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The impact of technological advances upon union-management relations in the electrical industry

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BOSTON UNIVERSITY

College of Business Administration

THESIS

The Impact of Technological Advances Upon
Union-Management Relations In The Electrical
Industry

by

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This Thesis was prepared under my supervision and approval is hereby indicated.

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CHAPTER I
INTRODUCTION

Technological advances have been a characteristic of the constantly growing and improving economy of the United States since the Industrial Revolution. It is because of these improvements that the American economy has forged ahead, giving its people a higher standard and level of living than any other nation in the world. There has been, however, a growing resistance to the idea of machines replacing men in the office and on the assembly line. This issue has become an emotionally charged dispute between management and labor.

1. THE PROBLEM

Statement of the problem. It is the purpose of this study (1) to discover and analyze the total impact of technological advances upon the three parties of an employment relationship, the employee; his representative, the union; and management; (2) to evaluate the internal devices which must be used to ease the impact of methods improvements; (3) to investigate the feasibility of controlling the introduction of technological changes into the employment relationship.

Importance of the study. The recent Steel Strike of 1959, having lasted four months, with its adverse effect on the economy of the United States, had been openly proclaimed as a struggle for existence between big management and big unionism. One of the primary problems involved was the justification of work rule provisions previously won by the steelworkers in collective bargaining. Management wanted to rescind these provisions to promote efficiency, while the union was determined not to give up these rules because to do so would lead to a complete deterioration of union

strength. So wide-spread was the damage to the economy, that the Taft-Hartley Injunction was invoked. This action marked the second use of the National Emergency Provision in a two-month period, both actions involving the ramifications of technological advances. The International Longshoremen's Union called a strike over the issue of methods improvement in October, 1959. They were complaining about the simplification of loading techniques, specifically - the loading and unloading of pre-packed trailer-trucks directly into and out of the hulls of ships by the use of cranes. This obviously threatened many of the longshoremen's occupations because of a reduction in hours and in number of workers needed.

Both strikes, the steel and dock disputes, centered around the issue of technological advances. Both disputes were important enough to the national health and safety to warrant the use of the Taft-Hartley Injunction. This fact, coupled with the ever increasing charges throughout all industry of "featherbedding", a concomitant result of technological change, leads many to believe that this will be a very important issue in labor relations disputes in the foreseeable future. Railroad management officials have made known their plans to fight to the bitter end for the rescission of work rule provisions, after all the strike-delaying provisions of the Railway Mediation Act have been invoked. Hence, if these predictions are true, we can look forward to a long, bitter railroad strike in late 1960. Union officials throughout the country reflect the thoughts of Mr. Francis Moore, Business Agent for the International Brotherhood of Electrical Workers, who said in a personal interview with this author that technological improvements of earlier years were compensated for in the economy, but it is becoming very apparent that human planning has not kept

abreast of technological engineering and it remains to be seen by whom, when, and how there will be an equalizing force brought to bear on this problem of machines replacing men.

Method of approach. This evaluation will consist of a critical inspection of the motivation of management for both automation and work simplification, the reasons behind the employee's fear of such methods improvements, and the union's participation in reducing the disturbing effect of these changes upon the economic and social position of the employees. In order to study the total impact of methods improvements upon the employment relationship it will be necessary to analyze each subsequent difficulty which arises when a job is changed substantially. This will lead to an examination of the ramifications of these advances upon job evaluation; time study concepts, such as normalcy, speed rating, and fatigue allowances; and the effect of job changes on the employment relationship. We shall see that unions use work rule provisions to protect their members. These provisions conflict with management's desire for efficiency. This conflict will necessitate an analysis of the relative merits of both parties' arguments concerning work rules. The necessity of proper planning to keep employees abreast of technological advances is well recognized. This study will look into actual contract provisions covering this aspect of personalization as it relates to the Electrical Industry. After examining all these areas, conclusions will be drawn concerning the best ways of reducing the disruptive influences of technological advances upon union-management relations.

2. DEFINITIONS OF TERMS USED

Technological Advances. Throughout this report, the term

"technological advances" shall be interpreted to mean those methods improvements resulting from both automation and work simplification for the purpose of performing a particular operation in the most economical way.

A technological advance will, therefore, refer to both large and small scale changes in the method of performing an operation in order to obtain greater efficiency and utilization of equipment, labor and materials. John W. Riegel has identified 10 types of technological change¹: (1) installation of equipment designed by specialized machinery manufacturers, (2) installation of machinery designed by the user, (3) operation of old machinery at higher speeds or in new combinations, (4) introduction of new tools and fixtures, (5) use of new or improved materials, (6) improvement of manual methods, (7) subdivision of complex tasks, (8) mechanization of manual work, (9) installation of conveyors, and (10) reorganization and replacement of processes.

Automation. A continuous automatic production system, having three characteristics; (1) integration of continuous production machinery, (2) feed-back technology, and (3) rationalization.

Integration. The linking together of conventionally separate manufacturing operations into lines of continuous production through which the product moves untouched by human hands.

Feed-back Technology. A built-in automatic control device used to compare the way in which work is actually being done with the standard for that work, and used to adjust the machine wherever needed to meet the standard for that work.

¹ No. 32, p. 12

Rationalization. The development of general and special purpose computing machines which are capable of recording and storing information, as well as performing simple and complex mechanical operations on such data in order to make more information available to management.

Work Simplification. The process of analyzing and simplifying the methods, materials, tools, and equipment used in the performance of a piece of work for the purpose of finding the most economical manner to perform the operation.

Electrical Industry. For the purpose of this study, the term "Electrical Industry" will mean those manufacturing concerns producing electrical machinery. This restriction will exclude the electric light and power firms, as well as the radio and television industry.

CHAPTER II
MANAGEMENT'S MOTIVATION FOR THE INTRODUCTION
OF TECHNOLOGICAL ADVANCES

We must, at the outset of this discussion, distinguish between the macro-economic and micro-economic motives which cause management to introduce technological improvements. Macro-economic reasons refer to the effects of technological advances upon the national economy. Management officials, as a collective group, urge the introduction of technological changes because they increase national employment, decrease commodity prices, reduce the impact of inflation and maintain, as well as improve, our standard of living. Micro-economic reasons refer to the effects of methods improvements upon the specific firm making such changes. It is very important to keep this distinction in mind because many statements made, concerning the introduction of automation, seem paradoxical. For example, one of management's motives for automation is the reduction of labor costs, which means unemployment for a number of workers formerly employed. They will, however, justify their position by showing that automation also creates employment. This study will confine itself to the micro-economic motives of business leaders for the introduction of technological changes. Pertinent questions to be answered, then, are: how do technological advances improve a firm's competitive position? What are their effects on production control, quality control and safety? How do these changes increase the efficiency and utilization of the labor force? These questions are important because they are the prime movers, the real motivational forces, that cause particular managements to install methods improvements. The macro-economic reasons are merely a theoretical

justification of their actions. For an interesting discussion of macro-economic motives, see Ralph J. Cordiner's testimony on automation and technological change before the United States Congress².

1. IMPROVEMENT OF COMPETITIVE POSITION

The Electrical Manufacturing Industry, still in its infancy, is comprised of thousands of small firms, with a few notable exceptions, each striving to improve its own market position. In a youthful industry, where there are few outstanding reputations, there can be no resting on past accomplishments. To survive in this highly competitive situation, each firm must better its competitive position lest it lose all forward motion and be left behind.

The Electrical Industry has as one of its biggest customers the United States Government. The normal method of procuring a contract from the government is to underbid the competition. A cost estimate must not be either too high or too low. If the bid is too high, the firm submitting the bid will not receive the contract; and if the bid is too low, the firm will get the job, but will lose money in its performance. It is an absolute must, then, for management to discover new methods in order to do the job as inexpensively as possible. Only thus can it obtain a sufficient percentage of contracts bid upon and fulfill them at a suitable profit margin. This same problem must be faced in the public consumer market, although the competition in this area may not be quite so critical due to the skillful use of advertising.

General Electric credits technological advances for many reductions in the prices of their product line. Vacuum cleaners, costing \$89.95 in 1950,

² No. 5: pp. 423-434

were reduced to \$79.95 in 1955. Television, previously \$230.90 (12 inch screen), cost only \$199.95 (21 inch screen) in 1955. Similar reductions of prices are evident in refrigerators: \$329.95 (8 cubic feet) in 1950, \$228.00 (9.2 cubic feet) in 1955; and in automatic washers: \$394.95 in 1950, reduced to \$279.95 in 1955³.

Solomon Barkin summarizes the needs of particular management groups to improve their competitive position by saying, "The market demands that alterations be made in products to meet new trends. Costs must be adjusted in the plant to meet economic pressure. The result is new job standards, new work assignments, and new jobs for workers."⁴

Improved production control methods. Automation solves many production control problems simply by building into the machinery a pre-planned method for producing large volume lots of work at low unit costs, thereby eliminating the need for individual routing, scheduling, and dispatching. Extensive use of specialized machines, linked together by material-handling equipment, allows a plant to operate more efficiently by increasing the productivity per hour. As the flow-rate of finished goods increases, the variable cost of each particular product is reduced. Material-handling equipment eliminates the need for truckers and instructions. Because productive facilities are linked, there is no need for storage space to handle goods in process. Rigid output capacity supplies the opportunity to control and coordinate the inventory of raw materials with the flow of production, thereby saving the costs of high inventories. Automatic technology introduces the possibility of eliminating direct human intervention in operating, guiding and feeding machines, and in controlling

³ No. 5: p. 440

⁴ No. 6: p. 473

processes. This results in substantial savings, because increased speed of output will decrease the percentage cost per unit of the machinery. It can be seen, then, that the features of automation (pre-planned layout, specialized machinery, extensive use of material handling equipment, as well as control and coordination of inventories) reduce the cost per unit by reducing labor time needed, inventory costs, intra-plant transportation costs, need for storage space, and by increasing the productivity per hour of plant facilities.

Work simplification also improves production control methods by eliminating unnecessary steps, combining and rearranging the process flow of goods, and by simplifying operations. Its goal is to reduce the inefficiencies of layout and the motions of the operators. By standardizing the method of each operation a more dependable estimate may be made concerning the output of the line. Work simplification tries to balance the productive capacity of each station on the line, thereby reducing bottlenecks and allowing for greater stability in results obtained. The competitive position of the firm is bettered through this type of method improvement both by increasing the productivity of the individual worker and by reducing the labor cost for the operation. Labor costs are reduced "more from higher output than from lower priced labor."⁵ Increases in productivity resulting from the use of a special jig or fixture, for example, have been known to be as high as 100%.

Improved quality control. Technological advances substantially improve the quality of productive output. Automation, through the use of feed-back technology, can check its own work and test the quality of the

⁵No. 29: p. 37

product, making whatever adjustments are necessary to bring the product up to the desired standard. These adjustments take place as the product goes through the station performing the operation, allowing for immediate correction of any difficulty. Quality control, under older systems, never could maintain this important feature of immediacy, with the result that if a product checked was found to be of poor quality many of the products processed before it would also be defective. This feature of immediacy in quality control techniques reduces wasted materials thereby decreasing the cost of the whole lot of goods produced.

The use of specialized machines, designed to simplify methods, reduces the possibility of error by dividing the task and performing it in the easiest way possible. The operator, therefore, faces a reduced error-prone situation. A concomitant result of improved quality control is the reduction of waste materials and more efficient use of both the laborer's and machine's time.

Improved safety. Technological advances improve safety, either directly or indirectly. In the process of automation direct human intervention in the productive process is eliminated completely. Work simplification improves safety indirectly by the proper planning of tools and devices to eliminate the accident proneness of the work situation. As the frequency rate of accidents declines substantial savings are made by management in accident liability premiums. Time lost by the worker affected, by the commotion caused at the work place, by official reports concerning the accident, cost the firm a great deal. Anything which reduces this type of interruption will decrease the cost of the goods produced.

2. INCREASED INFORMATION AVAILABLE

TO MANAGEMENT

The introduction of computers and tabulating machines into the offices of business concerns allows management to base its decisions concerning both financial and productive matters upon the most up-to-date and accurate information possible.

The importance attached to managerial informational needs, concerning accounting and business data, research and engineering data, justifies the tremendous expense of computers and data processing machines. In 1955 General Electric had 121 computers in use - 83 computers were used for engineering purposes and 38 for data processing. They also had on order 23 additional computers, 19 of which were to be added to the data processing force and the remaining four would join the engineering force.⁶

General Electric uses computers for research and engineering functions; such as trajectory of guided and unguided missiles, the earth satellite project's computations, and for productive and design problems, which would take from one to three years to do by hand but can be solved by the use of computers in less than one hour. Business data processing machines are used in the following four areas at General Electric: payroll, material control, order service and billing, and general and cost accounting. These four areas are extremely complicated, but the utilization of computers gives the General Electric management a greater opportunity for decision-making based upon accurate and instantaneous information concerning labor costs, inventory costs, orders on hand, accounts receivable data and budgetary considerations.

In summation, then, it is quite apparent that there are many

⁶ No. 5: pp. 443

potent motives for the introduction of technological advances upon the industrial scene. In a word, we can say that management cannot afford not to look for innovations in methods if it intends to grow and prosper.

CHAPTER III
EMPLOYEE'S FEARS CONCERNING TECHNOLOGICAL
ADVANCES

Technological advances, considered by management to be a necessity in order to improve their particular firm's competitive position, are a source of great consternation to the employees of the company installing them. All the macro-economic justifications concerning methods improvements, such as their necessity in order to reduce the cost of living, to decrease the trend of inflation, to increase employment, and to maintain the standard of living, fall on deaf ears when the employees of a particular firm become aware of the introduction of these improvements into their own work environment.

Although the employees recognize the fact that technological changes and innovations are an absolute necessity if their firm is to prosper and grow, the worker is not particularly impressed with this concept when the improvement results in a change of work assignment or unemployment for himself and hard times for his family.

We are, therefore, faced with the first dilemma of technological improvements, namely the conflict of interests between management and its employees. We have seen why management wishes to install these advances, now we must look into the motives affecting the reactions of employees to methods improvements.

1. A CAUSE OF UNEMPLOYMENT

Technological advances increase productivity per hour and decrease labor costs by substituting less skilled workers for more highly skilled laborers or by substituting a few skilled workers for many semi-

or unskilled workers.

Increased productivity per hour. When output is increased per unit of time it often means a decrease in hourly employment available to laborers because orders are filled in less time than previously. Unless there is an increase in a firm's share of the market, with its corresponding increase in demand for orders, the introduction of innovations capable of higher capacity in productive ability will result in the availability of fewer employable hours. Both automation and work simplification have the resultant effect of increasing productivity. Automation does this by eliminating direct human intervention from the productive process. Work simplification divides the operations to be performed into the most efficient pattern in order to get more work produced in a shorter period of time through the specialization of operations and laborers. A worker whose job has been simplified and made easier to do can easily work himself out of a job.

Reduced labor costs. The substitution of one skilled worker for many unskilled workers, or workers of a lower skill grade for those of a higher rank, also means unemployment for those laborers currently employed at the time of a methods improvement. All the evidence of a macro-economic nature, concerning the ability of innovations to create new products, industries and employment, fails to change the fact that a "labor saving" device brings about unemployment for some member or members of the firm using these devices. That worker or group of workers has just seen his occupation disintegrate. A worker, so displaced, may or may not be rehired in some other department of his old firm. If the change is a big investment eliminating large numbers of workers, such as in automatizing a plant, the laborer, it is safe to say, will be applying for unemployment compensation. If

the change is small and affecting only a few workers, he may be absorbed into another department but will, in all probability, receive a substantial reduction in wages because of his lack of experience and skill in that new occupation.

It is quite apparent that the worker is self-seeking and does not share the same interest as does the economist in the possibility of these changes creating a new industry or new occupations. He is very much concerned about the arrival of his next pay check. This worker may be one of those people who migrate from the blue collar class to the white collar set, to whom the Princeton University Report refers in its economic study concerning the shifting employment trends of Americans from laborers to administrators because of the introduction of technological advances,⁷ but only after considerable time and expense resulting from the unemployment and retraining costs.

2. A CAUSE OF SKILL REDUCTION

Work simplification has as its goal the division of operations into specialized tasks so that the job is easier and quicker to perform. This entails a reduction in intellectual process by substituting memory for thought and judgment. It also allows management to train new members in less time and to utilize less highly skilled personnel. For example, the use of a quad-headed drill combined with a jig clamping the product and marking the spot to be drilled, automatically suggests that the job no longer can efficiently use a man skilled in reading of blueprints and the drilling of holes by means of preplanned measurements.

Automation either replaces skilled workers with less highly

⁷ No. 27: pp. 60-65, 80

skilled workers or brings in specialists, fewer in number than those people being replaced, to perform the operation. Whether the lesser-skilled workers come from outside sources or whether the present skilled workers take over the newly created jobs of a lesser-skilled nature, there will be a feeling of frustration because of a decline in the need for a skill which took many years to acquire and which skill is a point of pride to the worker possessing it.

3. DECLINE IN SOCIAL STATUS

Every responsible individual, be he a social luminary or a factory sweeper, aspires to a better and more influential life. Social status is just as prevalent a desire among the lower middle class as it is among the higher social sets. There are, basically, six classes in the American society. The "old families - the aristocracy of birth and wealth" as Professor Warner and associates put it.⁸ The next group can be called the "new aristocracy," people with money and manners, mingled with but not completely accepted by the older aristocracy.⁹ The third group is the upper middle class featuring people of individual wealth and solid membership in civic affairs. Ranking next in order is the "common man level of clerks, small tradesmen, foremen, and a few highly skilled workers."¹⁰ The next group could be called the upper-lower group of respectable working people. Finally we have the lower-lower class of individuals.

It is common experience to observe the efforts of an individual as he tries to rise above his respective fellow-members and be considered

⁸ No. 38: p. 12
⁹ No. 14: p. 223
¹⁰ No. 14: p. 224

higher in prestige than his neighbors. The phrase "keeping up with the Joneses" is typical of the effort of each lower group to imitate the higher groups. We all realize the importance of the desire of a human being to rise into a higher class so that he may gain the plaudits of his previous class members.

Business brings many of these classes together under one roof. Managers range from the upper-middle to the upper-upper set of the social strata, while workers range in class from the upper-lower to the lower-middle class with a few highly skilled workmen present in the upper-middle grouping.

The type of work performed and the money wages received determine what particular place one will occupy in any given class. A skilled carpenter is treated as a higher type individual than a machine operator. He is more respected by members of his own class, and his pride in status is just as strong as any member of a higher class. Because a worker is a human being he does not check his social status at the entrance of the factory, to be pinned back on at the end of the day.

It is very apparent, then, that technological advances, which often replace skilled workers with less highly skilled personnel, cause a decline in the workingman's social position. When a change takes place which reduces skill, and consequently reduces wages, it instigates a decline in the man's social standing in the community. The person performing the job need not be laid off, nor transferred to suffer a social decline, he needs only to be given a less highly skilled position where the utilization of his skill is not needed and where the personal satisfaction received from the application of his art is reduced substantially. This

reduction in social prestige is a potent force causing the laborer to vigorously resist any change of this type.

4. RESISTANCE TO CHANGE

It is evident from the preceding discussion that changes in work assignments and/or in jobs which bring about unemployment, or cause skill reductions and subsequent reductions in social standing will be resisted by employees because they view these results as being disadvantageous to their own personal life.

The change, however, need not effect any one of these three areas of the worker's life to cause resistance. "Research shows that any change may be resented unless intelligent planning is done in advance to help 'changees' understand their own feelings."¹¹ There are five conditions conducive to the birth of resistance. These are: (1) when no explanation concerning the nature of the change is offered to the people affected by it, (2) when pressure of force is used to obtain acceptance, (3) when people are caught between two conflicting motivations, one for the change, the other opposed to it, (4) when the change is made on personal rather than impersonal grounds, (5) when the change ignores the already-established customs and institutions of the group.

By analyzing these five conditions and looking into the effects of technological advances, it becomes apparent that even small changes can arouse resistance and bad feeling. It is not strange, then, to discover animosity toward methods improvements, be they large scale as in the case of automation, or of a smaller scale through the use of work simplification.

¹¹ No. 41: p. 9

Failure to explain the nature of a change to those affected by it is a most thoughtless method of managing people. It leaves the employee on his own to discover what the effect of the change means to him personally and to his working companions. Rumor, fear of the unknown, and the worker's imagination will cause sufficient anxiety to bring out resistance to the proposed change regardless of its merit.

The use of pressure, to force the compliance of employees, is liable to be seen in the eyes of the employees as a substitution of power for reason on the part of management because of their inability to justify the change.

Two opposing motivations, one for the change and one against the change, will cause resistance because the employee may not be able to render a decision if the reasons on both sides are of approximately equal merit.

Changes made on personal grounds because of an employer's prejudices, either toward certain ways of doing a job or toward the individuals performing that function, receive very little favorable consideration from the employees. If the change has no rational merit, except to gratify a superior's personal whims, there will necessarily be a great deal of friction aroused.

Changes ignoring the already established customs and institutions of a group are of the highest importance in any discussion of the impact of technological advances upon the employment relationship. This fifth condition is the cause of bitter resistance, leading employees to pressure unions to adopt strict work rule provisions, which in turn lead to charges of "featherbedding." Once a custom is set up and the employees are made aware of it, any change or attempt on the part of management to alter the existing precedent will be viewed as an attempt to take away a privilege

previously won through the use of strategic position. A preponderant majority of disputes over work-rule provisions can ultimately be explained as an attempt on the part of management to introduce some kind of change which would eliminate a precedent of this type either directly or indirectly.

The first and second conditions can be eliminated by the practice of proper managerial communications. The third and fourth conditions can be avoided by having on hand precise reasons why the change is made, thereby showing the employee why it is beneficial to him and the company to conform with the innovation. It goes without saying that prejudiced activity should be eliminated at any cost and the factual reasoning behind any innovation should be such as to justify and warrant the change. The fifth condition cannot be eliminated by autocratic demands based on presumed managerial prerogatives, as we have seen in the recent steel strike. Changes which affect the customs and precedents of the work situation must be bargained for by the union and must be bargained out of existence by management through concessions of one benefit for the elimination of a previous institution or precedent.

CHAPTER IV
UNIONS' AVERSION TOWARD TECHNOLOGICAL
ADVANCES

A union is a collective body of employees, organized for the attainment of three goals: the improvement of wages, hours, and working conditions; the attainment of industrial jurisprudence, whereby the worker is freed from autocratic treatment by the employer; and lastly, the perpetuation of the organization itself. Any event which threatens any one of these objectives will encounter the resistance of the union. Technological improvements weaken the organization itself by reducing membership, thereby decreasing the financial strength of the union so necessary for it to obtain its objectives.

1. LOSS OF MEMBERSHIP

Technological innovations often result in unemployment for the workers of the firm instituting such changes. The duration and extent of the unemployment depends on the nature of the change. If the innovation is a work simplification improvement the scope of the layoff will be limited and its duration will be short. Work simplification applies itself to only one operation at a time, the workers affected being smaller in number than any change resulting from automation. A worker laid off due to a work simplification change will, in all probability, be rehired shortly thereafter, if the union has a contract provision for recalling unemployed workers on a preferred basis. This policy is stated in the International Brotherhood of Electrical Workers' contract with the Raytheon Manufacturing Company as follows, "It is the policy of the Company to give an employee with recall rights to an occupational title preferential consideration for

reinstatement over prospective new hires to vacancies which occur in other occupational titles in his labor grade and seniority grouping."¹²

Automation, however, causes the unemployment of a great many workers and the extent of their lay-off will be longer, simply because it takes more openings in other occupations to get them recalled to work. A change which results in the lay-off of one or more hundred laborers will definitely disrupt the union organization because it represents a permanent loss of membership. The chances of recalling any significant number of workers affected is small and in most agreements workers are severed from the employment relationship after being laid off for more than eighteen months. It is significant to note, however, that most workers will not wait for the eighteen months to pass before they look for and obtain a new occupation in some other field of endeavor. It is apparent, then, that a large lay-off many times means a substantial and permanent loss to the union involved. Not only is the effect felt by the rank and file members in their personal lives but there is an additional loss inflicted upon the union organization because of the decline in the membership rolls of the union.

2. LOSS OF FINANCIAL RESOURCES

As membership drops, there is a corresponding decline in the financial strength of the organization. In order to increase or maintain numerical strength a union must have the monetary resources necessary to conduct organizational drives and pursue the workers' rights in the utilization of the grievance procedure. Unemployment, resulting from technological advances, reduces the number of dues-paying workers. If the reduction

¹² No. 2: pp. 66-67

in income is substantial, due to an extensive and protracted lay-off of members, severe damage can be inflicted upon the organization. Union growth is a cumulative process with interrelated steps, one depending upon the other, in order that the union continue to grow. First, members must be induced to join, then the union must get income or dues from these members to strengthen the organization by paying for the services of organizers to obtain printed materials and arrange meetings. This induces more people to join which in turn brings in more dues income, so necessary to build up strike funds. Eventually, the union can force management to recognize it as an exclusive bargaining representative of the employees. Correspondingly, a decline in union strength is also a cumulative process. If the union loses members, it loses income. If it loses the financial backing, the union is less able to afford the expense of searching for new members and less able to conduct its business of obtaining better wages, hours, and working conditions. When the union is weakened in its ability to help the workers its reason for existence is weakened. If the process is allowed to go too far it may find themselves battling the workers in a decertification election. Hence, it behooves a union to be particularly diligent in preventing the loss of financial resources due to declining membership. Technological advances are in direct contradiction to this process of cumulative union growth because of its ability to replace many unskilled or semi-skilled workers with fewer skilled workers.

3. EFFECT ON THE WORKERS' STRATEGIC POSITION

Craft and industrial unions have based the power of enforcing their wills upon management on the use of the strategic position of skilled workers. Unions have, by withdrawing the support of the skilled workers,

forced managements into concessions which were expedient in order to resume production.

The determinants of a strong strategic position for a group of laborers are: (1) irreplaceability for long or short periods of time, (2) solidarity of the group, (3) strong leadership, (4) strong strike funds, (5) incapability of building large inventories because of the nature of the product.

Technological advances, which weaken unions by causing a decline in membership, with its consequent impairment of union finances, can actually increase the power of the strategic position of a group of workers. Any addition to the fixed costs of a company automatically reduces the percentage of labor to capital costs. When these two additions become substantial as in the introduction of automation, the percentage cost of labor to capital investment drops significantly. During a strike the heavy fixed costs of depreciation and loss of productivity will far outweigh the proposed wage increase demanded by the union. The union, therefore, gains a more powerful strategic position due to the irreplaceability of the workers in a heavy fixed cost circumstance.

This improvement of strategic position is not enough, however, to outweigh the losses to membership and financial resources, because the union, as an organization, now has less people to represent in the attainment of improved wages, hours, and working conditions.

4. A CAUSE OF INTRA-UNION JURISDICTIONAL

DISPUTES

When technological improvements are introduced into a work situation, many jobs are changed substantially. The process of work simplification

does cause a great deal of unrest and intra-union rivalry by rearranging the layout into the most economical flow of operations possible and by specializing and reorganizing the nature of the jobs performed. This type of innovation often requires the performance of two distinct jobs by one worker. Many times a craft jurisdictional boundary is bypassed in the interest of efficiency.

The Raytheon Manufacturing Company decided to decentralize their carpenters, stationing a few of them at each plant rather than using a pool system which had to answer calls as they came in. Once the carpenters took their respective positions in each plant it was soon discovered that they were being used to do not only carpentry work but also maintenance jobs on holes in the roofs and patching work on the walls in violation of the American Federation of Labor's craft jurisdictions of roofers and plasterers. The carpenters then sought an upgrading in classification from a grade 4 to a grade 3 job with commensurable pay. Once the officials of the International Brotherhood of Electrical Workers heard of this request and listened to the reasons behind it, they realized that they were faced with two problems. First, a jurisdictional dispute between the various craft units of Carpenters, Plasterers and Roofers existed. Secondly, there was a dispute over the possibility of upgrading a group of workers' job classifications. The first problem is much more important to the union because the nature of their organization demands collective, concerted action which can be seriously upset by intra-organizational rivalries and bitterness.

5. LACK OF SPECIFIC CORRELATION BETWEEN MONEY WAGES AND PRODUCTIVITY IN INDUSTRIES

Unions have recognized that the cost reduction implications of

technological improvements are so great that they do not attack innovations per se. Unions, however, do have strong arguments concerning the lack of specific correlation between money wages and productivity in the industries using these innovations. Unless there is some specific correlation drawn to show logically and precisely what the productivity increase of an innovation means to the money wages received by the workers in that industry, firm, or occupation, the union will never be able to tell its members that it has obtained a just share in the gains for them.

Table I illustrates the lack of specific correlation between productivity increases and average hourly earnings. This table is broken down into three categories: production workers, average hourly earnings, and the Federal Reserve Board Index of Productivity. The figures measure production workers rather than total employment because of their probability of being organized. Average hourly earnings, although not a perfect measure of wages because of the influence of overtime and a long term trend of change in the composition of the work force, are used in the absence of any better wage data. The Federal Reserve Board's Index on Productivity has as its base the years of 1947-49 equal to 100. It is also important to note that the period of time covered is from 1948 to 1957, the beginning and ending of this period being at approximately the same position in the business cycle, that is, just prior to a recession.

If there were any specific correlation between productivity increases and gains in average hourly earnings, you might expect to see a trend toward higher wages for those industries that have increased their productivity. This table shows that the average per cent change in average hourly earnings for all industries producing durable goods is 56.00% with

TABLE I.

PER CENT CHANGE IN PRODUCTION WORKERS, 1948 - 1957

PER CENT CHANGE IN AVERAGE HOURLY EARNINGS, 1948 - 1957
Federal Reserve Board Index 1957

	Production Workers (In Thousands)			Average Hourly Earnings			FRB Index (1947-49=100)
	1948	1957	PerCent Change	1948	1957	PerCent Change	1957
Manufacturing	12,717	12,911	1.5	\$1,350	\$2.07	53.3	115
Durable Goods	6,909	7,523	8.9	1,410	2.20	56.0	160
Ordnance & Accessories	23.9	76.9	221.8	1,375	2.34	70.2	N.A.
Lumber & Wood Products	752	588.3	-21.8	1,238	1.81	46.2	114
Furniture & Fixtures	306	314.2	2.7	1,192	1.76	47.7	120
Stove, Clay & Glass Prod.	448	456.0	1.8	1,307	2.05	56.8	155
Primary Metal Industries	1,083	1,081.6	-.1	1,522	2.50	64.3	131
Fabricated Metal Prod.	812	892.5	9.9	1,396	2.18	56.2	139
Machinery(Exc. Elec.)	1,203	1,255.7	4.4	1,469	2.30	56.6	150
Electrical Machinery	656	857.7	30.7	1,388	2.07	49.1	204
Transportation Equip.	1,031	1,383.6	34.2	1,579	2.41	52.6	213
Instruments & Rel. Prod.	200	226.2	13.1	1,333	2.11	58.3	172
Misc.Manufact. Indus.	394	390.6	-.9	1,244	1.81	47.9	140
Non-Durable Goods	5,808	5,388	-7.2	1,278	1.88	47.1	130
Food & Kindred Prod.	1,197	1,065.7	-11.0	1,235	1.93	56.3	112
Tobacco Manufactures	93	84.4	-9.2	.958	1.52	58.7	111
Textile Mill Prod.	1,275	912.9	-28.4	1,163	1.50	29.0	99
Apparel & Other							
Finished Textile Prod.	1,049	1,064.5	1.5	1,182	1.49	26.1	111
Paper & Allied Prod.	405	458.8	13.3	1,291	2.04	58.0	158
Print'g, Pub'g & Allied Ind.	501	553.2	10.4	1,698	2.50	47.2	141
Chemicals & Allied Prod.	520	545.1	4.8	1,355	2.22	63.8	184
Prod. of Petroleum & Coal	192	168.0	-12.5	1,701	2.65	55.8	141
Rubber Products	209	205.9	-1.5	1,456	2.26	55.2	135
Leather & Leather Prod.	368	329.2	-10.5	1,120	1.54	37.5	104
Anthracite Coal	75.8	26.4	-65.2	1,809	2.63	45.4	49
Bituminous Coal	419.1	208.4	-50.3	1,898	3.02	59.1	88
Class I Railroads	1,327*	985*	-25.8	1.28	2.26	76.6	90**

* Number of Employees

** Freight Carloadings

(Compiled from Bureau of Labor Statistics)

an increase of 60 points in the F.R.B. Index of productivity increases. The average per cent change in average hourly earnings in the non-durable industries was 47.10% reflecting an increase in the F.R.B. Index of 30 points.

Durable goods tended on the average to show more conformity or correlation between productivity increases and gains in average hourly earnings than the non-durable areas of the economy. There is, however, very little correlation when each industry is compared individually with the other firms or with the average of the group involved.

Primary Metals indicate a drop of .10% in the number of productive workers, yet productivity went up 31 points. This reflects the introduction of technological innovations. The workers increased their average hourly earnings by 64.30% as compared to the average of all durable goods industries, namely, 56.00% having been influenced by an average productivity increase of 60 points.

Instruments and Related Products showed an increase of 13.10% in the number of production workers and an increase of 72 points in the F.R.B. Index, again reflecting the introduction of efficiencies and innovations. The workers received only a 58.30% increase in average hourly earnings or only 2.30% higher than the average of all durable goods industries which had productivity increases of only 60 points.

In the non-durable sector, we see that the Food and Kindred Products Industries had a decline of 11.15% in production workers. The F.R.B. Index shows an increase in productivity of 12 points influencing an increase in average hourly earnings of 56.30% or 9.20% higher than the average raise of the entire sector. It is important to note that the entire sector

increased productivity 30 points while suffering a loss of 7.20% of its workers.

Leather and Leather Products lost 10.50% of its productive workers, yet improved production by 4 points. The average hourly earnings for that industry went up by 37.50% or 9.40% less than the whole sector of the economy which increased productivity 30 points having 7.20% less workers to do the job.

The Bituminous Coal Industry lost 50.30% of its productive workers resulting in a decrease of only 12 points in productivity. This industry clearly shows the impact of innovations for it greatly increased its productivity per man hour. Their average hourly earnings went up by 59.10%.

The Electrical Machinery Industry, often called the Electronics Industry, showed an increase of 30.70% in its production workers. The productivity increase amounted to 104 points, far outweighing the increase in manpower. Innovations accounted for a large amount of this increase in productivity but there is little correlation between the resultant increase of the average hourly earnings of 49.10% and the average hourly earnings of the durable goods sector, namely 56.00%. The Electronics Industry failed to reward its workers with any justifiable increase in average hourly earnings when compared to the averages of industries in the durable goods sector.

Table II shows, in composite form, that little correlation exists between increases in productivity and increases in average hourly earnings.

Four industries dropped productivity from 100 to 81.5 points or a decrease of 18.5 points. They received a 30.40% increase in average hourly earnings (adjusted by the cost of living increases of 17% during the period, thereby arriving at the real average hourly figure).

TABLE II.

FEDERAL RESERVE BOARD INDEX CHANGES AND PER CENT CHANGE IN
 REAL AVERAGE HOURLY EARNINGS 1948 - 1957

Change in FRB Index - Industry Showings	Average Value of FRB Index, 1957	Per Cent Change In Real Average Hourly Earnings
Drop* (4)	81.5	30.4
0 to 24% Increase (7)	112.6	27.2
25% to 49% Increase (8)	139.4	33.1
50% to 99% Increase (5)	163.8	35.7
100% or more Increase (2)	208.5	29.1

(Figures in parentheses indicate number of industries in each group.)

* Includes Class I Railroads with output measured by carloadings index.

Condensation of Bureau of Labor Statistics - Table I.

Seven industries increased productivity from 0 to 24%, averaging an increase of 12.6 points and yet these industries actually received 3.20% less in real average hourly earnings than the previously mentioned four industries.

Eight industries on the chart increased productivity from 25% to 49%. These industries received only a 33.10% increase in real average hourly earnings compared to 30.40% for the four industries that had productive declines.

The last set of figures in Table II includes the Electronics Industry and the Transportation Equipment Industry, both of whom increased productivity more than 100% and yet received less than all the industries shown with the exception of the group that increased its wages only 27.20%.

A total correlation of all industries concerned showed only a .14 relationship between productivity increases and increases in average hourly earnings. This is precisely the point that unions complain about. If the innovations are to be accepted by unions and if cooperation is to be fostered, there must be some specific correlation between workers wages and gains in productivity because of the introduction of these innovations. A union will be more disposed to cooperate and aid the introduction of innovations only if it can show to the workers proof of a wage compensation policy such as the Bituminous Coal Miners have obtained.

CHAPTER V
RAMIFICATIONS OF TECHNOLOGICAL ADVANCES
UPON THE EMPLOYMENT RELATIONSHIP

The preceding three chapters have attempted to show the motivational drives behind each party's attitudes concerning technological advances. These attitudes are reflected in the application of managerial systems developed to obtain a more scientific approach to the day by day leadership problems of an organization. Management groups have developed systems of job classifications and time values for the performance of operations which tend to be semi-scientific, in that numerical points are used as a basis for comparisons. These systems have never been challenged per se by the majority of unions because labor prefers to use them as a method, opposing not the principle of the system but only its application in cases where employees feel they have been wronged. Union officials have reserved the right to challenge the legality and justice of these systems should they ever be implemented for discriminatory purposes.

All three parties to the employment relationship recognize the need to compare job contents with money wages and standards of performance to insure the absence of discriminatory treatment. It is important to note here that the Union's function in this area of industrial jurisprudence is just as important as its function in the attainment of improved wages, hours, and working conditions.

Technological advances have, by upsetting the status quo of an organization, department, or operation, traditionally heralded an oncoming hoard of grievances concerning the practical applications of these systems.

These devices of management are, moreover, vehicles of union and management action in the expression of their fundamental attitudes toward technological innovations and their effect on the contractual parties.

1. JOB EVALUATION

"Job evaluation is a systematic process of comparing jobs to determine their position in a job hierarchy."¹³ The favorite system used is the point method type of evaluation, which attributes a numerical value to the factors considered to be important in the performance of the job under consideration. The Raytheon Manufacturing Company uses an adaptation of the National Electrical Manufacturers Association's point method of evaluation (see Table III).

As a technological innovation is introduced, many jobs are substantially changed. A management job analyst then evaluates the degree of each factor as it exists in the new job. By adding the numerical points of all the factors and arriving at a total, the new job is then placed in a labor grade, commensurable with the total number of points attributed to that job. The rate of pay is then determined by the labor grade into which the job is placed.

When the final evaluation is completed the worker may believe he has been incorrectly evaluated and can initiate a grievance through his shop steward. The union will then take up his case, trying to prove that some factor was underrated by the analyst, since many of the actual applications of the system are judgment values. The point of attack will not be against the system in principle, but rather against the application of a specific degree definition to the job as it actually exists. It is well recognized

¹³ No. 7: p. 49

TABLE III.

ATTRIBUTES, POINT VALUES AND KEY TO GRADES USED

IN DETERMINING THE VALUE OF A JOB¹⁴

The relative value of a job is considered to depend on the following attributes which are present in varying degrees in the various jobs. These attributes are not of equal importance, and to give recognition to these differences in importance, weights or points are assigned to each degree of each attribute in accordance with the following table. Any job under consideration will properly fall into some one of the several degrees of each attribute.

<u>Job Attribute</u>	<u>1st Degree</u>	<u>2nd Degree</u>	<u>3rd Degree</u>	<u>4th Degree</u>	<u>5th Degree</u>
<u>Skill</u>					
1. Education	14	28	42	56	70
2. Experience	22	44	66	88	110
3. Initiative & Ingenuity	14	28	42	56	70
<u>Effort</u>					
4. Physical Demand	10	20	30	40	50
5. Mental or Visual Demand	5	10	15	20	25
<u>Responsibility</u>					
6. Equipment or Process	5	10	15	20	25
7. Material or Product	5	10	15	20	25
8. Safety of Others	5	10	15	20	25
9. Work of Others	5	10			
<u>Job Conditions</u>					
10. Working Conditions	10	20	30	40	50
11. Unavoidable Hazards	5	10	15	20	25

Establishment of Grade From Point Values

The total point score of the job determines the labor grade in accordance with the following table:

<u>Score Range</u>	<u>Grade</u>	<u>Score Range</u>	<u>Grade</u>
383-404	1	208-228	9
361-382	2	196-207	10
339-360	3	184-195	11
317-338	4	172-183	12
295-316	5	160-171	13
273-294	6	148-159	14
251-272	7	136-147	15
229-250	8 Up to	-135	16

* Raytheon Company Job Rating Plan - Revised Nov. 1, 1957.

that job evaluation is necessary in that it gives some basis of job-comparability, but to assume that it is a science because of the utilization of numerical values completely underestimates the ability of a union to prove before an arbitrator that the judgment of the analyst was incorrect in the application of the degree definition to the value of the work factor as it actually exists.

Technological advances, seen as a threat to the union organization itself, triggers many grievance hearings on the issue of job evaluation. The attitudes of employees and unions concerning the machine influence many disputes of this type. The union must show its members that it is working for them. One way to de-emphasize the impact of innovations on the membership is to attack the evaluation of the new job. Union officials believe that job evaluations are rigged so that the point accumulation of a job, when finally determined, usually falls about midway between the extremities of the labor grade to which the job is assigned. In this way, managements protect themselves from the possibility of a grievance hearing, raising the numerical value of some one degree, high enough to place the job in a higher grade. A substantial change in the performance of an operation, because of work simplification, typically reduces the physical effort and skill factors of a job while it increases the responsibility for equipment, but not to the same extent. This has the tendency to reduce the average hourly earnings of employees by reducing the numerical point value of the job. The worker is unable to use a skill previously learned and enjoyed. The union finds another dissatisfied member on its hands.

The union because of its attitude toward technological advances will spare no expense in bringing as many cases as it can to the ultimate

grievance procedure step, namely, arbitration, in an effort to protect its members from wage cuts due to this system of evaluation.

2. TIME STUDY AND PRODUCTION STANDARDS

Time studies leading to production standards for particular operations are another example of a tool or device used by managements to so systematize events that the guesswork areas of managerial activity are substantially reduced. Time study, like job classification, is not an exact science, although the use of precise stop-watches and numerical computations would lead the uninformed by-stander to that conclusion. Most unions have preferred to reserve the right of challenging the principle of time study electing, instead, to dispute only misapplications of the device.

Technological changes, because of their dire effect on both members and unions alike, have caused many disputes between unions and managements over the issue of production standards. The union in many cases, as a result of innovations, seeks to maintain its role of protector for the rank and file by bringing a great many of the new production standards into the grievance procedure in an attempt to show its members that the organization will not let them down in a period of substantial job changes.

The union can attack a time study in a number of areas which defy scientific adaptation. William Gombert¹⁵ in his analysis of time study, mentions speed rating, normalcy, and fatigue allowances as those areas of time study which are susceptible to rebuttal. Speed rating is "that process during which the time study analyst compares the performance (speed or tempo) of the operator under observation with the observer's own concept of normal

¹⁵ No. 16: Ch. 6, 11

performance."¹⁶ A normal performance is considered to be the performance of an incentive worker at any time during which he is actually working. The speed rating for that worker would be considered normal or 100%. Fatigue allowances, unlike delay and personal time allowances, are not capable of being reduced to statistical certitude.

When a job is broken down into sequences of motions and timed by the engineer, a statistical average is arrived at for each sequence. This observed time is then multiplied by the speed rating percentage in order to obtain the allowed time for each sequence. The allowed times for each sequence are then added, thereby deriving the allowed time for the production of the whole piece. This time value is then adjusted by the allowances for personal time, delay, and fatigue time, resulting in the time per piece. This method of obtaining the time per piece is very much dependent upon speed rating accuracy as well as the proper allowance factors. If any one of these factors is incorrect, the resultant time study will produce a loose or tight rate, with the very practical result of unduly increasing or decreasing the probability of the worker attaining his incentive for the production of the work.

Unions, already disturbed by the implications of innovations, characteristically oppose any production standard set for the new operations which the employees feel is too tight. Because of the nature of the concept of speed rating requiring, as it does, a subjective judgment on the part of the time study engineer as to what constitutes normal, the whole process of time study is shaky and vulnerable to a union attack. Management realizes the problems involved and can only strive to have consistency in their speed

¹⁶ No. 33: p. 110

rating. This consistency would eliminate the bad feeling engendered by discriminatory rates.

The problem of fatigue allowances, although not solved directly by psychologists and engineers, has been lessened to some degree by the introduction of modern methods restricting the fatigue-prone jobs to a minimum. Professor A.G. Anderson of the University of Illinois, after spending a year studying the effects of fatigue upon the worker in a large midwestern factory, stated: "The general and final conclusion of this study of human fatigue is, then, to the effect that industrial operations as carried on in a modern, progressively managed manufacturing plant do not subject the workers to undue fatigue, either physical or mental, and that fatigue is not a factor tending to limit production."¹⁷

Unions, then, are expressing their own and their members' attitudes toward the innovations of automation and work simplifications to a large degree when they oppose re-evaluations of jobs and production standards. This is not to be considered unusual because of the nature of a union which is essentially a political organization. In a word, it could be stated that unions attempt to slow managements down in the introduction of innovations by making it difficult for management to use those devices necessary for a rational approach to managing a large organization.

CHAPTER VI

FEATHERBEDDING - A COSTLY SOLUTION

Featherbedding is "the receiving of compensation for work that is not required by the employer or not tendered or performed by the employee recipients of the indicated compensation."¹⁸ There are three types of practices: (1) work or services not necessary in the employer's opinion but because of industrial usage have become necessary, (2) services which are required and paid for but are not tendered and not performed by the workers, (3) services not required, not tendered, and not performed by workers, but which must be paid for by the employer.

The first type of practice is the most important concern for this study because it is the result of machine displacement. Industrial usage or custom leads to the formulation of work rule provisions between unions and managements which are not as easily changed as are the circumstances which lead to their adoption.

1. THE PRACTICE OF WORK RULE PROVISIONS

Technological advances upset the previously existing customs and institutions of the work environment. These precedents, at some earlier time, had a sufficient reason for their existence and were considered as part of the labor agreement. Many times, upon the advent of an innovation, the reason for the precedent's existence is eliminated. Management, attempting to cut down on inefficient operations, demands the revocation of the precedent involved. The workers, feeling that they have lost a right previously obtained, demand protection from this sort of relapse in working conditions. An example of this type of precedent or work rule dispute took place at the Bethlehem Steel Company in 1959. A steelworker was employed as a crane

¹⁸ No. 30: p. 72

operator, removing hot ingots from a special type furnace. The temperature of the crane cab often surpassed 120 degrees, resulting in a custom or work rule which stipulated that the operator must be relieved every two hours. Innovations in this particular work environment were made in order to increase efficiency and an air conditioning unit was placed in the crane cab, reducing the temperature to a comfortable 70 degrees. Management was quite surprised to find that the workers and the union fought to retain the two hour relief, even though the reason for its existence, namely, the high temperature, was eliminated.

The most patterned example of disputes over featherbedding charges is in the railroad industry. Management claims the featherbedding practices of the Brotherhoods are costing the industry 500 million dollars a year.¹⁹ The favorite targets for management charges are: the firemen's reduced responsibility, the basic day rule, and the double compensation rules applying to road and yard workers. The Brotherhoods have been meeting these charges with rebuttals, preferring to point to the total failure of railway compensation plans to provide for: (1) severance pay on dismissals, (2) supplemental unemployment insurance benefits, (3) overtime payments for seven day assignments, (4) time and one half for holidays, (5) premium pay for weekend work and (6) differentials for night work. They have a strong argument in the fact that although employment levels are dropping to a new low, carloadings are rising. The Brotherhoods sum up their arguments by substituting the word "thornbedding" for "featherbedding."²⁰

The Electrical Industry also has had its share of disputes over featherbedding but to a much smaller degree of intensity. Firemen, who at

¹⁹ No. 12: p. 92

²⁰ No. 20: p. 1

one time shovelled coal into furnaces by hand, are now furnace-tenders in that they check valves and watch over the machine. Management wanted to include in the firemen's job description the additional duty of cleaning up floors and areas which were close enough to the furnace to keep them working steadily.

The Millwrights were traditionally a group of highly skilled men who took care of the integral parts of the machinery, pulleys, and torsion bars. Now, because of innovations in office equipment, they have been embroiled in a dispute over jurisdictional boundaries when moving I.B.M. office equipment with the materials handlers, a lower skilled group of workers. This is a jurisdictional problem for the I.B.E.W. to work out. In general, they favor the use of materials handlers for moving the office equipment leaving to the more skilled millwrights the job of handling heavy machinery. The union's rebuttal to management's claim of inflexibility consists of the theory that a higher paid group should be specialists and that the millwrights would indeed be featherbedding if they were to move wastepaper baskets around for \$3.50 per hour.

We can analyze the ingredients of a dispute over work rule provisions into several stages: (1) the existence of a condition which warrants the worker to perform or forbear from performance, (2) the establishment of a custom or institution called a work rule provision because of this condition, (3) the introduction of an innovation or technological advance removing the reason for the establishment of the work rule, (4) the reaction of the three parties involved to the attempted abortion of the work rule provision.

The first three stages are, in fact, concomitant results of a dynamic and growing economy. The proper method of reducing the impact of work rule disputes is by analyzing the attitudes of each party toward the innovation (see Chapters II, III, IV) and by attempting to arrive at some equitable solution for all three parties.

2. PUBLIC POLICY ON FEATHERBEDDING

The only instance of federal legislation upon the question of featherbedding, as it applies to industrial strife, is contained in the National Labor Relations Act of 1947, section 8 (b) (6). The Taft-Hartley Act makes unlawful attempts to cause an employer to "pay for services which are not performed or not to be performed."

A Loose Rule. The important issue is neither the necessity for nor the usefulness of the services performed. The issue is performance and not necessity for performance. Justice Burton of the United States Supreme Court commented, "However desirable the elimination of all industrial featherbedding practices may have appeared to Congress, the legislative history of the Taft-Hartley Act 29 U.S.C.A. Sec. 141 et seq., demonstrates that when the legislation was put in final form Congress decided to limit the practise but little by law."²¹ Because of the looseness of the law, a union would have to exhibit a great deal of ignorance and arrogance in order to violate it. The law is aimed primarily at "Petrillo" type cases where no services are intended to be performed. It completely avoids areas where two or three workers perform services, no matter how useless and inefficient.

Justification of A Loose Rule. The Taft-Hartley Act placed featherbedding under the general category of unfair labor practices on the

²¹ No. 8; pp. 105-106

part of unions. The relief sought by an employer must be through the National Labor Relations Board. If the law were very restrictive, an unbearable burden would have been placed on the shoulders of the Board. The Board would have found itself saddled with the responsibility of determining the usefulness and necessity of services in a host of industrial circumstances. A more restrictive law would have usurped the grievance procedure of every industrial concern. As the law presently exists, any situation of a featherbedding nature which concerns the usefulness and necessity of services performed must be ironed out by the two parties to the agreement, either by bargaining procedures or by the use of an arbitrator as the ultimate judge of grievances. A tighter law would have placed all industrial cases of this type under the jurisdiction of the National Labor Relations Board because of the Taft-Hartley's remedy in cases of unfair labor practices. The Board would have been inundated with featherbedding charges, thereby preventing the Board from considering equally important issues, such as the determination of the bargaining unit, the conducting of certification elections, and overseeing of unfair labor practices.

Public policy is of little consequence in this area of industrial jurisprudence. The parties themselves are left to solve this type of problem in the best way possible.

3. A MANAGEMENT POINT OF VIEW

Management groups can not tolerate this idea of having more men on the work scene than are needed because of the results of such a practice. There is an unjustifiable cost increase which must either be passed on to the consumer or be absorbed by decreased profits. An increase in price may mean

a decrease in the demand for the product. Decreased profits are not in the interests of the stock holders.

Featherbedding is a waste of labor resources because men are not contributing as much as they could to the national gross product. By performing useless services, the laborer obtains a paycheck but nowhere else is there any benefit to the economy. This practice of featherbedding, then, is in direct contradiction to management's thinking concerning their own prerogatives in the leadership and utilization of the labor force.

4. A UNION POINT OF VIEW

Increased productivity due to the innovations of technological advances justifies the use of such practices because the unit cost per product is not increased. Until such time as management groups take it upon themselves to retrain and place the worker in a position consistent with his former occupational status, the worker has the right to enjoy the benefits of an employment situation which once was his and which has been since changed but through no fault of his own.

The union also feels that in many cases, the usefulness of the service performed is in essence a safety measure which is totally justifiable. An innovation may change the requirements of the job from a physical laborer's position to a position of control in order to insure the safety of others and the well-being of the machinery.

CHAPTER VII

PERSONALIZATION: A MANAGEMENT RESPONSIBILITY

Management, if it wishes to lance the infested areas where featherbedding exists in the employment relationship, must take upon itself the responsibility of helping displaced workers regain their economic independence. Experience has shown that unions will not passively allow management to disclaim all responsibility for the plight of the unemployed. Personalization is a prerequisite for union cooperation in the reduction of featherbedding practices. Because of the political nature of a union, a bridge must be provided to protect workers from the effects of unemployment due to technological advances. Personalization properly provided and administered is that bridge.

1. PERSONALIZATION DEFINED

Personalization means the attainment and administration of a system of rehabilitation and retraining for technologically displaced workers so that a smooth transition to a new and productive occupation can be made. A union which is composed of members whose skills are flexible is in a much freer political position to decide upon the question of utilization of or forbearance from featherbedding practices.

2. CONTRACT CLAUSES RELATING TO PERSONALIZATION

"Where the appropriateness of an employee's job classification is affected by new or changed methods or work assignments to the extent that the classification is no longer appropriate for the work he is performing because the work of his job classification has been separated into two or more different classifications or where for any reason an employee's job classification is not appropriate for the work he is performing (either of which determinations of appropriateness may be challenged by the Union through the grievance procedure), the employee, if not placed in a different classification in the same or higher labor grade, will have the right to move into the first classification available to him in the following steps. Where more than one employee

is involved in such a change, the employee with greater seniority shall have superior relative rights at any one step for placement or assignment over an employee with less seniority:

1. In an opening in the same seniority grouping and same labor grade (or higher labor grade, if he is qualified therefor) in the same plant; or if not, then
2. In an opening in the same seniority grouping and same labor grade (or higher labor grade, if he is qualified therefor) in the same Division and location; or if not, then
3. In an opening requiring similar basic skills in the same labor grade but in a different seniority grouping in the same plant with an on-the-job training period of up to ninety (90) days; or if not, then
4. In an opening requiring similar basic skills in the same labor grade but in a different seniority grouping in the same Division and location with an on-the-job training period of up to ninety (90) days; or if not, then
5. In an opening in the same seniority grouping and same labor grade (or higher labor grade, if he is qualified therefor) in a different Division; or if not, then
6. In an opening requiring similar basic skills in the same labor grade but a different seniority grouping in a different Division with an on-the job training period of up to ninety (90) days; or if not, he shall remain personalized until placed as above."

"Where an employee through the operation of any one of the six steps above is reclassified into a different occupational title in a higher labor grade or in the same or higher labor grade in another seniority grouping, he shall be considered as in a trial period in his new occupational title for ninety (90) days or the training period, whichever is less, and may be returned to his previous occupational title during such trial period to be processed once again through the six steps specified above."

"If any personalized employee is offered a reasonable transfer into the same or a higher labor grade, except to a location to which he does not normally have layoff rights, he may refuse such transfer, but such refusal will result in loss of his personalized rate. An employee may accept downgrading in lieu of being transferred, but must surrender his personalized rate."

"The Union and the Company agree that they will review the handling of personalized employees and procedures set forth above within one year after the signing of the Agreement."²²

It should be noted that these clauses stipulate a minimum of ninety days retraining time for each displaced worker. This contractual procedure allows management the legislative initiative of deciding whether they will invite featherbedding or take advantage of the necessary retraining time to actually rehabilitate workers.

Management can induce featherbedding practices by shuffling workers back through the various steps, waiting for the required minimum or ninety days to pass before laying off the workers involved. This in effect means that time and money have been spent without any serious effort to utilize the services for which costs have been incurred. The costs amount to ninety days' pay per worker and training time on the part of the instructor or foreman.

If management decides to plan ahead, so that the potentially displaced worker is trained prior to the impact resulting from the installation of the innovation, the whole arrangement will be more productive than previously possible. The innovation should accomplish the efficiencies that motivated its inception, and one or more workers will be retrained and fitted into a more productive and satisfying role in the employment relationship.

Both parties to the agreement will react with more responsibility when confronted with this type of contractual liability. Management, faced with the fixed costs of retraining workers, will be motivated in utilizing the expense to obtain the optimum result. Unions will know that the displaced worker will be retrained thereby giving them more political freedom in cutting down on the wasted resources expended in the utilization of a policy of featherbedding.

3. THE NECESSITY OF PROPER PLANNING TO KEEP WORKERS AHEAD OF INNOVATIONS

It is an economic and social necessity to keep workers abreast of the installation of innovations which threaten to hinder their own income-producing faculties.

Unproductive labor resources cut into the potential gross national product. The wealth of the nation is reduced by the amount of unemployment existing in three ways: (1) there are less goods and services being produced than potentially possible, (2) there are less goods and services purchased than could be, (3) the cost incurred by governmental expenditures for unemployment compensation could be put to better marginal utilization in the acquisition of more productive goods for the whole economy.

Congress has defined as the law of the land that there shall be full employment.²³ The aim of the American Government in legislating economic intervention was said to be the promotion of full employment in order to advance the standard and level of living.

The most intelligent policy to follow in dealing with the effects of technological advances is that of preparation. The retraining of workers is far superior in economic justification than any type of featherbedding practice.

CHAPTER VIII
AN EVALUATION OF THE FEASIBILITY OF
CONTROLLING TECHNOLOGICAL ADVANCES

The effects of technological advances have been extremely disturbing to employment relations. Some individuals attempt to heal the wounds of the unemployed by proposing that all technological advances be halted. This proposal is as old as the problem it attempts to solve. The Luddite Riots of 1816 were the earliest English reaction to the social problem of displaced workers. "The Poorest Classes, thus condemned to forced idleness, avenged themselves by destroying the machinery to which they naturally attributed their unemployment. These so-called Luddite Riots which had begun as early as 1811, reached their climax in 1816 when social disturbances and wanton destruction of property occurred in every part of the country."²⁴ Proposed attempts to halt industrialization here in America have failed while the economy has grown and benefited by better and more economical means of producing goods and services due to the increase in innovations.

A faction of union leaders headed by William Gomberg has urged a special type of control upon the introduction of large scale technological advances. They would like to see governmental control over the installation of innovations restricting their introduction in all economic periods of the business cycle except for the boom periods during which the dislocation of employees would only be temporary. In this manner the restrictionists hope to solve all social problems related to innovations.

There are, however, two types of problems caused by technological advances and neither of these proposals can solve one without heightening the

²⁴ No. 18: pp. 34

importance of the other. The first problem is that of a social nature, namely the dislocation of labor. The second problem is economic in nature. The United States has accepted the economic responsibility of aiding foreign countries which entails bringing into this country goods manufactured at lower wages, paying less taxes and often subsidized by the taxation of the American public and business interests.

We must seek a solution which not only remedies the social problem of rehabilitating displaced laborers but also answers the economic problems of keeping the inflationary tides down by producing more goods with the same or less fixed costs, thereby effectively giving the consumer more for his money and equalizing the effects of foreign imports. The answer to our problem lies not in controlling the introduction of innovations but rather in intervening and administering some policy which remedies the faults of the market mechanism as it applies to labor resources and innovations.

1. NECESSITY FOR METHODS IMPROVEMENTS

Technological advances are a necessity for any country which wishes to have a dynamic and growing economy. It is only because of technological innovations, which allow more goods to be produced at lower costs, that the consumer can raise his level of living. National advertising which raises the standard of living would create more social problems of a discontented nature if technology were unable to aid the consumer in buying more types of products for less cost. Advertising, an absolute necessity for today's economy, can raise the standard of living of Americans by creating new desires. This can be advantageous or disadvantageous. If technological advances could not by massproduction methods reduce the costs of these items to a point where the average consumer could get his share, then our nation would

possess the lowest satisfaction ratio of all the world economies. This is true because of the philosophical principle which states that knowledge precedes desire. Advertising gives knowledge to the consumer and thereby creates desire. Technological advances are the means by which goods are made available to the consumer at an attainable price. Technological advances are therefore necessary to keep the level of living in line with the standard of living.

2. DIFFICULTY OF POLICING CONTROL,

IF ADOPTED

Even if we were to concede that governmental control were the optimum solution to this problem created by innovations, we would be faced with the impossible task of policing the control. Every case in which a change displaced workers would have to be sent to a court or board to determine whether or not the government would allow such a change to be installed. The number of cases before any such board would be staggering and it would in effect be tantamount to stopping all innovations because of the time delay and bureaucracy involved.

Another problem to be solved if the government were to control the introduction of innovations is the inherent inability of government officials to decide upon the merits of the innovation and its effects because of the technical nature of the subject matter and particular circumstances involved in each case.

If technological advances were to be controlled, we would solve the social problem of displaced workers but we would have created a great many more problems for the American economy and consumer. The answer lies not in control of innovations but in the rehabilitation and retraining of

workers so that a smoother transition will be possible.

3. THE QUEST FOR THE OPTIMUM SOLUTION

Technological innovations are important to the growth of the gross national product. The total goods and services produced have increased during the period from 1948 to 1957 by 22.10%. Most of this growth is due directly to the introduction of innovations which allow more goods to be produced than previously possible.

Technological advances have been instrumental in preventing runaway inflation. The Consumer's Price Index, commonly called the Cost of Living Index has risen 25.50% from 1948 to 1959.²⁵ Without the ingenuity of finding more efficient methods of producing goods at less cost per unit, this index would have risen substantially more than it did.

We must not control innovations because of the serious impact of any such restriction upon the gross national product growth and the inflationary trend of prices. We must look for the optimum solution which will reduce the significance of the social problem of displaced workers without creating the economic problems of runaway inflation and destruction of gross national product growth.

²⁵ No. 21: p. 1881

CHAPTER IX

THE OPTIMUM SOLUTION

Technological advances are not new, they began with the Industrial Revolution and have been ever-present since that time. The Luddite Riots of 1816 in England, the "Green Hands" dispute of the American shoe workers in 1872 are the most notable examples of how workers first tried to cope with the social problem of unemployment due to innovations.

The recent acknowledgement by the public that featherbedding practices and work rule disputes are growing in significance points to the realization that a solution to the ramifications inflicted upon employees due to the installation of methods improvements must be found.

The solution found must reduce the social inequities caused by innovations while advancing their economic implications. It would be best to fit the solution into some aspect of the problem so that a logical relationship between the solution and the problem may be recognized as justifiable in order to gain the acceptance of management, labor, and the public.

1. SUMMARY

A serious study of management's motivation for the installation of methods improvements showed that such innovations furthered their competitive position by improving production control methods, quality control and safety. Technological advances have also extended to management groups the opportunity of having more information available upon which to base their decisions.

Employees fear technological innovations because of their ability to cause unemployment, to reduce the utilization of their skills and their social status.

Unions oppose the introduction of methods improvements because they cause a loss of membership together with the concomitant result of decreasing financial receipts. Unions find these changes also cause intra-union jurisdictional disputes due to the creation of new job classifications which combine two or more separate occupations. Finally, unions know that there is little correlation between productivity and wage increases.

The two methods which are and have been used by unions to protect their members and insure continuance of organization are the featherbedding practices of unproductive work rule provisions and attempts to slow down the rate of introduction by raising the frequency of grievance disputes on such issues as production standards and job classifications of the newly created jobs.

The management view that the company need not concern itself with the plight of unemployed workers has no more justification than the equally odious principle of keeping workers employed by having them perform useless services.

2. CONCLUSIONS

A solution to be best for all parties concerned must solve the social problem of displacement by those means which are socially and economically justified, thereby reducing the reason for the existence of any featherbedding practices and motivating union-management cooperation in place of mutual suspicion.

The solution I advance is believed to be the optimum solution when one studies all the aspects of the problem of occupational displacement due to technological advances. Taking into consideration the attitudes, histories

and motivations of both parties and relating these basic philosophies to the problem of the disruptive effects of innovations, we must fuse the solution to the problem itself rather than stipulate some outside bargaining proposition to reconcile the social and economic dilemma of technology.

Managements must allocate a justifiable percentage of the increased profits, due directly to the productivity increases implemented by the technological change, to a fund which will be administered by a joint committee of union-management representatives to provide retraining and rehabilitation of the workers displaced.

In actual administration, the fund could be managed much like the fund set up by the Automotive Industry to provide supplemental unemployment benefits. This would call for a percentage of the profits due to technological innovations, up to a stipulated maximum point, to be placed in the fund so that the re-educational costs could be financed.

There are two examples of such an arrangement in operation as of now. The Haloid Xerox Company, manufacturers of photographic supplies and machines, has demonstrated its desire to keep up with improvements without displacing its workers.

A dozen of its employees have been sent to the Rochester Institute of Technology for six weeks retraining. Plans are now laid for sixty more men to enter the Institute. The company is paying not only their tuition, but their wages as well. They will continue to receive the same rate of pay even though their new jobs will call for different skills. Their seniority rights will be protected.

Another example is that of the Armour Company. Armour is trying to escape from its profit squeeze by closing obsolete plants, relocating

its facilities and installing automatic machinery. The effect of this policy was quite disruptive to union-management cooperation until the union and Armour decided on a method of solving this problem of displaced labor resources.

"Under the new plan, Armour will contribute one cent for every hundredweight of meat shipped, up to a total of \$500,000. The fund to be administered by a committee of four management and four labor representatives, with a neutral chairman, will be used to train employees in the skills required by the new machines, and to assist displaced workers in moving to jobs in other parts of the country."²⁶

This type of plan is the forerunner of a practical solution to the problem of displaced workers. By using the gains resulting from innovations to finance a fund dedicated to the retraining and rehabilitation of workers affected by methods improvements, there is an essential and intrinsic justice to the system which, if lived up to by both parties, will increase and make meaningful the attitude of cooperation.

Unions which have this type of plan will be subject to less political pressure forcing them to adopt the wasteful and unproductive practice of featherbedding. With this pressure reduced, the unions will be able to look at their responsibility to the public with a more realistic appraisal.

Managements will be able to increase efficiency by installing innovations without fearing a decline in morale and an increase in featherbedding practices for the cost of the retraining fund.

The interests of the public can best be served by this type of plan because it gains the benefits of increased mobility of skilled workers

and more efficiency in productive processes due to the elimination of costly and unproductive retaliative procedures.

This plan does not cost as much as it would at first appear. Management is already paying out substantial sums of money in the form of taxes to allow the government to aid the displaced worker by the use of unemployment compensation together with the costs incurred by the implementing of wasteful featherbedding practices. This solution attempts to rid the economy of excess unemployment by retraining workers for suitable occupations and by reducing the political pressure on unions to use wasteful employment practices.

This solution attempts to do something positive about unemployment and featherbedding. It does not wait for an upswing in the business cycle to relieve the community of the social problems.

ALTERNATIVE SOLUTIONS

There are two alternative solutions currently being implemented as a means of getting acceptance for these innovations. These are "sharing the gains" and profit sharing plans.

Sharing the gains. A long standing principle advocated by unions is that of sharing the gains due to technological innovations. The additional profits derived through the use of innovations are shared by management and employees in any number of possible percentage shares to be determined by the process of collective bargaining.

If an innovation increases company revenues by \$10,000, management may share the gains by giving the employees \$4,000 in increased wages.

This practice, however, is not the optimum solution to the problem. This solution rewards not all the workers but only the employees left after

the innovation has been installed. Hence the workers who remain receive the benefit of this practice while those who are displaced and need the economic subsistence receive nothing.

The practice of sharing the gains also overlooks the percentage increase of effort on the part of the workers in relation to the reward received. Some of those receiving the reward may not do anything more than they had been required to do previously.

The Bituminous Coal Industry lost 50.30% of its workers while producing only 12.00% less which indicates a substantial increase in productivity per man hour.²⁷ Utilizing a wage policy of compensation for productivity increases, the union obtained for its members an average hourly earnings increase of 59.10%. The Railroad Industry (Class I) lost 25.80% of its workers while car loadings dropped only 10.00%. This increase in productivity per man hour justified a 76.60% increase in average hourly earnings for the workers. Both of these industries have employed a policy of wage compensation for productivity increases. This policy has a cyclical effect. When productivity goes up, the workers receive added compensation. Higher payroll cost leads managements to seek technological innovations which will cut labor costs. These innovations by increasing productivity while cutting costs set off another round of wage increases and innovations. This policy does not help those workers displaced by the methods improvement and it does not face the responsibility for the soaring governmental costs incurred because of added claims for unemployment compensation.

Profit sharing plans. Profit sharing plans are often used as a means of obtaining both union and employee cooperation in the introduction

²⁷ Table I

of innovations. A profit sharing plan attempts to elicit cooperation of employees by setting up the machinery to reward the workers for those productivity increases which lead to greater marginal profit.

General Electric has a stock bonus plan. The formula for accruing the employees' return is determined in the following way; an amount equal to 15.00% of the aggregate cost of his bonds purchased during that year is divided by the average market value of General Electric Stock at the end of each month of the year. The employee is then credited with the number of shares resulting from this division, any fractional interest being figured to the one-hundredth of a share.

From General Electric's point of view the plan serves three purposes; (1) it makes it easier for employees to purchase and retain bonds, (2) it makes it possible for the employee to obtain a higher rate of return than he could ordinarily get, (3) it makes the employees interested in the welfare of General Electric by making them stockholders in the company. Number three is intended to keep production climbing and means smoother industrial relations. Technological changes will be accepted more readily since production and therefore profits will be increased.

Unions generally have been slow to praise the use of a profit sharing plan, although it has been defined as a proper subject for collective bargaining in the Inland Steel Case.²⁸ They object to pension profit sharing plans as a method of; (1) keeping unions out, (2) reducing wages to a sub-standard level, (3) depriving a worker of his rightful share of the profits because most plans avoid full and immediate vesting, (4) reducing labor mobility and (5) increasing paternalization.

²⁸ No. 28: p. 1310

Unions, weighing the advantages and disadvantages of profit sharing plans, may actively seek to obtain them or refuse to substitute them for direct wage increases depending on the union's personal philosophy of the essential goals of trade unionism. When, however, profit sharing plans are offered as a solution to the disastrous effects of technological advances, most union officials realize that this type of bargaining is essentially the same as the "sharing the gains" solution. The theory here is the same, reward the workers left on the job and not those displaced by the change.

In conclusion then, we must realize that the optimum solution to the impact of technological advances upon union-management relations lies in the protection of the displaced workers rather than the workers left on the job. We must allocate money to finance the retraining directly from the cause of the need to retrain workers. We must, in fact, use the economic advantages of technology; namely, improved production methods, quality control and safety which result in increased productivity and profits to finance the solution to the social problems caused by technology.

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