THE PLACE OF HUMAN RELATIONS IN SCIENTIFIC MANAGEMENT

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CHAPTER I

DEVELOPMENT OF SCIENTIFIC MANAGEMENT

More than any other individual, Frederick Winslow Taylor is responsible for the system known as scientific management. It therefore seems fitting to review briefly his background as a setting for the system.

Taylor was born in 1856 of Philadelphia Quaker parents, and was employed by the Midvale Steel Company in 1878 as a laborer and later served his apprenticeship as a pattern-maker and machinist. Subsequently he worked as time clerk, machinist, lathe gang-boss, assistant foreman, master mechanic, chief draftsman, and came to be chief engineer at twenty-eight. Such extensive, practical experience (during which he attended college in his spare time to further prepare himself) acquired in so short a time, identified him as a man of extraordinary energy, determination, and purpose.[1]

From the time Taylor became lathe gang-boss until he rose to foreman three years later, a curious struggle took place in which the personal friendship between the foreman and individual worker was crossed by the bitter struggle between the foreman and workmen as a group. The latter sought to regulate the quantity of work produced to prevent traditional rate-cutting. In this strife he was fortunate to have the owners' confidence, primarily because his upbringing was not that of the workers, as he was from an upper middle-class family. Also, the fact that he did not live in the worker community precluded his being subject to the social pressure that biased other less fortunate supervisors. After he was made foreman, several friends asked his advice

in regard to increasing output under the prevailing price practice. He told them, friend to friend, he would resist if he were in their position as a worker. Moreover, he was certain that the almost constant daily piece-work pay (due to rate cuts if too much production raised wages substantially above the customary average) was due primarily to management's lack of knowledge as to what constituted a fair day's work.

Accordingly he persuaded his employer to sponsor some special studies with respect to a fair day's work. He asked this on the strength of his fine record of having increased production where countless others had failed. Initial studies to determine criteria for a reasonable day's work led him ultimately along two lines of experimentation. One related to the tools, machines, and materials (metal-cutting) and the other to the workmen's methods of handling these tools, machines, and materials -- time and motion study. The first series of experiments was continued at Bethlehem Steel, and led to the discovery of high-speed steel, revolutionizing the art of metal cutting. Out of these experiments grew the system of coordinated shop management later known as scientific management.

Taylor's convictions were transformed into experimental conclusions substantiated by systematic, organized notes made for several of his own and others' experiments. At Bethlehem, he increased a man's pig iron car loading capacity from the prevailing 12.5 tons daily average to 47.5 tons, double even the most optimistic estimates of competent supervisors. Bethlehem shovelers reduced long ton handling

costs of ore from 7.2 cents to 3.3 cents, by scientific shovel selection, increased pay, and better work planning. Under Taylor, thirty-five women ball-bearing inspectors performed the work previously handled by one hundred twenty women, and with accuracy improved two-thirds. Additional advantages were doubled pay, 10.5 hour days reduced to 8.5, and four spaced rest periods daily. In an above-average machine shop, Taylor proved that an average machine (a lathe in this case) producing satisfactorily, could be changed and regulated in regard to drive, operated with the aid of a special slide rule, and thus yield time savings 2.5 to 9 times the existing averages.[1] Gilbreth's classic bricklaying experiment increased the old standard of 120 bricks per hour to a new figure of 350 per hour, all of which was accomplished by improving methods and equipment.[2]

Throughout all these experiments careful selection of workers, training, and job changes for the unqualified were necessary. Also, the cooperation of workers was consistently maintained, because Taylor made them feel that he sincerely had their best interests at heart. In addition, their pay was increased and operational difficulties were removed by management planning and new facilities. All the existing systems of management allowed the men generally to "select themselves", which frequently resulted in gross misplacements and resultant low quantity-quality output. Their correct placement was in the best interests of all concerned. In the case of the pig iron loading, only one out of every eight men in the existing crews was physically able to maintain the higher-paid 47.5 ton daily output. Those displaced were transferred to jobs for which they were better qualified.[1]

Taylor joined the American Society of Mechanical Engineers (ASME) in 1886. The same year H. R. Towne, president of Yale and Towne Manufacturing Company, presented a paper entitled, "The Engineer as an Economist". Towne pointed out that management is more than an expression of executive ability. To insure good management, executive ability must be joined with "a practical knowledge of how to observe, record, analyze, and compare essential facts in relation to wages, supplies, expense accounts, and all else that enters into or affects the economy of production or production cost."[2]

Of the numerous papers presented within the next ten years, Taylor's "A Piece Rate Work System", offered in 1895, was the most notable. It emphasized his differential piece rate rather than managerial principles implied but not specifically expressed. Taylor was more than a little disappointed to see his basic ideas fail to gain recognition.

"Shop Management" was presented and discussed at the 1903 meeting of ASME. In this paper he attempted to correct the impression of his preceding work, "A Piece Rate Work System". He specifically set forth the six basic principles of his version of scientific management:

1. The objective of good management is the combination of high wages and low unit costs.
2. This objective can be achieved only by the application of strictly scientific methods of research and experiment to the study of the detailed problems of management.
3. The establishment thereby of laws or principles which may be expressed in standards of procedure that give control of operations.

4. The scientific selection of workmen, materials, and processes, and the establishment of working conditions to meet the requirements of the standards.

5. The scientific training of the workmen to improve the application of their skill in accordance with the standards.

6. The establishment of such intimate and friendly cooperation between management and workers as to insure a stability of the psychological environment of the shop, which would make possible the application of all the principles above and the utilization of the mechanisms to give them effect.

H. L. Gantt submitted an article entitled, "Training Workmen in Habits of Industry and Cooperation" at the 1908 ASME convention. Gantt was strongly opposed to arbitrary, autocratic acts and decisions on the part of management. Consequently he stressed the development of goodwill between employers and employees. His approach was to insist that workers' efforts resulting in lower unit costs should be shared with these workers thru increased worker earnings. He strongly believed that driving and exploiting workers must give way to a policy of leading and teaching, to the mutual advantage of all concerned.

By 1911, Harrington Emerson had differed with Taylor in one important respect, i. e., plant organization.[2] Both men agreed insofar as the following primary breakdown was concerned:

1. Analysis and accurate estimate of productive elements and preventable waste.

2. Standardization of obtainable performance maximums.

3. Incentives devised to show employer-employee interests are parallel in attaining or bettering standards.

Taylor's organization model was a highly specialized, well-defined staff type or "functional force" having two primary divisions:

1. Planning
    a) order of work clerk
    b) instruction card clerk
    c) time and cost clerk
    d) disciplinarian

2. Execution of operations
    a) gang boss
    b) speed boss
    c) inspector
    d) repair boss

Under this type of organization each worker reported to all eight of the above specialists, at different times, depending on what kind of help he needed. Taylor chose such an organization because he was constantly impressed by the difficulty in obtaining in the individual supervisors the varied and special information and the different mental and moral qualities necessary to perform all the duties necessarily demanded. His organization allowed no half-measures in order to function satisfactorily.

Emerson went back to the old line-type organization but supplemented it with experts to guide, instruct, suggest to, and counsel the regular line officials. This was a compromise with Taylor's extreme functional organization-type, and is quite similar to current organization philosophy. It is between the rigid line type and the highly fluid functional type. Emerson directed that any given operation's circumstances be

dealt with by the line executives, supported and advised by staff officers.

The term "scientific management" was first used in Taylor's book "Principles of Scientific Management" and in the Special House Committee hearings (see Chapter II) initiated by organized labor to survey the effect of Taylor's methods in the Watertown Arsenal. Public interest became intense, sustained, and a source of considerable spirited discussion. His book was translated into seven foreign languages.

The adverse, unfortunate effects of the period following the publicising and popularizing of scientific management may be attributed to several factors. Foremost was the reporting of the results of three viewpoints:

1. those who were sincere but conservative due to professional ethics
2. those biased by the desire to find controversial, repudiating evidence
3. those biased by preconceived philosophies

Craft union opposition seized on unfortunate, publicised illustrations and statements -- taken out of their context or distorted.

The outbreak of World War I, which just preceded Taylor's death in 1915, caused a sudden demand for production that caught his followers unprepared and without adequate methods. Emerson's approach was more rapid than Taylor's, whose secret was continued progress by evolution, not revolution. The sudden demand found many self-styled "efficiency experts" serving in a manner that brought undeserved abuse and

criticism to the true exponents of better management from those who failed to distinguish between the competent and the opportunists. Taylor himself made statements to the effect that increased incentive pay maximums should be sixty percent of the extra effort return because "it doesn't do for most men to get rich too fast". The statement's arbitrary quality conceals the logic that the means of attaining the extra output should be paid for in addition to management's, stockholders', and customers' logical claims for shares.

Another unfortunate and perhaps incomplete statement made by Taylor was, "What constitutes a fair day's work will be a question for scientific investigation instead of a subject to be bargained and haggled over." At present scientific investigation seems more nearly a means of reducing guesswork in regard to a subject where collective bargaining is now standard procedure. In the Watertown Arsenal hearings Taylor recognized the need of collective bargaining by stating it was necessary to meet labor halfway.

Responsible, but poorly informed, social scientists cited as examples of management's use of the system, various instances of speed-up, secret time-studies, and rate cutting. This clearly highlights the difference between administrative policy and operative management. The same criticism may be directed against any system of management, which merely performs in accordance with the dictates of formulated policy.

Incentive or efficiency rewards were primary considerations in either the Taylor or Emerson systems. Basically, wage incentive plans are of two general types, straight piece work and premium or bonus schemes. Piece work is the older and usually provides for incidental

non-productive interruptions. Failure to provide for unusual, extensive interruptions beyond the operator's control and jeopardizing his income security has been the usual shortcoming of this type of incentive. Its most objectionable feature is the employer practice of rate cutting when the job content has not changed to justify the cut.[3]

Premium payments have been devised by numerous individuals and groups, but the separate, distinct types are somewhat fewer in number due to a minor change being the basis for a new title. All have one common, distinct characteristic, namely, a guaranteed base rate with premium payments for production beyond an established standard in units produced or production time required. In cases where individual worker output cannot be determined, group incentive plans have been devised in which the group bonus is divided in proportion to base rates and time worked.[4]

It is estimated that in 1947 more than half the workers employed in production processes were under some form of incentive system. Average incentive earnings in three industries surveyed proved to be twelve to eighteen per cent higher than hourly earnings of day workers in the same industries.[5] In 1940, thirty-five years after scientific management was developed for use, Dr. Ewan Clague, Commissioner of Labor Statistics, gave one of the best current definitions[6] of the basic requirements for maximum productivity -- a definition which is unmistakably like those of Taylor and Emerson:

1. Material flow free of bottlenecks.
2. Modern equipment and mechanization.
3. Improved methods.

4. High volume sales to make possible high productivity.

5. Morale to boost productivity.

In the light of the achievements, it seems quite appropriate to conclude that America's most significant contribution to the industrial revolution is scientific management.

The best of typical managements, just prior to the turn of the century could well be termed "initiative and incentive". Men gave their best (broadly, initiative) to utilize the mass of traditional, "rule-of-thumb" knowledge imparted to them by various methods. In return the worker received varied, proportional incentives in the form of promotions, shorter hours, higher wages, good working conditions, incentive pay, and "personal considerations".

A comparison between the traditional and scientific or new management systems reveals six primary differences:

1. The new system assumes responsibility for gathering all information pertaining to a job and making it available for use by classifying, tabulating, and reducing it to rules, laws, and formulas.
2. The new system provides that the worker shall be scientifically selected and trained.
3. The scientific method stresses cooperation between workers and management to facilitate operations.
4. The traditional system had assigned major effort and responsibility for performance to the worker, whose only recourse was performance as best he knew how from personal experience.

Scientific management advocates a logical division of effort and responsibility between management and workers.

5. Traditional management had made some slight use of the first three points above, but never had considered them important. As to the fourth point, the work problem was "up to the worker", rather than being the responsibility of management.

6. Scientific management's basic premise is the task idea, planning, as a minimum, each tomorrow's task today.

Scientific management, especially in its current form, is more dependent upon real leadership than the less productive, older systems of management. The art and science of management are definitely distinct. Also apparent is the necessity of enlightened sources of administrative policy development, for here rests the ultimate determination of management authority. It would be well to recall Taylor's statement before a Special House Committee in 1911, "If the results of my work were merely to increase the dividends of manufacturing companies, I certainly should not devote my time to this object. Scientific management is for me, then, primarily a means of bettering the condition of the working people."[7] It is the author's opinion that the art of scientific management lies in the handling of the human element inherent in Taylor's real objective.

CHAPTER II

A CHALLENGE

Although it is true that industrial methods in this country surpass similar achievements in any other country, there is now an absolute necessity for a more scientific method of management in industry to keep pace with our economy and to meet the challenge of union labor. Careful consideration of the facts cannot but lead to the conclusion that if more scientific methods of management were universally applied to industrial operations, the development of this science would be the most important advance in industry since the introduction of the factory system and power machinery. The facts of scientific management are buried in academic textbooks and technical treatises. These facts should be brought to light and put into form for public understanding and acceptance.

For the past fifty years or more it has been a proved but not generally known fact that the use of scientific management methods in industry results in higher wages, steady employment, greater production, lower unit costs, lower selling prices, broader markets, and increased profits. For a verification of this claim reference need only be made to the remarkable accomplishments of Frederick Winslow Taylor (1856-1915), founder of scientific management, and to the subsequent work of a number of industrial scientists who followed him, such as Barth, Gantt, Gilbreth, Emerson, and many others who, collectively, conducted thousands of experiments within the plants of our largest and foremost industries.

During a period of about sixty years the principles of scientific management have been in the process of development, and during the past

thirty years have been applied in some phases to a considerable extent. Today, complete scientific management is in operation in only a very few companies. Certain phases of it, however, are being applied in a large number of companies. Witness after witness connected with managements who employed these methods, testified before a Special House Committee in 1911-12, and presented an impressive array of facts concerning results attained, -- greater productivity, greater profits, higher wages, and reduced prices to the consumer.[7] A definition of these methods is equivalent to a definition of scientific management. It is the attainment and coordination of a normal utilization of human ability and energy plus an optimum utilization of technological resources and facilities, justified by accurate, scientific analyses and measurement.

It is obvious to the interested business observer that we have now entered an era wherein new and strange-sounding services such as human relations surveys, management audits, internal public relations installations, industrial relations systems, and man-machine-hour utilization, are becoming essentials in the development of sound organization. If this era is not to be continually confusing, it requires that government, management, and labor be mindful that their cooperation toward a common cause is vital to our industrial supremacy. As a matter of fact, the actual interests of management and labor are mutual, one being unable to prosper without the other. No one has yet devised a way of producing goods without the application of human effort, i.e., work. Neither has anyone divined a method of meeting the complicated needs of present-day life without management -- since the things we make and market, the manifold services we as consumers require, demand performance by groups

whose multifarious efforts must be coordinated.

Management, on its side of the fence, has been prone to believe that higher wages, proportionate to present living costs and to standards of education and health desired by labor, will increase their product costs and decrease their profits. If management were convinced to the contrary, that in fact after the proper application of scientific management methods to its business it was proved that the opposite is true -- namely, that higher earnings and wages controlled by normal standards of performance and proper incentives (both financial and non-financial) would increase their profits and decrease their unit costs -- managements throughout the country would gladly sanction higher wage scales plus increased earnings resulting from equitable incentives. A number of these points are illustrated by the case in Chapter III.

Labor, on its side of the fence, demands higher pay along with better working conditions and methods. In addition to this, the average worker cherishes the desire to participate in any increased financial success of the company for which he works, to the extent that he contributes toward production over and above management's breakeven point. The average worker wishes to become a partner with management insofar as his particular work is concerned. He desires to be appreciated as an integral part of the company which employs him. Indications are that the worker wants to be paid, first, an equitable base compensation; secondly, an incentive over base pay for good production above standard performance; and thirdly, some tangible recognition of productive ideas or ingenuity contributed by him for the benefit of the company.

Integration of the above views of management and labor can be accomplished to the satisfaction and benefit of each. To be convinced of this fact, management and labor must see, by actual example, the result of their cooperation by the application of scientific management principles and realize that such application certainly can and will be of benefit to all concerned.

The majority of industrial managements, as they themselves well know, today employ individual phases of scientific management in a piecemeal fashion to accomplish certain specific results. Likewise, many labor unions are realizing the benefits to their members of the use of certain phases of more scientific methods of management. The difficulty inheres in the fact that managements and labor unions do not know enough about, utilize, or correlate all the phases of scientific management which are necessary to realize a high standard of living and industrial production. Further, managements and labor unions have not as yet developed sufficient vision to cooperate in this common cause. There is talk of it, but little or no action.

It may be helpful to list a number of benefits that would result from management and labor participating jointly in a more scientific approach to the solving of their problems:

1. Increase in production in proportion to equitable wages sufficient for a high standard of living, security, education and health for all workers.
2. Improvement in manufacturing methods and procedures.
3. Improvement in working conditions.

4. Increase in man-hour and machine-hour (burden and capital investment) utilization.

5. Decrease in maladjustments or strife, if any, existing between management and labor; great influence toward co-operation.

6. Establishment of equitable monetary incentives and social benefits for workers in consideration of production and ideas profitable to management over its breakeven point.

7. Improvement in work methods, thus decreasing fatigue of workers and resulting in better work performance.

8. Decrease in unit costs as a result of the foregoing benefits.

9. Broadened markets and new uses for manufactured products as a result of lower unit costs.

10. Increase in employment as a result of increased sales.

11. Development of the understanding between management and labor, through cooperation, that their interests are mutual.

12. Insurance of American industrial supremacy.

These benefits can be re-stated in another way, classified according to the recipients of the benefits.

1. For the Nation: an economy stabilized through management-labor cooperation; maximum employment; industrial supremacy; higher standards of living; security; better education and health.

2. For the Owner: more profits; satisfaction of beneficial accomplishment.

3. For Operating Management: lower unit costs; wider markets; increased sales.

4. For the Worker: higher wages, more jobs; no strife; interest in work; better living and working conditions; education and health standards raised.

5. For the Consumer: better products; lower prices.

The writer's experience in a wide variety of companies has convinced him that a proper perspective and acceptance of the place of human relations in scientific management will contribute vitally to the cooperation so essential to the achievement of the benefits suggested above.

Actual case studies of companies where scientific management principles and methods have been applied with some degree of completeness would be invaluable as aids in spreading the "gospel". As the writer sees it, when the Continuing Education Service of Michigan State College has become firmly established and its services to industry well-accepted by the general public, it will be in an excellent position to carry on some experiments and develop case studies of this type. Data could be developed that might very well have revolutionary effects on industry in the State of Michigan, not to mention significant implications beyong state boundaries.

Michigan is one of the leading industrial states in the Union, having well over six thousand manufacturing plants of various sizes. It offers excellent facilities for the indisputable proving of the workability and soundness of scientific management. Given a few receptive small and medium-sized companies, plus the extensive resources of the College attacking the problem from the impartial, scientific

standpoint of a true institution of higher learning, fruitful results should be forthcoming. The entire purpose would be to develop models that could be used as training devices in improving the management of other companies.

No amount of theory or words can take the place of an actual picture or example of what can be accomplished when common appreciation of the mutuality of human interests causes management and labor to cooperate. The development of such examples as are mentioned above, will provide the opportunity, with the sponsorship of the College, to prove conclusively to management and labor that their interest are mutual, and that they can work together for the profit and benefit of each. The results of those examples will influence other companies to improve their operating standards. The potentialities of a state program can create industrial accomplishment far ahead of any other state in the Union.

In the final analysis, when scientific management is understood, it is simple and easy. Mr. Everett E. Harris, formerly Chief Industrial Engineer for the Atlantic Refining Company, once declared to the writer "Scientific Management is one-third common sense, one-third ordinary ability and knowledge on the part of management and labor in any given industry or trade, and one-third scientific analysis, application, justification, and control".

A clearer understanding of the application of both the science and art of management (including the function of human relations) can best be attained by the examination of an actual case study. Chapter III is intended to serve this purpose.

CHAPTER III

THE ROSCOE COMPANY: A CASE STUDY

This case came to the writer's attention in 1944 when the War Labor Board was still in existence. The facts of the case are substantially true as related, but all names are fictitious.

The Roscoe Company, located in upper New York State, manufactures steel wire products, and was founded in 1845. At the time of this case old Clint Roscoe was president and sole owner of the enterprise which had been founded by his grandfather. When the third Roscoe inherited his father's mantle in 1914 it was a ragged one. The father had speculated with the firm's assets in the money panic of 1907, which left the company in a greatly weakened condition, even after seven years had elapsed.

Clint Roscoe's make-up was quite similar to that of his grandfather. He was shrewd, resourceful, and possessed of a tenacious determination when working toward any chosen objective. At the outbreak of World War I he went to England and bagged a sizable war contract for barbed wire. On the strength of this he was able to borrow additional money from the local bank. Other war contracts followed and the end of the war found his company in excellent financial condition.

When business slumped in 1921, he bought a small manufacturing plant next door at a bargain and then effected extensive alterations to dovetail the new acquisition with his own operations, and to prepare for improved business. In 1929, interests identified with the local bank offered him $8,000,000 cash for his company. He held out for $9,000,000 cash and a place on the bank's board of directors. After

considerable dickering his terms were finally accepted, and in August, 1929, he sold out, giving the new owners the right to continue operations under the same company name for ten years.

At the beginning of the ensuing depression Roscoe bought a controlling interest in the bank for $1,500,000 cash. By August, 1932, the Roscoe Company had almost ceased operations. Orders had fallen off 70% from 1929 and the labor force had been cut to one quarter of its 1929 size. Three months later the company was forced into bankruptcy and Clint Roscoe was appointed receiver. In the legal proceedings which followed Roscoe managed to regain control of the company for $2,500,000. At this time there were two other manufacturers in town making miscellaneous steel products. He bought both outright for a total cash outlay of $2,000,000. With the three companies he controlled, in normal times, about 80% of the town's labor force. The other 20% was accounted for by the service trades.

In 1933, after he had pulled his bank through the nationwide financial crisis, he established his plant wage levels at 15% above NRA rates, just enough to discourage workers from going on relief. He then incorporated his two new manufacturing holdings into the Roscoe Company as Plants 2 and 3. He conducted extensive alterations and purchased a considerable amount of new machinery and equipment. He hired three experienced industrial engineers as plant managers, with instructions to put his plants on an efficient operating basis, costs to be cut to the bone. Roscoe told them he expected business to improve within eight or ten months and he wanted his company to be prepared for a substantial increase in orders.

His managers worked well as a team and met with him once weekly. Within three months they had accomplished the remarkable feat of establishing an average company breakeven point at 40% of capacity. Some of the factors contributing to this success were an average hourly wage rate of 55¢, modern plant layout, careful routing of materials, tight production standards based upon the performance of the more efficient workers, company-generated power, newly-built railroad sidings to the three plants, and long-term requirements contracts at low prices with several important vendors, to take effect in six months.

Business improved for the company far beyond what had been anticipated. Production increased steadily until it averaged 60% of capacity in 1939. By adhering to the original policy of keeping expenses at a minimum, including an average hourly wage rate of 70¢ in 1939, Roscoe's managers (who were paid an annual bonus based on their efficiency) had expanded company profits enormously. Clint Roscoe's personal fortune had climbed to $15,000,000.

The plant managers felt that a large part of their success was due to the fact that they had the labor situation well in hand. Discipline among the employees was satisfactory, for several reasons. First, Roscoe enjoyed what amounted to a local monopoly of labor. Secondly, his managers had inaugurated a policy of disciplinary lay-offs in connection with the maintenance of production standards. One hundred percent of standard was required at all times. If, during a given work week an operator's efficiency averaged less than 100%, and was attributable to any cause other than verified illness in his immediate family, the operator was warned. If, during the three weeks following this warning the operator's

production again averaged less than 100% in the same manner, he was laid off without pay for two working days. If, during the month immediately following his return to work, his production fell below 100%, he was laid off one week without pay. Following the latter penalty he was required to maintain at least three months of 100% production. Otherwise he was discharged. Also, the plant managers had on a few occasions imported a small amount of colored labor from Tennessee and Georgia at rates as low as 50¢ per hour, to replace discharged local workers.

When World War II broke out in September, 1939 Clint Roscoe again made a trip to England and brought back three large war contracts for a variety of steel products. Foreseing a long war, he immediately erected additions to Plants 2 and 3, and instructed his three managers to push production to the limit. By 1941 the company's plants were operating at an average capacity of 80%. Because of increased costs the breakeven point had climbed to 55%. With America's entry into the war, a labor shortage developed throughout New York State, and rapidly became acute. At first, Roscoe felt he was safe by increasing wage rates substantially in a few skilled job classifications. This increased his average hourly wage rate to 85¢. Eventually it became necessary to import a number of tool and die makers all the way from New York City at $2.50 an hour. It later developed that two of these men were members of the United Steel Workers--CIO.

The new tool and die makers were mature men with wide experience in their trade and had observed the operation of production standards in numerous plants in New England and along the Atlantic seaboard. The Roscoe workers respected the superior skill and experience of these men,

and gradually became dissatisfied with their conditions of employment at Roscoe. The new men advised them that the Roscoe production standards were unfair and the average wage rates far too low in comparison with the cost of living and wage rates in other parts of the United States. However, most of the workers had spent their lives within twenty-five miles of the company, and did not wish to move elsewhere unless absolutely necessary. The tool and die men countered with the suggestion that a union be formed. On request, one of the new men, who was already a USW member, wrote a letter to USW headquarters in Pittsburgh, explaining the situation in detail. At the time the letter was written the Roscoe Company employed a total labor force of 6000.

In August, 1942 the USW headquarters dispatched an organizer to the Roscoe Company, and within two months a sufficient number of signatures was obtained to file a petition for a National Labor Relations Board election for certification. The election was held in December, 1942, and to Clint Roscoe's dismay the union was voted in by an 85% majority. The new union immediately notified the Roscoe management that it desired to arrange for collective bargaining sessions as soon as possible, but not later than February 1, 1943. The union stated that its demands would be submitted by January 15th.

At the January board meeting of Roscoe's bank, he discussed the whole situation in some detail with one of his board members who was also a member of the Regional War Labor Board. This board member advised him to engage the services of a professional negotiator, inasmuch as no one in the Roscoe organization was skilled in the technique of collective bargaining. He suggested the name of Everett Harrington, a well-known

management consultant in New York City, who had a reputation for fairness and firmness, and who was well-acquainted with and respected by a wide range of international union officials. Roscoe immediately telephoned Mr. Harrington and a meeting was arranged for the next day. As a result the management consultant was retained to represent the company in the negotiations.

Preliminary to the initial bargaining meeting with the union, the consultant obtained permission to make a tour of the three plants and interview various members of supervision. In the treasurer's office he examined financial and cost records in some detail, and in the planning department he carefully studied the figures back of established production standards. He also conferred at length with the three plant managers and ten representative members of shop supervision. After three days' intensive work Mr. Harrington came to the following tentative conclusions:

1. Employee turnover ran abnormally high, averaging about 15%.
2. Production standards were not based on fair time studies.
3. There was a notable absence of both financial and non-financial incentives for increased productivity.
4. Spoilage ran abnormally high, averaging about 10%.
5. General efficiency of the labor force was probaly half of attainable.
6. Morale of the labor force was abnormally low, with a growing animosity toward management.

When Clint Roscoe received the consultant's first conclusions, he was surprised and somewhat annoyed. He had considered that his plant

managers, being competent and experienced industrial engineers, had been doing an outstanding job. Mr. Harrington remarked that employee reasoning ability and emotional reactions are difficult to blend with a slide rule and "log" tables.

"What do you mean?" demanded Roscoe.

"I mean that the human relations side of your management job is almost entirely neglected."

"But we can't let costs get out of line, Harrington!"

"Mr. Roscoe, management would do well to study its competitors--government and union leaders--who have succeeded in awakening cooperation and increasing morale among their constituents while at the same time taking money from them in the form of taxes or dues. As a matter of fact, tomorrow's managers will be measured more by the nature and strength of their following than by any other single criterion. Thus there must be added to the list of attributes essential to managerial success this dominant element. Do you honestly feel this element is strong--or even present--in your own management?"

"Apparently not, judging from the NLRB election results."

"The measure, Mr. Roscoe, will not be simply one of acceptance on the part of employees, but unmistakable evidence of outward admiration and deep inward respect. Implicit in this is one assumption--namely, that management will find it essential to create a work environment that is <u>emotionally</u> attractive."

"Those are strong words, Harrington. But a man of your experience and reputation must know what he's talking about."

"I'll be a little more specific, Mr. Roscoe. We have cried out our sincere belief that people are the basis for the success of the business enterprise, that accomplishment can come only through people, that management must think everlastingly in terms of people—but we have selected our managers almost exclusively on the basis of technical proficiency and knowledge."

"My plant managers, of course. It seems that labor is no longer a commodity." Roscoe's expression was dour.

"No, Mr. Roscoe, it is not. It is not even enough to know your employees. It is vital also to understand them—to understand the complex motivations and reactions of human being in an industrial society."

"What do you recommend, Harrington?"

"The chief negotiator for the union here, is, as you know, Nick Sanders. I have negotiated with him many times before, and I have his confidence. I recommend that we ask the union to go along with us on a standard form USW contract, and that this, together with a joint request for a 15% increase in the wage level, be submitted to the WLB for approval. This contract would run for one year, but be subject to re-opening on specific provisions within 90 days. This would give us a breathing spell to make a more detailed study as a basis for permanently improving your labor-management relations."

"I'll rely on your judgment. Go ahead."

Harrington quickly worked out this type of agreement with Sanders, and it was soon accepted by union membership ratification, on Sanders'

recommendation. The step was made easier by virtue of the fact that no previous labor agreement existed in the company as a precedent. In the meantime the plant managers had been made keenly aware of the delicate labor situation, and welcomed any suggestions from Harrington. It was agreed to start immediately to re-study all production jobs on the basis of what the average, rather than the most efficient, worker could perform. It was also agreed to review wage rates on the basis of a job evaluation, so that base rates on all jobs would be in proper relation to each other. Then a sound basis would be established for some type of group wage incentive to be negotiated with the union. Finally, it was agreed that there should be a continuous foreman training program in the proper methods of supervision. Mr. Harrington daily commented that he would begin the training program with the plant managers themselves. Nick Sanders was kept informed of these moves and he agreed that they were all sound—with one exception. He doubted that any type of incentive plan would be feasible, at least until considerable experience had been accumulated with the new production standards and base rates.

Toward the end of the summer of 1943, much progress had been made. The plant managers' competent time study staffs had done a thorough, efficient job of re-studying tasks and evaluating jobs. Harrington himself had worked unremittingly on the training of supervision. Morale of employees had improved perceptibly and it was estimated that productivity had increased about 10%. Harrington then turned to the problem of devising a wage incentive plan that would be acceptable to both the company and the union. After a series of informal talks with various company executives and union officials, as well as other intensive

research, he prepared a written report for submission to Mr. Roscoe. In his report he recommended adoption of the Bucker "Share of Production" Plan. In the two months of discussion and negotiation which followed, both the union and the company were interested in the plan, but felt it was too new and untried as yet. Consequently it was shelved, at least temporarily.

Recently the writer was advised by Mr. Harrington that a few months ago Mr. Roscoe had asked him to make an entire new study of the plan. Much of the reason for this request was the considerable publicity which lately had been accorded the plan, especially in the Readers' Digest (September, 1948) and in the New York Herald Tribune (May 23, 1948). Drawing upon the extensive researches of Mr. Harrington, the writer has prepared a brief report on the plan and appended it to this chapter. Much of this information is now available from public sources.

The Rucker "Share of Production" Plan

Introduction

This plan, which is a form of group production incentive, has two outstanding characteristics:

1. simplicity
2. the determination of production workers' income as a fixed percentage of the value added to raw materials by manufacturing.

The plan was developed by Allen W. Rucker, management consultant, after his study of industrial statistics convinced him that the wages workers had been receiving for the last half century represented, in a given industry and in a given company, a constant or fairly constant percentage of the value added to raw materials. The Rucker Plan is not a traditional type.

Description

Its distinctive feature is that it relates wages to "production values" -- defined as that portion of the sales value of finished goods which is created inside the plant. For example, in a motor plant, if the components of a motor could be bought for fifty dollars and the assembled motor sold for two hundred dollars, the "production value" created would be one hundred fifty dollars.

The plan is based on the thesis that, over the years, workers have been consistently getting in wages a fixed percentage of the value they add to processed materials and that in any one company this percentage has remained constant or fairly so. This thesis is the result of studies

of companies' records extending over fifty years. The ratio varies from industry to industry and company to company, but the ratio may be determined in a specific company by a thorough analysis.

When the plan is in effect, the production values for the period are determined at the end of a convenient accounting period, usually monthly or quarterly. Because of increased employee interest in eliminating waste and improving productivity, the employees' share of this production value usually well exceeds the base rate payroll cost of the period. The employees' share of this added value is distributed to them on a pro rata basis, according to their regular wage scales.

For example, the credit for a given period may be 17½% of the base payroll. John Smith's regular pay for the period, including overtime, may be $272.80. His extra share of production earnings is 17½% of $272.80 or $47.47. This "bonus" may be distributed in cash, pension fund equity, or a combination. Part is usually set aside as a reserve to make up deficits when, in any period, the workers might not create enough value to justify the basic wage scale. The reserve fund is liquidated periodically. An actual case best illustrates how the plan works.

During the first 44 weeks that the plan was in operation at the Continental Paper Company, Ridgefield Park, New Jersey, the company furnished $4,800,000 of raw materials, supplies, and repair parts which were made into paperboard with a sales value of $9,625,000. The "production value" was thus $4,825,000, or the difference between the sales price and the price of raw materials, etc. The percentage due the workers had been established from accounting records as 30.61%. Their share was thus

$1,470,000. Of this, $1,190,000 had been paid in regular weekly wages. That left a credit of $280,000, i.e., 23% of the base payroll. This was distributed as follows: One-fourth went to the reserve fund; of the remaining three-fourths, half was used to increase the employee's equity in pension and insurance benefits, and half was distributed in cash every four weeks among all hourly workers in proportion to regular earnings.

A feature of the plan, as indicated by the experience of various companies, is that it tends to increase net profit faster than production values due to:

1. encouragement of cash savings in materials and supplies
2. added income from increased salable production
3. reduced overhead cost per unit of production

Overtime is discouraged as it is entirely chargeable to employee payroll cost.

Experience Record of the Plan

The plan was originally developed about ten years ago, and is now in use in five companies:

Continental Paper Company, Ridgefield Park, New Jersey
S. F. Kahady Company, Boston, Massachusetts (makers of surgical instruments)
Bailby-Mason Company, Boston, Massachusetts (pharmaceutical manufacturers)
Wabasso Cotton Company, Ltd., Three Rivers, Quebec
Orangeburg Manufacturing Company, Orangeburg, New Jersey (makers of fibre conduit for electrical equipment)

The following results afford some concept of how the plan has worked in these companies.

Continental Paper Company

In July, 1947 the Continental Paper Company and Local 299 of the United Paper Workers of America (CIO) signed a contract guaranteeing the employees 30.51% of the value added to their products by the manufacturing processes. The plan was accepted by the union in lieu of a wage increase demand of fifteen cents. Under the proposed 15¢ increase, an employee earning $66.45 a week would have been given a raise of $9.73 a week. Under the new plan he added $16.86 in earnings, almost twice what the union asked.

George Cannie, president of Local 299, said, "Besides being profitable, the plan has led to closer understanding and cooperation."

Harry O'Cleppo, Acting Area Director of the United Paper Workers, said, "We are much gratified with the way this plan is working at Continental. We do not regard it as a cure for all labor ills. It is still in the experimental stage but we are happy with results thus far and are hopeful for the future."

A CIO regional director endorsed the plan in these words, "This appears to be the most progressive step in labor-management history. We are satisfied that it is the finest cooperative industrial program ever developed."

Continental's president, W. J. Alford, is also happy about experience with the plan. He said, "It enables the company and the workers to make money with each other, not <u>out</u> of each other. We think it will prove to be the smartest thing our company and its employees ever did."

E. F. Wahady Company

The plan has been in use about ten years at this company. During the first year employees averages 17% of their regular pay in extra earnings. This percentage has run up to 47% of the regular wage.

Tailby-Nason Company

The plan is in its seventh year at this company. Extra earnings paid out during the first year were 2.9% of the regular payroll. Since then they have increased to around 32%.

Wabasso Cotton Company

This company has been operating under the plan for almost five years. Employees averaged approximately 8% extra earnings the first year. The third year their share was 57½%. For the quarter ended April 30, 1948, employees earned an additional 49% of their regular pay, the highest reported up to that time under the Rucker Plan. Mr. Rucker explained that this was partly due to a rise in prices. It illustrates how, under the plan, fluctuations in prices are immediately reflected in employee earnings.

Orangeburg Manufacturing Company

This company adopted the plan April 26, 1948, signing a six-month trial agreement. Mr. Hugh J. Robertson, president, was reported as enthusiastic over the possibilities of the plan.

Possible Advantages of the Plan

1. It provides a continuous incentive for maximum productivity.
2. It is simple, requiring no time studies, piece rates, efficiency ratings, etc. Computation is held to a minimum and is understandable to employees. Continental Paper reports: "In actual operation the plan is extremely simple. It has required no additional personnel or record-keeping."
3. The plan requires, in itself, no change in prevailing wage structure.
4. It automatically adjusts payroll costs to changes in production values, protecting both labor and management.
5. It pays employees fully for added effort and simultaneously increases net profit. This increase in net profit is due to encouragement of savings in materials, income from increased salable production, and reduction of overhead costs per unit of production.
6. It improves cooperation and team work, reduces absenteeism, and gives employees a sense of participation in the progress of the business.
7. If desired, the plan provides some of the financing for an employee retirement fund.
8. The plan removes the friction of periodic wage negotiations by establishing machinery for continuous automatic adjustment. This lays the groundwork for constructive cooperation between management and labor all along the line.

3. Many benefits of scientific management are attainable without a wide application of its entire range of specific techniques.

Possible Disadvantages of the Plan

The Rucker Plan is of the plant-wide type, and the disadvantages inherent in any such plan appear to be applicable to it. These disadvantages may be summarized as follows, as adapted from Dr. John W. Riegel's Essentials of Incentive Compensation:

1. Human nature is such that some individuals will loaf and have to be carried by the more industrious. This tends toward dissatisfaction and bickering among employees.
2. Equal opportunity for increased efficiency is not usually available to all workers because of differences in technical processes.
3. The question of how to compensate indirect, technical, supervisory, and clerical workers for their added work due to increased production further complicates the administration of a plant-wide plan. The Rucker Plan excludes such personnel and so leaves that problem wholly unsolved. Continental Paper has a separate profit-sharing plan for salaried personnel.
4. The lag between effort and reward which is inherent in a plant-wide plan tends to encourage employee dissatisfaction with such a plan. This liability is largely overcome in the Rucker Plan by provision for monthly

payments to employees.

5. The fact that poor production by some groups offsets extra effort by others accentuates employee dissatisfaction with a plant-wide incentive plan.

Applicability of Plan to Roscoe Company

A plan that stabilizes payroll cost in terms of productivity in a way which has already been accepted by one CIO union could be of value to Roscoe industrial relations. Moreover, the adaptability of the plan to pension financing is of timely interest (present union demands throughout the country). Other advantages of the plan also appear to be applicable to the Roscoe Company:

1. Continuous incentive for maximum productivity
2. Simplicity.
3. No change in prevailing wage structure required.
4. Net profit increase as well as increase in employee earnings.
5. Self-discipline resulting from enlistment of employees' interest in promoting efficiency and salable production.
6. Removal of friction of periodic wage negotiations, thereby laying the groundwork for constructive labor-management cooperation all along the line.

On the other hand, the disadvantages naturally inherent in a plant-wide incentive would be magnified with the growth in size and variety of production activities of the Roscoe Company. However, this development could be offset by a program of decentralization, in which

event the plan could be installed gradually, unit by unit.

A basic consideration is whether a sound ratio for distribution of "production values" could be determined. This would depend primarily upon accounting records, and a first examination of past records indicates that they would prove adequate for this purpose.

Another major consideration is that the Company is now committed to a policy of strengthening the management function of its foremen, which began with an intensive supervisory training program in 1943. General experience with incentive plans (especially broad group or plant-wide) indicates that they tend to transfer some of the managerial responsibility for production and discipline to the worker. Moreover, incentive plans often tend to "cover up" for poor supervision and to become less valuable as the quality of supervision improves. In these respects, the adoption of an incentive plan for production employees might seem inconsistent with the present Roscoe policy of encouraging good supervision and enlightened personnel policies among foremen. However, it is quite likely that this objection could be met by the eventual adoption of a special financial incentive for supervision.

Still another consideration is the question of the effects of a depression. Most incentive plans now in operation, including the Rucker Plan, have been installed since the depression of the 1930's, so that experience with them under depression conditions is not conclusive. It appears likely that workers would resent incentive plans under such conditions because of the incompatibility of such plans with "share the work" philosophy. Workers might tend to feel that increased production by one keeps another out of a job. The curtailed volume of work available

also might tend to reduce enthusiasm for incentives for fear of working oneself out of a job. Improved human relations would tend to mitigate this situation in the individual company, but the situation is much bigger than the individual company, and requires the application of sound public policy to truly insure the worker's feeling of security.

Perhaps the acceptance of the Rucker Plan by another CIO union would improve its chances of acceptance by the Roscoe union--but that is questionable, and union attitude is still a factor to consider in weighing the suitability of the plan for the Roscoe Company.

The Rucker "Share of Production" Plan is not to be confused with the Bundy "Cost Savings Sharing" Plan. Both establish a fixed percentage of company income as labor's share, but the bases of determining and distributing this share differ.

Similarities

1. Both are group plant-wide plans.
2. Both establish a fixed percentage of company income as labor's share.
3. Each maintains the existing wage structure unchanged.
4. Both use sales value as a base for determining the bonus.

Differences

1. Determination of labor's share

   The Rucker Plan determines a fixed percentage of "production value" (value created by manufacture, i.e., sales

value minus cost of materials and supplies) by analyzing past cost history of the company. This affords an incentive to workers to utilize materials and supplies fully.

The Bundy Plan uses a percentage of the sales value of the product. The percentage was determined by an analysis of labor cost for the specific 16-week period of October 1, 1945 to January 22, 1946. It assures, presumably because of the nature of the operation, that the ratio of the cost of the materials and supplies to sales value remains constant. This does not give the worker an incentive to conserve materials.

2. Basis of bonus

In the Rucker Plan the worker's share is distributed proportionately to the employee's base rate. In the Bundy Plan all eligible employees share equally on the basis of hours worked.

In the Rucker Plan a reserve fund is maintained to protect the company from "below-base-rate" production. In the Bundy Plan the bonus, if any, is split 50-50 between the employees and the company.

3. Frequency of payment

In the Rucker Plan, distribution of the bonus is effected monthly, while in the Bundy Plan it is quarterly.

CHAPTER IV

OUTLINE FOR OVERALL ANALYSIS OF A COMPANY

Viewing scientific management from the standpoint of analysing a particular business situation, the writer has prepared from his voluminous notes, collected over the years, what he believes to be the most comprehensive, yet pointed, outline he has seen for the overall analysis of a company. He believes it might prove useful as a "control", so to speak, in considering a company where an all-round check-up might be advisable.

The major points to be covered in making this all-round check-up are:

Cause and nature of present problems

Outlook for company

Policies

Organization

Personnel

Facilities

Methods and procedures

Financial condition and operations

Financial requirements

Each of the above points will be considered in more detail. It is obvious that such an outline as this will need to be applied with judgment to concrete cases. Here especially "a little learning is a dangerous thing". The investigator should exercise his ingenuity in devising adaptations to meet special conditions.

A. Cause and Nature of Present Problems

1. Here it is desirable to present a chronological summary of the history of the company, emphasizing developments of the last ten years.

2. Summarize in outline form the major problems with which the company is faced at time of investigation.

3. Summarize in outline form the reasons for these problems. The reasons usually will fall under one or another of the following:

    a) business conditions
    b) competitive conditions in the industry
    c) improper management

In some cases, reasons for problems stated are implicit in the company history, and it may be unnecessary to seek any further for reasons.

B. Outlook for Company

1. To determine the outlook for a company, it is usually necessary to give consideration to the outlook for the industry in which the company is engaged. This will ordinarily require a consideration of the following.

    a) effect of present and future business conditions on the industry
    b) effect of competitive products on the industry. (For example, the possible effect of conditions in the limestone industry on conditions in the terra cotta industry.)
    c) competitive conditions within the industry.

Sometimes it is also necessary to consider the conditions in the industry or industries which are the customers for the industry of which the firm is a part. For example, in considering a company in the fert-

iliser industry, it is necessary to consider first the outlook for the agricultural industry, since this will determine to a large degree the outlook for the fertilizer industry.

2. Place of firm in industry. This involves a consideration of the comparative position of the firm being studied, first with the industry as a whole, then with its major competitors. In examining this question, it is important that the standing of the firm with the trade be ascertained as fully as possible. If time permits, it is desirable that a market study be made to ascertain the attitude of the trade.

3. Efficiency of the management, as measured by an appraisal of company policies, organization and personnel.

4. Present financial condition as shown by an analysis of the balance sheet, also the income and expense statements. In addition, financial possibilities and requirements as shown by operating and financial budgets.

5. Summarize the favorable and unfavorable factors which may affect the future of the firm, and draw conclusions. In many cases it will be necessary to make certain assumptions as a basis for predicting the future. Caution should be exercised in drawing conclusions on the basis of assumptions.

C. Policies

1. Sales policies should be studied in respect to number and types of products, types of customers, channels of distribution, pricing, sales appeal, and sales promotion.

2. Production policies should be considered from the following standpoints:

a) what to produce, such as determination of the merits of making or buying finished products and piece parts,
b) quality required to meet the demands of the market that is sought,
c) maintenance of proper control of production, so as to secure products which comply with the standards of quality established,
d) when and in what quantity to produce, or the coordination of sales and production, which involves a consideration of seasonal requirements, economic production units, and economic production flow,
e) standards of efficiency, i.e., establishment of definite standards for judging efficiency, and program for establishment and maintenance of these standards,
f) coordination of production costs with sales price, which means first, the effect of volume on production costs, taking into consideration the importance of fixed and variable expenses; second, the relation of sales price to sales volume, and consequently, production volume.

3. Purchasing policies should be examined for:

a) determination of the amount to be bought, which involves requirements of the operation program, and merchandising versus the speculative point of view,
b) standards of quality,
c) selection of vendors; this involves a consideration of the advantages and disadvantages of buying from a few or several vendors, also the factors which should be weighed in the selection of vendors,
d) price determination; significance of price as a factor in selecting merchandise and the extent to which policies may be adjusted to secure lower prices,
e) control and liquidation of inventories; coordination of the activities of the purchasing and operating departments with the requirements of the financial department.

4. Financial policies should be examined from the following standpoints:

a) determination of financial requirements and coordination of financial activities with all other operating activities of the business,

b) sources from which capital is or can be obtained, in satisfaction of requirements,
c) control of the use of capital after it is secured, with reference to accounts receivable (including credit and collection policies), inventories, fixed assets, and other assets,
d) protection of capital, principally policies in respect to insurance,
e) distribution of capital, especially dividend policies.

5. Personnel policies should be considered with respect to:

a) analysis of requirements of jobs and standards for selecting men to fill these requirements,
b) training of personnel,
c) compensation of personnel (wages and incentives),
d) welfare activities,
e) communications between management and employees.

D. Organization

1. Composition and functions of board of directors.

2. Committees of the board: their names, composition, and functions.

3. Chief executive: his responsibilities, efficiency of performance, and relationship to subordinates.

4. Classification of activities under chief executive:

a) are these classified in the proper manner?
b) are all necessary functions recognised?
c) has proper judgment been exercised in determining the extent to which control and performance of activities should be centralised?

5. Appraise the organization by means of accepted standards such as the following:

a) is sufficient responsibility delegated?
b) do authority and responsibility go hand-in-hand?
c) are responsibilities carefully defined?
d) is distinction between line and functional authority clearly established?

e) is proper provision made for the performance of staff activities?
f) do only a few subordinates report to each executive?
g) are the activities of the various functional departments properly coordinated?
h) has the personnel been taught to think properly about organisation problems?

6. Consideration of the efficiency of the organisation plan of each of the major departments, must give attention to the direction and supervision of each of the following activities:

a) sales
b) production
c) purchasing
d) financial
e) personnel

E. Personnel

1. Appraise all major executive personnel and their immediate subordinates.

2. Such an appraisal requires that:

a) proper standards be established for judging the personnel,
b) proper methods be used for applying these standards,
c) the investigator be fair, courageous, and frank.

3. Standards for judging executive personnel:

a) analytical mind,
b) logical mind,
c) sufficient knowledge for the position held,
d) progressiveness and open-mindedness so that help will be sought and used,
e) directing and supervising ability.

4. These standards may be applied in judging executives, by the following means:

a) interviews,
b) observation of executive at work, especially in his dealings with subordinates and as a member of conferences,
c) study of the results obtained by executives,
d) determination of the attitude of subordinates toward executives.

5. Specific recommendations should be made as to which executive personnel should be discharged, promoted, transferred, and new personnel needed.

F. Facilities

1. In this outline of a general survey, production facilities are treated from the operating rather than the financial point of view:

a) efficiency of plant location from a manufacturing standpoint,
b) suitability of the production facilities for the purposes of the company, with particular attention to whether the plant is so designed that economical operations are possible, and that equipment is modern and in satisfactory condition to operate efficiently.
c) is layout of equipment in plant such as to provide for the most efficient flow of processing operations?
d) is capacity of plant and equipment so large that excessive costs result from expenditures on idle capacity, or is there a lack of equipment for performance of some operations?
e) where necessary appraise the efficiency of auxiliary equipment such as trucks, autos, or equipment used in the process of distribution--such as refrigeration facilities in a packing company.

G. Methods

1. Existing budget procedure should be appraised, and a program for the future use of budgets should be outlined as completely as conditions permit.

2. Carefully study the operating methods of the sales, production, purchasing, finance, and personnel activities, and make recommendations for the improvement of these methods, e. g.:

a) purchase orders and invoices,
b) sales orders and invoices,
c) production orders and operations,
d) cash receipts and disbursements.

3. Examine the extent and dependability of control methods, i.e., accounting, statistics, and standards.

H. Financial Condition and Operations

1. Obtain a balance sheet as of latest date possible which analyses assets and liabilities sufficiently to bring to attention all significant items. For example, if any officers of the company owe it money, the amount of their obligations should be shown as a separate item. If the inventory is composed of some obsolete materials, this should be set up as a separate item on the balance sheet. The objective should be to bring to attention all items on which specific action should be taken.

2. Show trend in financial condition by presenting comparative balance sheets for a period of three or more years, and arrange in form so that significant items are readily noticeable.

3. Analyse balance sheet in respect to each asset and liability item, giving particular attention to receivables, inventories,

current liabilities or fixed liabilities maturing in near future, and contingent liabilities.

4. If analysis indicates a need for adjustments, prepare an adjusted balance sheet and compare with original balance sheet to gage net effect of adjustments.

5. Obtain a comparison of working capital for a period of three or more years and seek explanations for any significant changes.

6. Obtain a statement of source and application of funds for as long a period as it seems feasible and desirable, and note relationships between data in this statement and working capital information previously obtained.

7. Draw a summary of conclusions in respect to the present financial condition of the firm.

8. Obtain a statement of income and expense for the last year or for the period since the end of the last fiscal year, if this is sufficiently long to be of value.

9. Draw comparative statements of income and expense for the past three or more years.

10. Analyze major items of income and expense and note trends which seem to be significant. Determine reasons for favorable and unfavorable trends indicated by these comparative statements.

11. If helpful prepare analysis of income and expense by means of supplementary statements. For example, it might be necessary to prepare a detailed analysis of sales in order

to reveal the reasons for important trends in sales volume. It might also be necessary to prepare an analysis of manufacturing costs in order to show the reasons for trends in these costs.

12. Summarise conclusions with reference to operating results of the firm, arranging facts in a logical order of importance.

I. Financial Requirements

1. Prepare a forecast of future operations by means of budgets which will provide the following:

   a) estimated income and expense by months for one year,
   b) estimates of cash receipts and disbursements by months for one year,
   c) estimated balance sheet for six months and twelve months in the future.

2. In preparing these budgets carefully consider the following:

   a) sales possibilities in terms of conclusions arrived at in preceding sections of this outline, with reference to outlook for company, sales policy, and sales organisation,
   b) analyse all expenses in terms of proposed sales program and seek as substantial reductions as possible,
   c) relation of volume to unit costs and, hence, to sales prices.

3. Compare estimated income and expenses with history of income and expenses for three or more years; note important trends indicated by this comparison.

4. Information secured as a result of these budgets should be summarised to show the following:

   a) whether the firm can be placed on a profitable basis,

b) if it cannot be placed on a profitable basis immediately, whether it can be placed on a basis where it can operate without additional cash,
c) if additional cash is required, the probable amount necessary, and whether it is believed future operations will justify the expenditure of these funds,
d) whether future operations of the company will increase or decrease the assets of the firm,
e) if these operations will decrease the assets, determine whether there are compensating advantages to the firm which will offset the disadvantages of this decrease.

"CHECK-LIST" QUESTIONS FOR ANALYSIS OF A COMPANY

As a follow-up to Chapter IV, perhaps it might be helpful to touch upon the "question approach" as a valuable tool in analysing a company situation. The preparation of an exhaustive check-list of questions to be answered for the investigator by the company during a survey is a stimulant to thinking and a protection against the danger of overlooking important aspects of an investigation. The following is not intended to be a complete list of questions, but only as illustrative of the value of the "question approach":

A. General Questions

1. What are the company's products? Catalogues?
2. Through what channels are the products sold?
3. How many employees, male and female separately? What mental types?
4. Approximate percentage of skilled, average, and unskilled employees?
5. How many shifts?
6. Is there a union? Which? Number and type of shop stewards?
7. Are there union difficulties? What are they?
8. Is there someone in the union in whom you have confidence? Who?
9. Do you have a single or rate-range shop?
10. How are your base wages arrived at? Do you have an incentive

plan in any part of the plant? Which parts and what type of incentive? How did you arrive at the amount of incentive to be paid? If by time study, did you employ micro-motion study or visual motion study?

11. Do you have an organisation chart? How old?

12. Do you have SPI's (Standard Practice Instructions) for plant and office jobs?

13. Who has done any work of a consulting nature for your company in the past? What results?

14. What work along this line are you already doing yourself? What facilities do you now possess to do work of this type?

B. Cost Accounting Questions

1. Can you determine without analysis the exact cost of any individual operation?

2. Can you determine without analysis the exact cost of a group of operations up to any point in the processing?

3. Are you satisfied with your method of burden distribution? Are you sure it is distributed properly to obtain accurate operation costs? What cost formula do you use for burden distribution?

4. How are you sure that your costs actually are accurate?

5. What is the machine-hour rate for your machinery and equipment?

6. What is your percentage of machine-hour utilisation? How do you determine this?

7. What has been the percentage of increase in man-hour utilization for the past two years?

8. Are you obtaining production in proportion to your present evaluated or agreed base wages?

C. Job Evaluation Questions

1. Do you have job evaluation?

2. Do you establish the relative value of each job as compared with every other job in the plant?

3. Do you equitably distribute gross payroll so that jobs which create the most profit for management will be paid in proportion to their worth and value?

4. Would it benefit you or strengthen your position with the union or put you in a strong bargaining position if you knew the correct worth of all jobs and if all inconsistencies and inequalities were completely eliminated?

5. Would job evaluation assist you in employing men?

6. Do you set your standard costs for labor on the evaluated worth of jobs?

D. Material Control Questions

1. Are all materials to be processed or to be used in the process centrally stored?

2. Do you have one storeskeeper in complete charge with full responsibility?

3. Who may take materials out of stores?

4. How and by whom are materials for the various processing departments withdrawn and delivered?

5. Is it necessary at all times to have a requisition for withdrawals from stores? Who makes out the requisitions for materials for the various processing departments?

6. Who may either purchase materials or requisition a purchase order for materials?

7. Are perpetual inventory cards or ledger sheets kept for each item of materials?

8. Do you take periodic physical inventories?

9. What system of costing materials is used?

10. Do you use bin cards for stores?

11. What is the exact cost of storing and handling materials?

12. Have you ascertained maximum and minimum quantities to have on hand?

E. Production Control Questions

1. Do you have a special (job) order shop or do you manufacture for stock?

2. Upon receipt of a sales order would it be possible for you to immediately write the customer's invoice? If so, do you follow this procedure?

3. Do you have a production control system which consists of preplanning at a central point?

CHAPTER VI

NEWSPAPER RADIO, INC.: A CASE STUDY

A case study illustrating the application of the outlines set forth in Chapters IV and V would be most illuminating, but is properly the subject of a separate thesis. The primary objective in presenting the outlines in this thesis is to identify some of the techniques of approach to problems utilized by scientific management. Nevertheless, it is within the scope of the present thesis to select one aspect of the outline in Chapter IV and illustrate its application. With this in mind "Section X Personnel", has been selected for this purpose. Such a selection thus can be made to fit in with the author's general human relations theme. The facts of the case are substantially true as related, but all names are fictitious.

Newspaper Radio, Inc. was organized by J. T. Pearce in 1925 for the purpose of receiving and transmitting international news for the American press. Pearce was a man possessed of contradictory characteristics. A number of his associates in retrospect have mentioned the following as being particularly descriptive of his nature:

promotional imagination and initiative
tenacity of purpose
enthusiasm
unbounded self-confidence bordering on vanity
broad technical knowledge of communications problems
unwillingness to delegate authority
poor judge of men
tacklessness
unsystematic planner

"J. T.", as he was called by his immediate associates, achieved remarkable success with this odd assortment of characteristics during the first fifteen years of his company's existence. Within five years following organization of the enterprise, he had reduced news traffic rates to all comers from twenty cents to five cents a word. Then came World War II.

In 1941 J. T. Pearce functioned as president, general manager, and board chairman of Newspaper Radio. His personality dominated the entire organization of three hundred employees. Four of his immediate subordinates were corporate officers and members of a board of directors of nine members. Thus the president in effect controlled the board. The stockholders, comprised entirely of large newspapers and press associations, had been accustomed to allowing Mr. Pearce his own way in running the company.

"J. T." liked to think of his employees as one "big happy family", of which he was the "kindly father". He consistently maintained what he termed an "open door policy" toward all employees, i.e., he encouraged them to bring all their problems to him for advice and aid in solution. He made frequent trips to the company's various bases of operation and talked with individual employees at random. He often issued personal orders on the spot to make an employee's lot happier immediately, and to impress him with the fact that quick action on personal problems could be obtained from "J.T." whenever necessary. As a result "J.T." had become quite popular with the rank and file of employees. On the other hand, because of his frequent by-passing and over-ruling of his executives, he was not popular with them. They were in the emasculated,

insecure position of having responsibility without authority.

With the advent of World War II Newspaper Radio's labor force began to expand rapidly, and by early 1943 had reached 1500. The company had opened fifteen foreign offices and Mr. Pearce spent much of his time travelling. His subordinates, unaccustomed to functioning without their chief's presence, found it difficult to make wise decisions, and kept in touch with him as best they could by radio. Also, they were often faced with disciplinary problems from older employees who insisted on waiting until "J.T." returned from a trip, so that they could discuss grievances directly with him.

About the middle of 1944 Newspaper Radio was requested by the United States Army Signal Corps to manufacture a considerable line of equipment for use in Army field operations. The Signal Corps was desirous that deliveries begin within four months. At the time Mr. Pearce received the request he was preparing to leave on an urgent trip to the European Theater of Operations for a series of conferences with high-ranking Army public relations officers. He hastily wired his acceptance to Washington, instructed his subordinates to start the new project and push it as fast as possible, and left by plane for Europe. He expected to be away about a month, but the terrific multiplication of communications problems following "D-day" made it impossible for him to return until three months had elapsed. During this period regular communication with his company headquarters was impossible due to war restrictions. Whenever the opportunity afforded he consistently ordered his executives to push the Signal Corps order at all costs.

Upon returning he found Newspaper Radio in critical financial condition. Large amounts of cash had been spent for materials and additional labor in connection with the Signal Corps contract. The manufacturing operations for this equipment, due to his executives' lack of familiarity with such work, had not proceeded beyond the initial stages. The company's bank balance had dropped to a point where there were not sufficient funds to cover the next payroll.

With characteristic self-confidence, Mr. Pearce summoned an emergency meeting of the company's board of directors. He advised them of the situation and demanded that they authorize him to borrow $750,000 to carry the company through its financial crisis. The board approved by a five to four majority, all the non-employee members dissenting. After the bank's representative had examined the company's books, the loan was refused. The president immediately called an emergency meeting of stockholders and demanded that they advance sufficient money for the company to stay in business. He stated that unless they provided additional funds he would be forced to submit his resignation. Much to his surprise and mortification the stockholders voted to accept his resignation. The remaining corporate officers resigned from the board immediately to make way for further stockholder action.

The stockholders advanced sufficient cash for approximately one month's operations, and authorized a new board of directors, comprised entirely of stockholders, to engage a competent management consultant to rescue the business. Within three days following J. T. Pearce's forced resignation, Cyrus Norwood, a well-known consultant, took charge.

Mr. Norwood's first move was a trip to Washington for a conference with the Army's Chief Signal Officer. He prevailed upon the General to loan Newspaper Radio Colonel Clark, a Signal Corps officer with considerable industrial experience, to assume direction of the manufacturing project. His second move was to call a staff meeting of the company's two vice-presidents, the secretary, and the treasurer. They assured him that they would be only too glad to cooperate with him in whatever measures he decided to take, but they offered no specific suggestions. After the staff meeting the consultant had a long interview with each officer separately.

Then he talked at length with a number of subordinates who currently had been reporting to each of the officers. On the whole these subordinates were sharply critical and reflected a low morale. Following this he spent two full days studying the report and record files maintained by each of the officers. He found them sketchy, replete with recommendations based on insufficient facts, and generally inferior. There was also considerable evidence in the records that pointed toward a tendency to "pass the buck". Mr. Norwood then was convinced that none of the officers was top management calibre. His reasons could be summarized as follows:

1. insufficient analytical ability
2. insufficient knowledge for the job
3. failure to obtain help from available sources
4. poor directing and supervising ability.

Within three weeks, through the efforts of Colonel Clark, a large quantity of equipment had been manufactured and shipped to the European

Theater of Operations, and sufficient funds had been received on account from Washington to carry the company's running expenses for another sixty days. In the meantime, after several frank conferences between Mr. Norwood and the four company officers, the latter volunteered their resignations as top executives and asked for transfer to any type of foreign service that might be available. Mr. Norwood told them he would consider it a favor if they would remain in their present positions for several weeks until he had an opportunity to replace them. He stated this would also afford him time to investigate the foreign service possibilities. Somewhat mollified, they readily consented.

Within another week Mr. Norwood had secured the services of an experienced divisional operations' manager from a competitor and a rate expert from the Federal Communications Commission. A little later, when the Signal Corps substantially increased its equipment orders, Mr. Norwood was successful in having Colonel Clark (with his own consent, of course) put on the inactive reserve list so that he could be appointed head of the company's manufacturing division. Only two positions were found available in the Newspaper Radio foreign service. Transfers accordingly were effected for the two vice-president, but Mr. Norwood was able to place the secretary and treasurer overseas with the United States Office of War Information.

At the December, 1944 meeting of the company's board of directors, they offered him the presidency of Newspaper Radio. He agreed to serve in this capacity until the reorganization was completed and a suitable incumbent could be found to serve in this capacity on a permanent basis.

CHAPTER VII

THE HUMAN ELEMENT IN ORGANIZATION

What is generally thought of when the phrase "to organize" is mentioned?

The immediate reaction of many persons is to become as technical and involved as possible, so that they may be considered "scientific". They might well declare that to organize means to design a machine with people as components which can produce certain expected results--complete as to parts, controls, and actuating mechanisms. Then various "sage experts" might advance divers ways of going about this design work:

"Design from the top down."

"Design from the bottom up."

"Design for the job to be done."

"Avoid personalities, but adjust to them if you can't avoid it."

"Make this a practical plan--none of that 'scientific' stuff."

"Get a few 'high-priced' men--let them dominate the scene and get all the work done with the help of a few stooges."

Actually, designers of equally good organizations can go about the job in different ways. Any technique that will produce the desired results is worth using, regardless of its so-called "technical" merits. We organize for the purpose of achieving coordinated effort. It may be said that understanding by the participants in an organization plan is more important than the excellence of its design.

The very essence of scientific management is the rule of law, which must replace unsupported individual opinion, "rule-of-thumb", guess, or ignorance. Observance of the rule of law means a mental revolution on the part of both management and workers, bringing to

light the indisputable fact that management and labor have more in common than in conflict. Scientific management is a social force, not a transferable, mechanistic scheme of managing. It is a universal method of approach to discovering and establishing the particular management policy and methods most suitable for a particular situation.[8]

Even in some supposedly well-managed companies one often hears imposing manuals of procedure or books of detailed organization charts fondly--or contemptuously--referred to as "bibles". This very well can be a dangerous misuse of the holyword. The contents of these so-called "bibles" quite frequently are kept in blind use even though obsolete, or are permitted to multiply promiscuously into a maze of incomprehensible, uncorrelated complication. No doubt the well-meaning originators of such books would stoutly maintain that they are operating their businesses through the use of tested knowledge instead of guesswork. Perhaps they did start that way.

The story is told of one company which followed to its logical extreme the Frederick W. Taylor precept of getting all operating facts out of the realm of guesswork and memory. This company, after years of effort, accumulated volume upon volume of standing orders, covering every operating situation and procedure. For example, a standing order was set up for shipping clerks prescribing the exact number of nails to be used in closing the top of a packing box. After this company was reorganized, this entire accumulation of standing orders was discarded without noticeable loss of efficiency and with considerable saving in cost of compilation.[9]

It must be remembered that scientific management requires continuous research, for it is the paradox of the scientific method that it no sooner succeeds in solving a problem than it opens up new ones. It is a challenge to management to keep abreast of progress. A frequent review or "audit" of the entire management situation and its methods is highly desirable.

James O. McKinney, a famous management consultant twenty years ago, had a definite approach in analyzing every business problem. This approach consisted of five fundamental, searching questions, which are here paraphrased as questions that management might well ask itself from time to time:

1. What is our objective--that is, what are we trying to accomplish? (N.B.--In answering this question, we may find ourselves hanging on to something that should not even exist.)
2. What people are available to do the accomplishing--that is, what is our situation with respect to personnel?
3. How do these people fit into the total operation and what are their duties--that is, what is our organization chart now?
4. What are the nature and the general specifications of the physical plant in which the operation is executed?
5. What financial resources are available?

It is evident immediately that Mr. McKinsey gave prior consideration to the human element in organization.

An organization is established to accomplish valuable and reasonable objectives which can and should be clearly defined. These objectives

can be attained by the performance of activities which can in turn be clearly defined and so allocated that there is a minimum of duplication of effort. Responsibility for the performance of these activities should be explicitly delegated to positions and coupled with corresponding authority. By "delegating" is meant the assigning of activities to the management of another. The delegator has the authority to instruct and control the position to which he has delegated certain responsibilities. Decisions, based on precedent, should be made by positions most closely associated with the problems under consideration. Decisions involving normal cases or problems should be made on a lower level than decisions involving exceptional cases, or cases that require policy determination or particular tact and judgment.

A hypothetical case in point might be that of a general foreman's clerk who was paid on a straight salary basis. Assuming that there has been a death in the clerk's immediate family, he asked his boss for two days off with pay to attend the funeral and wind up the personal affairs of the deceased. The general foreman immediately approved the time off on his own authority alone. This he did because there was an established company policy permitting any salaried employee not more than three days off with pay when a death had occurred in the employee's immediate family, and the employee had requested the time off. According to the company policy approval was necessary only by an employee's immediate superior. Thus the decision was made by the position most closely associated with the problem under consideration.

Suppose the same general foreman's clerk asked for six weeks off without pay to take a special university summer curriculum in factory

management. In this instance the general foreman was authorised to grant leaves without pay up to a maximum of three weeks. He therefore consulted his immediate superior, the production superintendent, who had the power to authorize leaves without pay up to a maximum of three months. Upon reviewing the case carefully, he concluded that, since the company would also benefit from the clerk's course of study after the clerk's return to work, there might be some justification for partial salary payment to the clerk during his absence. The superintendent carried the matter to his own superior, the vice-president of manufacturing, for further consideration. This company officer decided to pay the clerk's tuition at the inception of his leave, and, if he earned an average grade of "B" or better in his studies, to pay him the full six weeks' salary on his return to work. Since this case developed into an exceptional one, it was necessary to carry it high in the management hierarchy for final decision.

The number of positions reporting directly to a supervisor should decrease as the level of the supervisory position rises. It has been pointed out by several management experts that a senior officer or supervisor should have no more than five or six individuals reporting directly to him.[9] It cannot be proved readily one way or another that five or six individuals should be the maximum number. The higher the level of the supervisory position the more complex the problems of policy and the establishment of precedent become, and the more time is needed to properly handle these problems. Therefore, high level positions should not be hampered by problems of supervision and common problems of coordination of activities that could be more effectively and efficiently handled by subordinate supervisors.

Increased complexity in an organization due to increased volume, change of product, or change of process, increases the need for specialisation within a line or staff department. However, it may be that an analysis of an organization from a management engineering standpoint would indicate that greater efficiency lay in simplifying procedures than in expanding the size of the organization to compensate for increased complexity.

Standard controls should be established to direct the attention of supervisors to matters of most importance. A supervisor is vitally interested in the degree to which he is attaining the objectives of his position. Control reports should be so designed that they will reflect this degree of attainment. Any supervisor whose work or product is being held to specific predetermined standards should be given the assistance and facilities necessary to enable him to meet this standard.

Inter-department cooperation between positions on the same level of responsibility but not related by organisational lines is necessary for the efficient functioning of an organization. This is, however, an informal relationship that will not be found on the conventional organization chart. In closely allied departments, inter-department cooperation between positions on different levels of responsibility may be necessary to expedite production.

Valuable cross-fertilization can be achieved through a wisely planned means of inter-department cooperation. One important tool in this connection is the conference, especially when the method of determinate discussion[10] is utilized under the direction of a trained conference leader. Originally these conferences were set up strictly along departmental or

divisional lines and stratified as to levels of management, but since World War II there has been a tendency toward the creation of conference groups comprised of persons selected from widely scattered points and levels throughout an organization. Where this unprecedented development has been preceded by sound management policies and basic supervisory training of the orthodox type, success has been outstanding. In most cases esprit de corps and understanding have showed significant improvement. It seems to the writer that here is assistance in overcoming the curse of specialization that attaches itself to most middle management men who are promoted to the ranks of top management.

There is an urgent need for the training of more "generalists" in the field of management—men skilled in the relation of specialized techniques and knowledge to the total situation, man who recognize in their planning and operating that when physical or phychological forces are either created or changed in any one area, there will be reverberations throughout the entire universe of which this area is a part. They must eternally be aware of their responsibility in creating the whole environment within which individual persons gain their experience, utilize their special skills—and most important of all, develop their personalities. Thus consideration shifts from mere individual efficiency toward total effectiveness.[11]

It has been the writer's experience that many managements either fail to understand or they ridicule the importance of psychological forces. Two cases come to mind that illustrate this point.

Wilson was Kirk's predecessor as personnel director of the Wire Manufacturing Company, and had been fired. His boss (the president,

also fired) had several years prior to this consummated what he deemed to be a neat piece of strategy by giving the job of personnel director to the local union president. The "old man" figured this master move would cement relations between labor and management. Wilson, being popular but immature, decided the proper thing to do was turn completely against the union, and be "management minded". Soon his popularity evaporated, and an imposing agenda of grievances accumulated to an extent that a strike was imminent. At this point Wilson went out and Kirk came in. Kirk's initial assignment was to clear up the grievances, and, if possible, prevent a strike. The first important discovery Kirk made was that there was no actual substance to ninety percent of the grievances. He further found, to his surprise, that the tools of analysis and logic were required only to a very limited extent in disposing of the grievances. In this situation he learned the real meaning of good human relations. In his effort to reach to the bottom of the "gripes" in a fair, human manner, he interviewed the various aggrieved employees individually, adopted a friendly, interested attitude, and <u>let them talk</u>. If he kept the aggrieved employee talking long enough the grievance seemed to dissipate into thin air.

In the second case Carter was asked, because of his reputation as a methods man, to reorganize the salary payroll department for a large aircraft manufacturing plant. He was told the routines were "in a mess", and that several times the department had almost "passed the payroll", a major disaster in an office of four thousand employees. He studied the routines carefully for a few days and found that, if followed, they were at least workable. Then, rather than refine the routines, he turned to a

study of the employees in the department. With only a little systematic interviewing he discovered that the department was divided into two hostile camps (informal organization). One of the two senior clerks in the department was Italian Roman Catholic and the other was Orange Irish. The bizarre atmosphere of medieval animosity polluting the working environment would have been amusing had it not been tragic. Both these clerks were technically competent, but definitely uncooperative, and continually attempting to "get" something on each other. Carter gradually befriended both antagonists, carefully avoiding the religious issue. Within two months he had helped promote the Orangeman to a better job with another company. This move proved to be the foundational step that led to the eventual straightening out of the department. In this situation Carter found that improved human relations and not improved methods were needed.

Although Frederick Winslow Taylor appreciated the importance of the human element, he chose to devote his life to the improvement of methods and materials, rather than people. It is only now that the human factors in management are being subjected to the searching analysis of science.

CHAPTER VIII

THE IMPORTANCE OF LEADERSHIP

If the writer were asked to name the single element most important to the success of scientific management he would unhesitatingly reply, "Leadership". A leaderless organization, though otherwise excellent, can accomplish nothing worthwhile. On the other hand, an organization with many handicaps, given good leadership, can accomplish much of a constructive nature. In a sense, the indispensability of leadership may be compared with that of charity as used by St. Paul in his famous First Epistle to the Corinthians.

The saying that leaders are born and not made is untrue. Naturally there are born leaders who do the right thing apparently by instinct; but many other persons have qualities which can be developed, with the result that their skill at leading may be appreciably strengthened. Something that should be born in mind in discussing a subject like leadership, which has many sides, is that it is necessary to look at them one at a time. Yet the total view of the whole is the only one that is completely true. John D. Rockefeller once said, "I will pay more for the ability of leadership than I will pay for any other ability in the world."

It is hardly possible to exaggerate how much associated group action there has to be in the modern world. In at least three-quarters of his waking hours every adult lives and moves in a succession of group efforts. We work in groups--corporations, institutions, government bureaus, etc. We play in groups--golf clubs, athletic clubs, bridge clubs, etc. We do civic work in groups--political parties, "service"

clubs, taxpayers associations, etc. We are educated in groups, worship in groups. It is sometimes difficult to realise that this is a relatively new fact; that it brings up one vital problem of how to make group activity a happy and satisfying experience for people. More and more people are coming to recognise that one crucial factor in the solution of this problem is the quality of leadership shown within the groups they join. This is true because:

a) typical organisations today are growing very rapidly into great size.

b) organisations rely on the effective participation of many individuals who are continually joining them with little previous knowledge of what the organisations are striving to do.

c) the larger an organisation gets, the more functionalized it tends to be.

All these factors separate the individual member or worker more and more from any personal connection with the organisation he joins. There is no inspiration, no feeling of solidarity. Not many care for such remote connections.

What actually happens is that in many organisations--both commercial and non-commercial--work is divided departmentally. Each department or division has a directing head. The contact of workers with the organisation as such comes through that head, if it comes at all. Yet the efforts of each individual are expected to fall into place as a related part of the whole large plan of the organization--to follow the purpose of the whole organization. No matter how eager a "joiner" a

person may be, he will never have a feeling of actually belonging to the group unless he has some personal contact with the organisation.

Many have had the somewhat painful experience when they joined a new school, a new club, or a new company, of feeling they did not "know what it's all about", of "not knowing where they fit into the picture". It takes special effort on the part of someone in the organisation to overcome that feeling. That effort toward unifying the desires and efforts of its members is a distinctive task of the leader.

In every organisation the tendency is for both department heads and the rank and file members to see the organisation's problems in terms primarily of their own functional effort. People who work in production departments see production departments as all-important--those who work at selling stress the sales end. The more cut up the organisation becomes the more danger there is of bringing about this specialized interest. Only a competent leader can correct these weaknesses of functionalism and division of labor. Only a real leader can keep the group united to that one aim which alone produces the best results. In other words, organizations require more than administration. They need to be led because the human relations of the leader to the followers are far more normal and personal than the orders of a commander or the routine contacts of an executive.

Merely for people to know what they are supposed to do is not enough. You can have a worth-while objective, you can have a disposition to act fairly for the members of a group--these alone never produce the strongest group cooperation and morale. Someone must make it all appealing. Someone must make the group loyal to the purpose of the

organization. Someone must be able to show people how they are benefited by belonging to that organization. That someone is the leader. Not a commander. Command is an exercise of power over people, while leadership implies the creation and use of power with people.

A corporation that always acted literally on the statement that "we're not in business for our health, we're here to make money" would obviously make many short-sighted decisions. A golf club that was run just to make it possible to play golf would lose members. For they want other values such as care in the selection of members, a good clubhouse (bar, etc.), lessons from the pro, dances, etc. In other words, appeal. Morale rarely appears without a good leader.

The commander, because he has the power, puts the welfare of the organization ahead of the welfare of its members. The leader, because he knows human nature, will strive to make the welfare of the organization and of its members one and the same thing. For he will appreciate that organizations are always a means to an end, agencies to help achieve what people want. Every directing post over people should be a leadership post.

The sense of achievement and worthwhileness that each person wants can be secured in one of two ways--by solitary creativeness as in the case of an artist or by group collaboration as in the case of most of us. It requires leadership to get the unrelated activity of the individual effort of any group into group unity, group pride and group teamwork. People really hunger to be led and it is the effort to satisfy this desire that puts on each executive the added responsibility of leadership.

Every leader is making the effort to lead a group of people to accomplish something together. The minister of a church, college president, director of a play, factory superintendent, foreman, etc., are a few examples of leaders. There must be some common factor running through these various activities--which makes them different from purely directive or administrative positions. Leadership can be defined as the activity of influencing people to cooperate toward some goal which they come to find desirable.[12] This definition takes into consideration that people want a sense of achievement and worth-whileness. This definition is easy to write, but to be understood fully there are some other factors to be taken into account.

How great a leader one becomes depends upon personal characteristics. The opportunity to lead is furnished by total environment. It is always related to specific situations and needs. Cal Coolidge and Truman became presidents of the United States because they were Vice-presidents at a time when a President in office passed away. The chance to hold this office came to these men through forces outside themselves. Lenin, Mussolini, Hitler, and Gandhi all had careers that are hard to separate from the circumstances of the time and place in which they functioned. These men were, of course, leaders of large affairs, but the same facts are true of a leader in any post, no matter how small. It is the situation, and not the person alone, which allows the leader to function.

Even when he originates an organization of any kind, the leader is able to continue only when enough of his followers are convinced he has something of value to be done. The leader should always realize

that he achieves only as long as he is in a situation where those he leads can achieve. If the situation and opportunity are so important, it is necessary to be clear as to the manner in which elevation to leadership actually takes place.

The leader selected by the group is typical of democratic political organizations, fraternities, etc. This process has the advantage of predisposing those who are led to follow because they believe they can trust the leader and his purposes. The leader is wanted to be the supervisor or agent to carry out (execute) the group purposes. The feeling is that he is"one of the gang", a "regular fellow". This is a tremendous help and makes the leader's main problem one of how the aim is to be achieved. But this type of leader is always being tested. Because as long as the possibility of re-election or re-appointment is present, the right to lead has to be earned continuously.

The third way in which people get the chance to be leaders is the method used in many kinds of organizations--business, institutional, etc.,--where a board of directors or trustees appoint head executives who in turn select the lesser executives. All such leaders are responsible for results obtained by others working under them. And these others have been hired, usually, without any necessary interest in the basic purpose of the organization.

The problems of leaders of this sort is to deal with people whose legal relation to the whole group is, for the most part, one of master and servant, and to deal with them in such a way that this relationship is changed into something approximating a partnership. From a group brought together by somewhat hit or miss methods, this leader

has the hard job of trying to bring about some unity of interest, a morale that implies willing service in a common cause. In other words, he has the job of making followers out of hirelings.

In the first place, all that most people know is that they have a job—and that having a job is the condition of having the means to pay for food and shelter. The leaders problem is to show them that by helping the group they are helping themselves, that by being loyal to the organization they are being loyal to themselves; that what they want to gain is best realized in the efforts they make on behalf of the prosperity of the group. His problem is to make them want what the organization wants. This may not seem like too tough a problem until we look at the objectives of the organization and consider honestly just how the workers are related to them in terms of a share in control and in results. To understand this problem better a leader should know the part his own objectives play in determining how far he can go in influencing others.

The leader is an artist. Instead of using paint as material or wood (as a wood-carver) etc., his material is people. Knowledge of the process of influencing people has increased greatly in recent years. The use of that knowledge by the leader is only a case of applying truths that are in one form or another an everyday occurrence. A description of various methods of influence utilized by leaders follows:

1. Suggestion may be either direct or indirect—it is usually a verbal hint used to build up or maintain the prestige of the leader or to avoid the danger of offending the pride or disturbing the self-confidence of the followers. An example would be giving orders by suggestions,

suggesting possible injury unless a situation is changed or cleared up. Whatever is done to set the leader apart is suggesting his importance--titles, uniforms (e.g., foreman's coat), etc. A leader who joins in group activity with his men is using suggestion to indicate that besides being a leader he is also a "regular fellow", or "one of the boys". A trial balloon type of suggestion could be, "What do you think of these changes?" A polite approach could be, "Sources close to the administration say....."

Imitation is, of course, not an active process for the leader. It is the followers who tend to imitate the leader's mannerisms, or actions, such as the leader taking time off, coming in late, or breaking other rules.

Exhortation is usually an emotional appeal to a group. How valuable it is for permanently influencing others is impossible to state, but it does seem to have value in arousing enthusiasm, for helping various drives (community chest, scrap, waste, absenteeism, etc.) to succeed. This could be used by the foreman in appealing to a group leader or to a whole department.

Persuasion by argument is usually used when it is necessary to influence individual minds to agreement on specific issues. A description of the steps used--consideration of the issues, weighing all the evidence, considering all alternative possibilities, and the disposition to abide by the outcome of careful deliberation--are not within the scope of this thesis. A good leader is tremendously helped by being a clear reasoner and a friendly persuader.

Publicity as a method of influencing people is not a separate process, but a technique for supporting some of the other processes discussed here. It can be done by word of mouth by a foreman or his group leaders or by notices on a department bulletin board, or by other suitable means. It can concern progress of efforts to reduce scrap or costs, for example. There is a difference, however, between publicity and propaganda. The latter gives only part of the facts, or a biased interpretation. Its purpose is usually selfish or narrow. Publicity is an effort to put across ideas or points of view in an honest effort to inform.

There comes a time when every leader has to rely on the logic of events to have his followers become aware of a problem or to be interested in a proposed solution. Even though a leader is able to anticipate trouble, sometimes it is impossible to get more than a few followers to look ahead too. People are inclined to worry about problems only when they cannot be ignored any longer. Most people do not look ahead to borrow trouble. There is an old saying, "Never trouble trouble until trouble troubles you." A real leader can look ahead and anticipate trouble. He has to decide whether he will force attention to the pending problems or if he will wait and let the sequence of events bring awareness of the trouble to his followers. For example, in a given shop, if you can see ahead to increased costs, it might be difficult to get cooperation to reduce costs if the incentive bonus of workers is high. With a low bonus, reduction of costs might be easier.

An indication of devotion of the leader to his followers is a powerful force. Without question some of the most successful instances

of leading have been based on this. Many have heard people say about their boss, supervisor, or president, "I'd do anything for him." How a leader can be the kind of person to bring about this feeling is one of the key points in leadership.

Lastly, creating a typical problem situation in order to learn a lesson from its solution, is nothing more nor less than learning by experience, profiting from mistakes. Sometimes this can be a costly lesson, which is something the leader will have to consider. But sometimes people refuse to learn by any other method. As an example, there is the story of the factory owner who wanted to foster "democracy" among his workers. One method he believed in was to allow each department to elect the foreman, subject only to his own veto in extreme cases. On one occasion he felt that the wrong man was elected, but instead of exercising his veto power in the usual Russian manner, he decided to wait and see what would happen. In a couple of months the men in the department came to him and admitted they had made a mistake and wanted to hold another election. He accepted their request on the condition that the men themselves handle the demotion of the present foreman and be sure no ill-will toward the company would result from returning him to his old job. This example is given, not to justify the owner's action, but only to show how those involved in a situation learned from it.

The leader also is a symbol of the cause he is serving and in this way influences people. This makes a personal appeal to them and demands loyalty. There is one danger in this--loyalty to the person may eventually over-shadow and in some cases entirely eliminate loyalty to the cause.

The leader is doing his job when people are influenced to cooperate toward some goal they come to find desirable. Business groups are an outstanding example of groups where the individuals take part without helping to formulate the group aim or without having the chance to say that they agree with it. They merely agree to come on the payroll. The relationship between employee and management is one of master and servant. A job, for most of them, is necessary for survival.

How will those employees be led who feel that all they can get out of their jobs is the weekly pay envelope? The one great desire of members of business groups is to be retained on the job, i.e., job security.[13] There are other desires that are more positive, such as the desire for personal improvement in and through the working relationship. The goals which people in groups willingly follow and the leaders they will gladly serve must appeal to them in such a way as to enable them to realize some personal gain. There is all the difference in the world between situations where management tells workers what the associated aims are and those where all the workers are given the opportunity to join in creating, or changing them.

What has proved true in religion, armies, and politics is also true in other group effort. People need the leader to help show them and give them the experience which convinces them that their loyalty to the group is a good thing for them. This involves more than a blind trust in the leader--it involves sharing with the leader in deciding what is to be done and how. People can be made to follow if they can be made to see that the direction being taken is good for them. Many a war has been fought by men led to die, believing death better than endur-

ance of conditions thought intolerable.

Leadership is not a matter of hypnotism or salesmanship. It is a matter of leading out from within individuals those motives and efforts they discover to represent themselves most truly. Most people do not know what they really want until someone helps them.

CHAPTER IX

HANDLING PEOPLE

Why do people fail on the job? The author estimates from experience that eighty percent of failures on jobs occur not because the individual does not know his job technically, but because he cannot get along with people. In one large manufacturing plant forty graduate engineer were hired during a calendar year and at the end of the year two were still on the job. The remainder could not get along with their associates. Recently a leading consulting engineer declared, "The importance of the personal and sociological aspects of our behavior as engineers cannot be overemphasized. In a recent analysis of over four thousand cases, it was found that sixty-two percent of the employees discharged were unsatisfactory because of social unadaptability, only thirty-eight percent for technical incompetence."

What is successful handling of people? The supervisor not only must be able to get along with people, he must "handle" them, that is, have them do what he wants them to do—and like it. Successful handling of people is getting others to do what needs to be done and feel right about doing it. To be successful this feeling must be enduring toward the particular supervisor concerned.

There is a way of working so that any situation can be handled in an honest and sincere manner. It can be handled tactfully by giving sufficient thought to preparation, approach, presentation, and discussion. Over a period of time this way of working becomes second nature and it is instinctively used. If this belief is accepted and used, many "fuzzy" situations that previously arose in dealing with people will be eliminated.

The result of this way of working is a sense of freedom, of openness, of being able to deal with superior or subordinate without fear or favor. Although the supervisor will probably make honest mistakes, there will never be that overhanging fear in the back of his mind that some covered-up situation may explode in his face. There is never that uncomfortable feeling arising because of the approach of a person who has been insincerely handled. Consequently a better grade of work results from that sense of freeness and the self-confidence that accompanies it. There is a feeling of being on top of the job instead of having the job on top of the supervisor.

During World War II the Pratt and Whitney Aircraft Division of the United Aircraft Corporation devoted extensive research to the problem of what qualities should be expected of competent supervisors. Not the least valuable tool in the development of their findings was frequent conferences with members of shop supervision known to have particularly successful work performance records. After many months of painstaking effort the following qualities were determined to be applicable:

A. Qualities Primarily Needed in Dealing with People.

1. Integrity

a) honesty
b) sincerity
c) courage
d) trustworthiness

2. Diplomacy

a) tact
b) forcefulness
c) persuasiveness
d) confidence
e) courage
f) personal magnetism
g) energy
h) firmness
i) courteousness

3. Tolerance

a) thoughtfulness
b) patience
d) understanding
d) openmindedness

4. Cooperativeness

a) helpfulness
b) friendliness
c) responsiveness
d) openmindedness
e) sense of responsibility

B. Qualities primarily Needed in Dealing with Things.

1. Initiative

a) resourcefulness
b) imagination
c) desire for efficiency
d) foresight
e) visualization

2. Determination

a) courage
b) patience
c) industriousness

C. Qualities Concerned with both People and Things.

1. Judgment

a) thoroughness
b) accuracy
c) completeness
d) analytical ability
e) loyalty

2. Dependability

a) consistently sound judgment
b) stability
c) faithfulness
d) loyalty (e.g., as indicated through good attendance)

To examine completely each of the foregoing qualities is not the objective of this thesis. It is plainly evident from the outline, however, that the work of those who supervise others is mostly intangible in character. It will be instructive to observe the operation (or lack of operation) of a few of these qualities in actual cases. The first case is a story told by a group leader:

Foreman X approached John Doe, a group leader on "I.D." Grinders, with a lot of twelve gears, and asked him if he wouldn't grind them. John Doe was a new group leader and as a result did not know the ropes too well.

Before attempting to grind them he decided that he had better check them. The first gear that he checked did not have enough stock on the I.D. to clean it. He then checked them all and found that they were all the same. He approached foreman X and told him what condition the gears were in. The foreman's reply was, "Oh, Yes! I forgot to mention that when I brought them over to you. I meant to, but it slipped my mind."

John Doe then asked the foreman if it wouldn't be better to put them on salvage as they were in the roughing stage with only about three operations completed. (Foreman X had charge of the roughing. Grinding came under finishing work, with foreman A as the head of the division.) Foreman X's reply to John Doe's query was that he would take all responsibility for the gears. John Doe distrusted him and decided that he wasn't going to take any chances, so he marked the gears with a punch.

About twelve operations later eleven of these gears came back for grinding after hardening. One was lost. The gears had opened up in the process of hardening plus the insufficient stock in the roughing operation. It was found that they would not clean up now, which was to be the finish grind on the I.D. of this gear. John Doe then approached foreman X and told him that the gears had come back and they wouldn't clean up. Foreman X promptly instructed him to put them on

salvage as they would probably be scrap. John had the necessary paper work made out and brought it to foreman X for signature. The foreman maintained he would not sign the papers as he did not remember making any such statement. John tried to refresh his memory but the effort was obviously wasted. Then, and only as a last resort, he related to the foreman how he had marked each gear with a punch. The foreman still denied it, but with reluctance signed the salvage sheet.

In the meantime foreman X had told someone else about how he had intended to pass this scrap on to the grinding, when he knew all along that it was scrap in the rough stage. This story finally got back to John Doe, and he brought it up one day when he was talking with foreman X. The foreman stoutly replied that no one could blame him for trying, which was of course as good as a confession.

Now for a brief analysis of this case. Did foreman X gain? No. He still had to sign for the gears, he lost prestige with John Doe, and imperiled his job by talking about the matter and confessing it. Should John Doe have reported the whole story to his superior, foreman A? Would such action have served a constructive purpose? It would probably have improved future relationships for the company, for John Doe, and even for foreman X. Should John Doe have referred the situation to his superior for action rather than try to handle it further himself? Yes. Foreman A would be on the same level of authority as foreman X and so be in a position to properly carry the matter to management. Moreover, his own immediate superior is John Doe's first stop in the organization ladder.

What does this case illustrate? The ineffectuality of dishonesty on the job, the resultant lowering of morale, and the boomerang nature of dishonesty and insincerity. The qualities under the caption "integrity" can be linked with this case as follows:

1. Honesty - Foreman X defrauded his company and attempted to trick John Doe.
2. Sincerity - Foreman X was not what he appeared to be.
3. Courage - He certainly lacked the courage to report the scrapped gears in the first place.
4. Trustworthiness - John Doe will never trust Foreman X again.

The following is another example as told by a group leader:

"There was an operator on my line who constantly disrupted the routine of the day. This was due to the fact that this man had very little experience on a lathe--in fact very little machine experience of any sort. He continuously kept getting into trouble by doing things thoughtlessly. For example, he tried to ream a hole first without drilling it. This man was very sincere and cheerful about everything, so it was hard to get rid of him without hurting his feelings. Then it happened one day that the foreman of the next department was looking for help to break in on grinding. This I thought was an opportunity. I first discussed the situation with my foreman. He thoroughly agreed with my plans. I next went to the operator. For several days I tried to interest him in grinding. I told him casually that grinding was interesting and required skill, and quite a change from lathe work in that the tooling was different. I also told him that this was a good chance to acquire varied experience. Finally he agreed to take a chance.

"The man was transferred--temporarily. After a couple of weeks he got the knack of grinding and it proved to be much easier for him than lathe work. He then was transferred permanently. As a result of this arrangement everyone was satisfied and more than anything else the man thought I was a good sport in helping him get a job where he was happier."

This is a clear case. Did the group leader gain by this stroke of diplomacy? He won the good will of the operator, and no doubt raised his stock in the eyes of his foreman. He also increased his own self-respect. Did the operator gain? He gained a job he enjoyed and his self-respect was preserved or even improved. Did the company gain? An unsatisfactory employee became productive. As a matter of fact, no one lost.

If the groups leader had tactlessly secured the man's transfer, what would probably have happened? The operator would definitely have suffered a loss of self-respect and perhaps lost a job completely. The group leader would not have gained the good will and self-satisfaction of a job well done that he actually did achieve. The company would have lost its investment in the employee--the degree depending upon whether or not the employee was good on another job or terminated. It can be said, then, that diplomacy on the job definitely paid dividends in this case.

Another case[14] illustrates the use of the qualities of tolerance and judgment, and is an example of good handling. The executive involved in the case had been an extremely able specialist who dealt

with specialists. He was a perfectionist, and the human element hardly ever entered his thinking. A task could either be done or not done—there was no middle ground. To him all such things were black or white. There was no gray. His employer, who was familiar with the Harvard 13-week Advanced Management Program and its value for the intensive training of key company personnel being groomed for promotion, sent this executive to Harvard. His company sent him because he was due for new responsibility which would bring him in contact with all types of personnel. His superior wanted him to develop the philosophy that people are people, that to err is human, and that he must try and understand why people do the silly things they do. He went through the course, first with skepticism and later with real enthusiasm. Soon after his return to work he was promoted.

In his new department there was a man who suddenly had begun to build up an alarming absentee record. He was always ill. At least once a week his legs would swell up and he would be unable to go to work. The executive had a doctor examine the man, and there was no doubt that he was not well. The executive suspected the man was drinking heavily and that his absences were caused more by hang-overs than by anything else. A year before, he would have fired the man.

However, he recalled the cases he had studied at Harvard and how they stressed the advisability of side-stepping the obvious and really getting to the heart of a problem. Perhaps the man's illness related to something else that could be corrected. The executive made it a point to meet the chronic ailer in a casual way and start talking with him. They chatted about sports, business conditions, people, social

affairs. Finally, the boss came to the point. He told the subordinate frankly that he suspected him of drinking too much.

"No, sir!" the man protested vigorously

"What is it, then?" asked the boss. "Is it money?"

The employee hesitated, then blurted out, "Yes, sir, it is. I've gotten into the hands of some loan sharks and they are driving me crazy. I don't know how I'll ever be able to shake them off."

That was all there was to it. The boss helped the man do a little refinancing, and in a few months he was out of debt. This man has not missed a day from work since. He has been promoted and is completely happy. A doctor explained that this man's nerves had affected a sciatic condition and caused the swellings. If the boss had taken the obvious for granted he would have set the stage for tragedy.

A final case[14] is an example of both bad and good handling and illustrates the operation of a wide range of qualities. The case concerns a serious situation which had developed in a large plant employing several hundred foremen.

It became apparent to the top management that production was decidedly off and had been ever since a veteran superintendent had retired. Breakdowns in equipment were frequent. Layoffs were increasing. Top management sent one of its young executives from the home office into the plant to rectify the situation. He studied the problem and decided it required a strong hand.

Every week he called a meeting of the foremen and caused those who had done badly to be singled out by name. When this did not yield results, he began requiring the errant foreman to stand up in the

meetings with their colleagues and be publicly excoriated. It is obvious what this did to the plant. Every foreman walked around in fear and trembling. Instead of being leaders of their men, they went around coddling them, so that by collusion they could cover up as much as possible. This was hardly what top management had in mind. The situation grew so acute that the wives of the foremen who had been publicly rebuked were forced to take the gibes of other women whose husbands had been more fortunate. Naturally, the women howled.

Finally, in desperation, top management called the "bright young man" back to the home office, and simultaneously called the former superintendent out of retirement. He restored production to former quotas by a very simple device: He went into the plant and watched. Whenever he found some deficiency, he called the foreman aside privately and asked him what was wrong. There was no censure, no threats, no public exposure. He simply asked, "Why?" He kept on asking "Why?" whenever there was a breakdown. What happened? All men having pride, the foremen began running out of excuses to this friendly fellow who mildly kept asking for an explanation. How could they keep giving him the same alibi over and over and justify themselves? Consequently, they went to work and corrected the situation themselves.

CHAPTER X

CONCLUSIONS AND RECOMMENDATIONS

This thesis on the place of human relations in scientific management is selective and suggestive rather than exhaustive and conclusive. In his research the author has drawn upon his experience and contacts to a much greater extent than upon "book" sources. The subject of scientific management possesses almost infinite ramifications, and therein lies a danger. Because of the magnitude of the subject, writers have either devoted deep attention to one or a few phases, or have hastily and superficially scraped over the entire subject. For this reason there is yet to be written a useful work which adequately integrates all phases of scientific management. This work would of necessity be monumental.

In the January, 1948 issue of the Harvard Business Review, Professor Roethlisberger declared that nothing of significance has yet been written on the relation of human relations to scientific management. As the writer worked over the material selected for this thesis, the more convinced he became of the need for such a work. Perhaps such a work would in itself integrate all phases of scientific management. There appears to be a growing conviction on the part of each authority who has specialized in some particular phase or technical aspect of management that the human relations pertaining to his field should be given significant attention. This general recognition of the importance of human relations in every management quarter leads one to the feeling that human relations may very well be a common denominator. The writer has certainly found it to be so in his selection of thesis materials.

None of the following topics has been given special treatment in this thesis, but they are listed to illustrate that a human situation is implicit in a wide variety of what are usually considered non-human aspects of management:

1. Budgets as a force for morale
2. Time standards and the will to work
3. Worker acceptance of new manufacturing techniques.
4. Nature of organisational cooperation in cost control
5. Relation of worker effort to specialisation of labor
6. Relation of product sales to employee attitudes

The industrial revolution which we have been experiencing for several centuries has led to specialisation of training for those who operate the functions of a business enterprise, e.g., controllers, engineers, accountants, market researchers, attorneys, psychologists, etc. Each specialist, immersed in the intricacies of his specialty, has come to view his contribution as the one factor most indispensable to the success of the enterprise. It has accordingly become a difficult task for the manager to direct and coordinate these specialists as an effective team toward a common objective. Usually, the manager himself has moved into the heterogenous fraternity of top management from a specialty, and finds it hard to discontinue keeping an unbalanced interest in his former work. It is the writer's view that a manager needs a <u>working knowledge</u> of <u>many</u> fields pertaining to the operation of the enterprise, almost to the extent that he is a "jack of all trades and master of none". As long as he knows enough about a particular field to intelligently coordinate the performance of

the "master" of this field with "masters" of other fields, enough! If he gets along well with the specialists (either in or out of his company) and they have confidence in him as a leader, they will come to his aid when their knowledge and skills are needed.

An organization is a delicate human mechanism. Policies, processes, procedures, reports, equipment, and facilities are not the organization, but are used by the organization to accomplish its objectives. To the manager of the organization the important considerations should be balance and continuous flow of the oil of healthy human relations to keep the parts in smooth running order. Then, like a well-trained chorus, all contribute their individual and indispensable parts to produce the total harmony, under the competent, sympathetic and understanding direction of the leader. Can the leader sing every part in the chorus? No! But he understands the relation each member bears to the whole, sensing instantly when a member is not contributing to the total harmony, and he proceeds at once to correct any defection. As a corollary to this, it follows that if the mechanism develops lack of balance or oil, it degenerates into a Frankenstein, destroying itself and often its creators as well.

As a result of research conducted over a period of time and on a countrywide basis by the Committee for Economic Development, it was discovered that the vast proportion of business failures was attributable to poor overall management, rather than primarily to particular technical deficiencies. The CED's conclusion was that this situation could only be overcome by continuous education. The problem is twofold: first, to improve the skill of those already in managerial

positions; second, to prepare those who aspire to become managers in the future.

It seems to the writer that the large companies are in the process of handling their own problems in this respect, without the necessity of outside aid. Through their own training departments and their own training programs they are doing an outstanding job of management training, especially in respect to trainees for executive openings. The task is more difficult when it comes to those persons already occupying managerial positions in large companies. In order to broaden the capacities of existing executives it is desirable to periodically shift them from one post to another, preferably to responsibilities of a substantially different character. In a few companies definite planned programs of this type are in effect.)(e.g., Consolidated Edison, N. Y.)(

In the writer's opinion, there is opportunity in the typical line-and-staff set-up of a large company for the development of a pool of executives with all-round training, through adoption of a rotating "administrative assistant" plan. The administrative assistant is one who relieves a major executive of the routine and detail work of his job, acting not for himself but in the name of the major executive. Thus the administrative assistant is essentially a staff man.

Through experience the writer has found that there is considerable similarity in duties of the administrative assistant, no matter who his superior may be. Typically he is concerned with procedures, methods, organization, and personnel matters. Through periodic planned transfer of an administrative assistant from one major executive to another, and given qualities of leadership, he would eventually be qualified to

occupy a top management position, fortified with an overall viewpoint of his company and an appreciation of balance. It is doubtless a much easier task to shift staff men than it is line executives. Of course, there is no reason why a line executive with possibilities could not be transferred to a staff position for the specific purpose of eventually preparing him for larger line responsibilities.

It would seem that institutions of higher learning can fulfill a real need in accepting responsibility for increasing the skill of executives in small and medium-sized companies. Conferences, seminars, and institutes conducted by a college or university primarily for the benefit of this class of executives would provide the opportunity for increasing management skills, exchanging experiences, and improving knowledge of human relations.

The Advanced Management Program of Harvard Business School, in operation since February, 1943, is suggestive of what can be done along this line. Candidates for the program are carefully selected by the top managements of their companies and their tuition paid by the organizations employing them. The training covers a thirteen-week full-time period and is conducted on the Harvard campus, where the candidates live together while pursuing their studies. They are usually sent to the Business School just prior to a promotion which will require of them greater responsibility, broader executive viewpoint, and greater skill in human relations. The titles of the men who have attended the program in the past range all the way from factory superintendent to president. Candidates are in most cases selected by the presidents of their companies, and are frequently men regarded by their associates

as indispensable to efficient company operation. There are six courses in the Advanced Management Program and no examinations. The study program is divided about equally among the following subjects: administrative practices, cost and financial administration, production management, marketing management, problems in labor relations, and business and the American Economy. In addition to gaining immeasurably from their informal contacts with others and the exchange of experiences, the students gain the coordinated bird's eye view of top management and a deeper understanding of the human side of free enterprise. Variations of the Harvard Advanced Management Program could well be considered by other educational institutions of collegiate grade, especially those located in or near industrial areas.

In most colleges, undergraduate courses in some way pertaining to business administration are almost always spread over a considerable number of departments, and are seldom coordinated. Typical examples of such collegiate departments or schools are psychology, sociology, engineering, economics, and business administration itself. There is a tendency toward the building of "vested interests" by ambitious professors, and a consequent duplication of effort. Actually, it is impossible for the average department or school of business administration to offer <u>all</u> the management training that an interested student should have. Each of many other departments is in a position to make valuable contributions to the students' unified, balanced training. Hence, it is the writer's belief that a powerful all-college committee chairmaned by the head of business administration should operate for the purpose of creating and coordinating management training programs

that cut across departmental lines, and for the purpose of promoting and approving all courses outside the business administration department or school, and that pertain to the field of business. Thus the student could avail himself of a much sounder business degree program than is now possible in most colleges.

APPENDIX

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