was the "Canadian Squadron." Each became a model of success, the first helping to broaden the opportunities for similarly handicapped persons throughout the United States, and the second establishing a model for other national and later international squad training programs.[23] During the first world war an "Aeronautical School" with "ground" and practical flying instruction was implemented at the Goodyear Zeppelin Corporation.

A "Co-Operative Squadron" was organized in the 1920s which involved a five-year course of study in mechanical, electrical, or aeronautical engineering, and was set up by Goodyear and the University of Akron. These examples of rapid growth point to more than success for

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[22] Litchfield, "History of the Factory School" in Editorials, pp. 78-79.

[23] Coagulator (1927), p. 28.

the programs at Goodyear, they also show that the "factory" school had expanded so much that the need for a formal institutional setting had been created.

Prior to 1920, no adequate facilities were available in which to house the classes, so the men met in whatever rooms were available or on factory rooftops in good weather. However, in 1920, Goodyear Hall was dedicated and the formal housing of Goodyear Industrial University became one of the facilities it offered for employee activities. What had been a "factory school" became a corporation university. Goodyear Hall had cost three million dollars to build and was described as a "club house" for employee activities. It had modern classrooms, laboratories, and equipment, a theatre, a gymnasium and other facilities for employee use such as handball and tennis courts, lockerrooms and showers, and bowling alleys. The facilities at Goodyear were considered the best to be found in any industrial institution.[24]

The executive structure of Goodyear Hall consisted of the Goodyear Board of Education (thirteen members), a Chief Administrator of Education, and four "heads" of the departments which follow: the factory schools, the sales schools, physical training, and general business activities of the building and field.[25] A formal institution for the transmission of both traditional knowledge and that specific to the students' on-the-job training had been created.

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[24]Ibid., p. 29; and Coagulator (1929), p. 135.

[25]P. W. Litchfield, "Goodyear Hall Policy" (Akron, Ohio: Goodyear Tire and Rubber Company, November 20, 1919).

Seven divisions of the training programs offered were created to meet the requirements of education for different groups of workers. The divisions were as follow: The Squadron School, The Apprentice School, The Training School, The Management School, The General School, The Staff Training School, and The School of Tire Repairing. Those students who completed the "Squadron School" courses were given certificates which qualified them as "Master Rubber Workers." Students who completed the "General School" courses could qualify for high school diplomas issued from the State Department of Education. All persons who attended classes or completed programs at the industrial university were considered to have improved themselves and were given preferential consideration in promotion.

The Programs: Goodyear Industrial University

The divisions of the Goodyear Industrial University are organized here as a comprehensive representation of the corporate training program at Goodyear. The information contained in this section was determined to be an accurate example of the organization of the program outlines through comparisons of data from the available primary and secondary sources. No specific date is applied to this representative example but the corporate training programs described in the following pages most closely model the final stages of development in the educational programs at Goodyear by the late 1920s.[26]

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[26]The information in program descriptions was obtained from the following sources: Allen, Goodyear; Beasley, Men Working; the Coagulators and Squadron Files at the Goodyear Tire and Rubber Company Archives; Stevens, "Squadron Plan"; David Crum Rogers, "Branch

The corporate training programs at Goodyear consisted of seven distinct divisions:

The Squadron School
The Apprentice School
The Training School
The Management School
The General School
The Staff Training School
The School of Tire Repairing[27]

The Squadron School

"THE FLYING SQUADRON"

Purpose: To create a group of men skilled in every job in the plant who would act as reserves to cover all major operations in the factory and keep production in balance by meeting emergencies; to make the men familiar with all departments for the purpose of improving their management abilities; and to enable the men to enjoy their work by allowing the use of their heads, hearts, and hands.

Criteria for admission: Men had to be between the ages of 22 to 35, in good physical condition; have a good general education, and have a desire to broaden their education and to learn Goodyear methods. However, no one was kept out for lack of scholastic training if he had the other characteristics needed.

Course outline: A three-year course involving both formal classroom instruction and on-the-job training was implemented. The

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House Administration of the Goodyear Tire & Rubber Company" (Thesis, University of Akron, 1930); and William R. Miller, "An Evaluation of Apprenticeship Training at the Goodyear Tire and Rubber Company" (Problem, University of Akron, 1966).

[27]Coagulator (1928), p. 34.

program included, in chronological order as offered, the following courses: Rubber Manufacturing Practice and Economics, Organization and Management, Reports and Research, Better Letters, Public Speaking (Effective Expression), Personal Salesmanship, Mathematics, Safety Engineering, Foremanship, Labor Training (Industrial Management), Business Law, Chemistry, Industrial Physics, and Production Control. Physical Education was also a weekly required activity throughout the course and was taken before or after class.

"THE ENGINEERING FLYING SQUADRON"

Purpose: To furnish qualified personnel able to design specialized machinery needed by Goodyear.

Criteria for admission: Men had to be between the ages of 21 to 35, in good physical condition, and have a desire to improve their condition and be willing to work and study to achieve that end. They also had to have previous shop experience and at least two years of high school level education.

Course outline: A three-year course involving both formal classroom and on-the-job training for three hours a week was implemented. The program outline included courses in Mathematics, English and Report Writing, Sketching and Mechanical Drawing, Metals and Alloys, Machine Movements, Physics, Organization and Management, and Practical Foremanship. Physical exercise was also a weekly requirement throughout the course.

"THE SALES SQUADRON"

Purpose: To improve the personnel on the sales force by acquainting them with company products and policies, to promote goodwill, to have a ready selling organization, and to coordinate sales and production.

Criteria for admission: Those recognized by Branch House Managers as having exceptional ability, experience, and a good work record.

Course outline: A four-week course in classroom and on-the-job training in aspects of factory production methods, and company policy and sales problems related to the sales viewpoint was implemented. Organized physical exercise was a part of each day's program. The program was later expanded to a full three-year course similar in organization to the other squadrons.

The Apprentice School

Purpose: To develop first-class machinists.

Criteria for admission: Boys had to be between the ages of 16 to 18, in good physical condition, have at least an eighth grade education, and a desire to improve their education. The sons of Goodyear employees were given preference in admission because the number of boys enrolled was governed by the available equipment in the apprentice machine shop.

Course outline: The boys were under contract for a three-year machinist's course. The course alternated between the machine shop (four weeks) and the factory school (two weeks). The course work consisted of fundamental machine shop practice.

The Training School

Purpose: To offer high school graduates who were unable to attend college a chance to make an advantageous connection with industry and to develop men for future needs in supervisory or executive capacities.

Criteria for admission: Boys who were high school graduates, 18 to 23 years old; of a mechanical bend; and able to pass a well-rounded entrance examination in mathematics, grammar, punctuation, and mechanical aptitude. First preference was given o sons of Goodyear employees.

Course outline: A three-year program with half the time, four weeks, spent in the shop and the other half, four weeks, spent in the factory school was implemented. The students completed a shop course similar to the Squadron course, and a complete school course in business practices.

The Management School

Purpose: To provide supervisional training for foremen so that they would have a broader knowledge of the rubber business, a better understanding of the methods of operation in their own departments, learn the importance of the relationship of one department to another, and learn to combine this knowledge with the handling of men in a way to assure a smoothly running organization.

Criteria for admission: Employees whose work was of a supervisory nature.

Course outline: Selection of courses was made by election "from an extensive list of practical subjects."

The General School

Purpose: To provide courses of a more general nature; to teach men elementary, high school and college subjects; to make possible, on a part-time basis, the completion of a high school education which would qualify the student to receive a valid diploma from the State Superintendent of Public Instruction.

Criteria for admission: Open to all.

Course outline: "Owl" courses (mostly held at night) offered general school subjects such as English, Business Arithmetic, Bookkeeping, Economics, Accounting, Public Speaking, Organization and Management, Business Law, Business Finance, Business Correspondence, and Credit and Collection.

The Staff Training School

Purpose: To prepare a limited number of specially selected college graduates for placement in the Goodyear organization.

Criteria for admission: Men had to be college graduates who had been selected by company-conducted personal interview procedures, and who had shown scholarship, leadership potential, personal initiative, and athletic ability. Five hundred men were interviewed each year from 1917 on but only twenty were hired each year and put through the training course.

Course outline: A three-month intensive training program in the shop and a course in the theory of Rubber Manufacturing Practice was studied in the school.

The School of Tire Repairing

Purpose and program: As the name implies, this was in-shop, practical experience. The program was an elective course, open to all.

The description of the divisions of the Goodyear Industrial University program in the preceding pages did not include the cost to the worker for such an education. The benefits of the program in terms of promotion for those who graduated have been discussed, but it is important to point out that some of the programs were undertaken by the workers at personal costs of time and money. The documentation of differences in costs and compensation is not very substantial but enough references exist to draw conclusions.

The members of the squadrons were given preference in the allocation of steady or piecework jobs and were compensated for their time spent in the classroom and in the physical exercise activities required each week. The apprentices were paid only for their time in the shop, but their school and shop work time were considered together to determine a "Merit Rate" of pay. The "Training School" students were paid for their work in the factory, but had to "pay a small tuition for the school work." The "Management School" and the "Staff Training School" were run along the same lines as the "Flying Squadron." Because of the "election" of supervisory personnel to the "Management School" and the

"interview and selection" process of choosing the small number of members for the "Staff Training School," it was concluded that the men in these schools were compensated for their time spent in class. The "General School" was open to all and because it was designed to remediate the education of workers and was run as a night school, it was concluded that the students were probably required to pay a small tuition fee. The school of tire repairing was conducted as an on-the-job type of training; therefore, it is concluded the men were paid for their production work.[28]

The corporate educational idea at Goodyear was very successful. Few men admitted to the squadron courses dropped out of the programs and almost all who graduated as "Master Rubber Workers" were promoted within the company. When the number of industrial educational courses was expanded to include other men from other segments of the factory population, many took advantage of the educational opportunities and advanced themselves through training and preparation for promotion. The pinnacle of success for the "industrial citizens" at Goodyear was advancement through the management hierarchy via promotion via education. Litchfield's educational programs were farsighted, comprehensive, and successful, in combination with other employee incentives and with management efforts to improve work conditions, in maintaining good labor relations at Goodyear. A major concern of Litchfield had always been to inculcate loyalty in the workers of the company and he achieved a high measure of success. The proof of this company loyalty at

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[28]Coagulator (1929), pp. 52, 135-138; and Squadron Files.

Goodyear was substantiated by the company record of few, and not as violent or lasting, strikes during the first three decades of this century. The "company union" created through Litchfield's efforts to inculcate loyalty and a sense of cooperation was most successful.

Many corporate educational programs ended in the 1930s because company managers found little to justify such training programs. The need for quick efficient training had passed as the labor force was reduced and production was cut back. Unions demanded the creation of more jobs and better working conditions (all of which meant a larger company investment of money into worker benefits) and management looked for less expensive modes of industrial training. Many abandoned private training programs completely and turned the responsibility over to the public schools and joined the drive for vocational education, at public expense of course. "Corporation schools as such were abandoned," and education in industry evolved to on-the-job and "learning by doing" types of training which were conducted by foremen. In most industrial settings normal classroom schooling was ended.[29] As the Goodyear company relinquished aspects of its personnel programs to union control, it began to evaluate other of its "benevolent" employee programs. The return on the investment in people made by Goodyear had been measured by the degree of contentment among the workers, by loyalty to the company, and by the increase in and efficiency of production. The company reduced the scope of or terminated some of the G.I.U. programs because they no longer provided an even return on the

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[29]Nathaniel Peffer, Educational Experiments in Industry (New York: The MacMillan Company, 1932), pp. 11-12.

company investment. The Goodyear Industrial Training Program evolved through this period and emerged as a number of separate programs specific to new company needs and which programs emphasized foreman, apprentice, aeronautical, and engineer factory-related training rather than general education of workers.[30]

Lists of the successful placement and promotion of squadron men in Hugh Allen's book, The House of Goodyear, and in the Squadron Files at the Goodyear Archives, point out how very successful the corporate educational policies and programs at Goodyear were in selecting, training, and keeping men in the organization and drawing on their talents to keep the organization a unified one. The squadron men were placed in diverse company operations both old and new and many of the men eventually filled executive positions.

Education at Goodyear continues today and the "Squadron" idea is still in use. Training classes are still held for many different segments of the factory population but the ideal of corporate education as advanced by P. W. Litchfield faded after the 1930s. Economic conditions, federal legislation unfavorable to business, union activities, and labor unrest caused industry to label its attempts to control workers as "adversarial" rather than "paternalistic." Educating people to fit into an industrial society became the responsibility of the emerging public school system as most industries abandoned the corporate school idea.

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[30]Allen, Goodyear, pp. 363-374; and Squadron Files.

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