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An Evaluation of the Fundamental Changes in the Philosophy of Personnel Administration From Manipulation to Motivation.

Mohamed Adel a. m Hassan

Louisiana State University and Agricultural & Mechanical College

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AN EVALUATION OF THE FUNDAMENTAL CHANGES
IN THE PHILOSOPHY OF PERSONNEL ADMINISTRATION
FROM MANIPULATION TO MOTIVATION

A Dissertation

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

in

The Department of Management and Marketing

by

Mohamed Adel A. M. Hassan
B.S., Alexandria University, Egypt, U. A. R., 1949
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<table>
<thead>
<tr>
<th>CHAPTER</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACKNOWLEDGMENT</td>
<td>ii</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>ix</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>xii</td>
</tr>
<tr>
<td>ABSTRACT</td>
<td>xiii</td>
</tr>
<tr>
<td>INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>Purpose of the Study</td>
<td>4</td>
</tr>
<tr>
<td>Method of Approach</td>
<td>5</td>
</tr>
<tr>
<td>Definitions</td>
<td>5</td>
</tr>
<tr>
<td>I. A BRIEF HISTORICAL DESCRIPTION OF THE</td>
<td></td>
</tr>
<tr>
<td>STATUS OF LABOR</td>
<td>7</td>
</tr>
<tr>
<td>Status of Labor Until the Industrial Revolution</td>
<td>7</td>
</tr>
<tr>
<td>Status of Labor From the Industrial Revolution</td>
<td>10</td>
</tr>
<tr>
<td>Changing Concepts of Labor</td>
<td>12</td>
</tr>
<tr>
<td>Summary</td>
<td>14</td>
</tr>
<tr>
<td>II. MEANING OF SCIENTIFIC MANAGEMENT AND</td>
<td></td>
</tr>
<tr>
<td>ITS UNDERLYING PHILOSOPHY</td>
<td>15</td>
</tr>
<tr>
<td>Meaning of Scientific Management</td>
<td>16</td>
</tr>
<tr>
<td>Taylor's Philosophy of Personnel Administration</td>
<td>16</td>
</tr>
<tr>
<td>Weaknesses of Scientific Management</td>
<td>20</td>
</tr>
<tr>
<td>CHAPTER</td>
<td>PAGE</td>
</tr>
<tr>
<td>---------</td>
<td>------</td>
</tr>
<tr>
<td>Scientific management tends toward specialization</td>
<td>20</td>
</tr>
<tr>
<td>One best way is not the best for each individual</td>
<td>21</td>
</tr>
<tr>
<td>Psychological fatigue ignored</td>
<td>22</td>
</tr>
<tr>
<td>Scientific selection methods not used</td>
<td>25</td>
</tr>
<tr>
<td>Nonscientific methods used to determine fair day's work</td>
<td>28</td>
</tr>
<tr>
<td>Inability to determine a fair day's wage</td>
<td>30</td>
</tr>
<tr>
<td>Tended to be autocratic</td>
<td>31</td>
</tr>
<tr>
<td>Wages considered as almost the sole motivational factor</td>
<td>34</td>
</tr>
<tr>
<td>Lacked humanitarian attitude in its procedures</td>
<td>35</td>
</tr>
<tr>
<td>An Evaluation of the Philosophy of Scientific Management</td>
<td>38</td>
</tr>
<tr>
<td>Summary and Conclusion</td>
<td>45</td>
</tr>
</tbody>
</table>

III. THE MOVEMENT OF INDUSTRIAL PSYCHOLOGY AND ITS CONTRIBUTION TO THE SELECTION PROBLEM | 47 |
| The Vocational Guidance Movement | 49 |
| Importance of Psychologists' Contributions to Industry | 52 |
### CHAPTER PAGE

| Evaluation of the Psychologists' Work to the Selection Problem | 53 |
| Significance of individual differences in industry | 53 |
| Evaluation of the importance of interviewing | 57 |
| Evaluation of tests as an employment procedure | 60 |
| Summary and Conclusion | 65 |

### IV. EFFECTS OF PSYCHOLOGICAL FATIGUE ON WORKERS' PRODUCTIVITY AND ACCIDENT RATE

| Psychological Fatigue has Little Effect Upon Productivity | 66 |
| Psychologists have Given Little Attention to Psychological Fatigue | 70 |
| The Nature of Fatigue | 71 |
| A Satisfactory Definition for Fatigue has Not Been Developed | 73 |
| Differences Between Fatigue and Boredom | 75 |
| Measuring Fatigue | 76 |
| Output Only is Not Enough to Measure Fatigue | 80 |
| Relationship Between Fatigue, Accidents, and Output | 83 |
| Summary and Conclusion | 90 |
## V. WORKER ATTITUDES TOWARD MOTIVATIONAL FACTORS

Meaning of Motivation ................................................................. 93
Job Dissatisfaction ........................................................................ 94
Extent of job satisfaction ............................................................. 95
What does the worker want most in his job? .............................. 100

### Relative Importance of Motivational Factors to Workers

Job security and its importance to workers ................................ 102
Wages and their importance to workers ..................................... 105
Advancement and its importance to workers .............................. 109
Importance of other motivational factors ................................. 110
Evaluation of morale surveys .................................................... 111

### Comparison Between the Importance of Job Security and Wages

Reasons for joining unions ......................................................... 119
Causes of work stoppages .......................................................... 121
Reasons for turnover .................................................................. 125

### Summary and Conclusion

## VI. MANAGEMENT AND UNION LEADERS' OPINIONS TOWARD MOTIVATIONAL FACTORS

Management Opinions ................................................................. 130
<table>
<thead>
<tr>
<th>CHAPTER</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Union Leaders' Opinions</td>
<td>134</td>
</tr>
<tr>
<td>Comparison Between Workers, Management, and Union Leaders' Opinions</td>
<td>139</td>
</tr>
<tr>
<td>Summary and Conclusion</td>
<td>141</td>
</tr>
<tr>
<td>VII. EMPLOYMENT SECURITY</td>
<td>143</td>
</tr>
<tr>
<td>Cyclical Unemployment</td>
<td>144</td>
</tr>
<tr>
<td>Seasonal Unemployment</td>
<td>151</td>
</tr>
<tr>
<td>Union's Policy Toward the Employment Security Problem</td>
<td>155</td>
</tr>
<tr>
<td>Unemployment Benefits</td>
<td>158</td>
</tr>
<tr>
<td>Significance of Guaranteed Annual Wage Plans.</td>
<td>162</td>
</tr>
<tr>
<td>Experience with guaranteed annual wage plans</td>
<td>164</td>
</tr>
<tr>
<td>Present status of guaranteed annual wage plans</td>
<td>167</td>
</tr>
<tr>
<td>Government's role in guaranteed annual wage plans</td>
<td>168</td>
</tr>
<tr>
<td>Summary and Conclusion</td>
<td>175</td>
</tr>
<tr>
<td>VIII. FINANCIAL INCENTIVES IN INDUSTRY</td>
<td>177</td>
</tr>
<tr>
<td>Effects of Financial Incentives on Output</td>
<td>178</td>
</tr>
<tr>
<td>Relation Between Wages and Output in Industry</td>
<td>180</td>
</tr>
<tr>
<td>Wage rates not geared to productivity</td>
<td>181</td>
</tr>
<tr>
<td>CHAPTER</td>
<td>PAGE</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>A &quot;fair day's wage&quot; should equal a &quot;fair day's work&quot;.</td>
<td>186</td>
</tr>
<tr>
<td>Union Wage Policies</td>
<td>188</td>
</tr>
<tr>
<td>Responsibility of unions toward increased wages</td>
<td>190</td>
</tr>
<tr>
<td>Comparison between union and nonunion wage rates</td>
<td>193</td>
</tr>
<tr>
<td>Responsibility of Management for Low Output</td>
<td>198</td>
</tr>
<tr>
<td>Summary and Conclusion</td>
<td>199</td>
</tr>
<tr>
<td>IX. SUMMARY AND CONCLUSIONS</td>
<td>201</td>
</tr>
<tr>
<td>The Impact of Scientific Management on Personnel Administration Philosophy</td>
<td>202</td>
</tr>
<tr>
<td>The Impact of Industrial Psychology on Personnel Administration Philosophy</td>
<td>203</td>
</tr>
<tr>
<td>Findings</td>
<td>203</td>
</tr>
<tr>
<td>Conclusions</td>
<td>208</td>
</tr>
<tr>
<td>BIBLIOGRAPHY</td>
<td>212</td>
</tr>
<tr>
<td>VITA</td>
<td>239</td>
</tr>
</tbody>
</table>
LIST OF TABLES

TABLE                    PAGE

I.  The Average Number of Accidents in a Working Day
    From One Hour to Another ........................................................... 85

II. The Number of Work Stoppages, Number of Workers
    Involved, and Number of Man-days Idle, from
    1948 to 1957 ....................................................................................... 96

III. Median Percentage of Workers Dissatisfied with
     their Jobs from 1947 to 1955 ......................................................... 98

IV. A Review of the Relative Importance of the Motiva-
    tional Factors According to the Number of
    Workers who Chose Every Factor as the First
    Want in 21 Surveys ................................................................. 113

V. An Averaging of the Results of 21 Workers†
    Attitude Surveys ........................................................................... 115

VI. Comparison Between the Percentage of Stoppages
    that were Caused Because of Wages and Job
    Security from 1943 to 1957 ......................................................... 122

VII. Percentage Distribution of Quits By Major Reasons
    for Quitting in Five Different Studies ............................. 127

VIII. An Average Ranking of the Results of Four Surveys
     on Management Opinion Toward Motivational
     Factors ...................................................................................... 131
<table>
<thead>
<tr>
<th>TABLE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>IX. Ranking of Motivational Factors from the Union Leaders Point of View</td>
<td>136</td>
</tr>
<tr>
<td>X. A Comparison of the Ratings of Workers, Union Leaders, and Management of the 10 Motivational Factors</td>
<td>140</td>
</tr>
<tr>
<td>XI. Unemployed Persons as a Percent of the Civilian Labor Force from 1949 to 1958</td>
<td>146</td>
</tr>
<tr>
<td>XII. Annual Average of Layoff Rates in Selected Industries from 1951 to 1957, (per 100 employees)</td>
<td>147</td>
</tr>
<tr>
<td>XIII. Layoff Rates in Selected States in 1957, (per 100 employees)</td>
<td>149</td>
</tr>
<tr>
<td>XIV. Monthly Fluctuation of Layoff Rates in Selected Industries in 1957, (per 100 employees)</td>
<td>152</td>
</tr>
<tr>
<td>XV. Percentage Changes in Layoff Rates in Selected Industries in 1957, (per 100 employees)</td>
<td>154</td>
</tr>
<tr>
<td>XVI. Employees in Nonagricultural Establishments by Industry from One Month to Another in 1957, (in thousands)</td>
<td>156</td>
</tr>
<tr>
<td>XVII. Percentage of Salaries and Wages in Private Establishments to the National Income from 1948 to 1957</td>
<td>171</td>
</tr>
<tr>
<td>TABLE</td>
<td>PAGE</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>------</td>
</tr>
<tr>
<td>XVIII. Agreements Covering 5000 or More Workers in Effect January 1, 1958 and January 1, 1959, Providing for Termination, Wage Reopening, or Wage Adjustment in all Industries</td>
<td>179</td>
</tr>
<tr>
<td>XIX. Hourly Earning and Output Per Man Per Hour Indexes in Industry, 1947-1957</td>
<td>182</td>
</tr>
<tr>
<td>XX. Earnings Per Hour in Industry in 1956 According to the Geographical Areas</td>
<td>196</td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>FIGURE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. The Curve of Output in Industry in the 1920's</td>
<td>67</td>
</tr>
<tr>
<td>II. The Curve of Output in Industry at the Present</td>
<td>69</td>
</tr>
<tr>
<td>Time</td>
<td></td>
</tr>
<tr>
<td>III. The Relation Between Feeling of Fatigue and Actual Production Rate</td>
<td>81</td>
</tr>
<tr>
<td>IV. The Relationship Between Output and Accidents</td>
<td>87</td>
</tr>
<tr>
<td>V. The Relationship Between the Rate of Accidents and the Degree of Experience</td>
<td>89</td>
</tr>
</tbody>
</table>
ABSTRACT

This study shows the fundamental changes in the philosophy of personnel administration that have occurred because of the scientific management and industrial psychology movements. This work explains the underlying philosophy of scientific management and its effect on manipulating human behavior in industry. It also indicates the importance of the field of motivation and incentives in labor-management relations.

An extensive library survey of management literature constitutes the basis of this study. An evaluation is made of the contributions of industrial engineers and industrial psychologists and sociologists to the field of personnel administration. The transition from the scientific management movement to the industrial psychology movement has caused fundamental changes in the philosophy of personnel administration. These changes have significantly modified management's attitudes concerning selection, and fatigue of workers. However, management thoughts on financial and non-financial incentives have not been significantly modified.

An analysis is made of a large number of opinion surveys of workers, managers, and union leaders in an effort to determine the motivational factors needed most by workers from the point of view of workers themselves, managers, and union leaders. A comparison
of the opinions of these three groups is made to determine the causes of industrial disputes and to determine areas of misunderstanding between these groups.

It is found that there is a difference between what workers want most, and what management and union leaders think workers want most from their jobs.

At the top of the list of workers' wants are higher wages and greater employment security. They want them equally. Following these two motivational factors are: recognition, interest, supervision, advancement, working companions, working conditions, working hours, and benefits.

On the other hand, managers still believe that workers want wages more than any other motivational factor including employment security which they ranked third in importance. In this respect management thinking has not changed from that of the classical school of management developed by Taylor and his colleagues. Also union leaders did not understand the importance of employment security to workers when they ranked it second to wages.

Therefore, there is a lack of correlation between the opinions of workers, management, and union leaders concerning the relative importance of financial and non-financial incentives to workers. However, management seems to have better sense of workers' opinions concerning other motivational factors than union leaders.
In general, it is misleading to list incentives in the order of their importance. The particular incentives motivating an individual within a group of individuals are so different that only sweeping generalizations can be made. At the present time financial and non-financial incentives are of equal importance in motivating employees in the long run. However, in the short run the relative importance of the different motivational factors differs from one time to another and depends upon the immediate needs of the individual, as well as the general economic conditions of the industry and the country.

Neither financial nor non-financial incentives are sufficient within themselves to achieve optimum results in obtaining high morale and harmonious labor relations. The problem is not one of supplying economic or non-economic incentives; rather it is one of determining specifically how to fit both types of incentives effectively into an overall personnel program in order to produce the greatest degree of sustained effort on the part of employees.
INTRODUCTION

Over-all the effectiveness of any organization is determined very largely by the contributions of its individual members. Since this is true, one of the primary objectives of any organization should be to increase the effectiveness of each individual in the organization; and if management means getting optimum results through people, then personnel administration is a basic function of management. The conclusion that can be drawn from these deductions is that management and personnel administration are one and the same and that they should not be separated. ¹

Personnel administration is a relatively new specialized field of management. Because it is new, there are wide areas of disagreement as to its proper role in the organization. Actually there is no common understanding as to the responsibilities of the personnel administrator. Moreover, there is no generally accepted system of techniques and methods for the administrator's carrying out his duties. In this respect personnel administration is still lagging far behind other specialized management functions. ²


The personnel administration function is not restricted to operations in factories among wage earners only. It is also important in offices and in the ranks of management itself, (where top managers have the problem of winning the cooperation of their subordinates.) It is not only needed by private businesses, but also by non-profit institutions and government.

Effective personnel administration is an important means of reducing the costs of absenteeism, accidents, turnover, and of operations in general. It can also make continuing contributions to smooth labor relations, in some cases even eliminating strikes within a given firm. This explains why the field of personnel administration is of such great importance at the present time.

Personnel administration has two major goals. The first goal is to secure the effective cooperation of workers with each other and with management in operating a profitable and progressive business that will sustain good wages, safe working conditions, and friendly relations within the organization. The second goal is to see that the growth of the personality of every individual on the payroll is taken into account and aided.

In performing the function of personnel administration much emphasis is placed upon such activities as employment, training, promotion, transfer and discharge. Emphasis is also given to health and safety, wage bonuses and pension administration, recreational activities,
employee welfare and services, and other morale-building techniques.

The personnel department is not an end within itself, but is merely the medium through which the general management functions in the administration of human relations. Personnel departments vary greatly in authority, responsibility and efficiency from one organization to another. These departments range from those which do nothing more than supply the required labor force to those which have well-rounded programs and well developed personnel policies. At the present time the personnel department is more important than ever before in industrial organizations.

One of the important functions of personnel departments is to develop and maintain lines of communication throughout the organization. Therefore, it is the duty of this department to undertake the necessary coordination during the collective bargaining process if the company as a whole is to present a unified front at the bargaining table.²

Finally, without the cooperation of the men who occupy supervisory positions in the organization, the successful operation of the personnel department would be impossible. It is for this reason that every personnel director finds it imperative to create harmonious relationships with the superintendents, department heads, and foremen.

PURPOSE OF THE STUDY

Personnel administration has been characterized by two important philosophies. The first philosophy began during the latter half of the nineteenth century with the work of Frederick W. Taylor and his colleagues. It has had considerable influence upon the policies and practices of personnel administration since its beginning. In this study the term "scientific management" will be used to refer to this whole movement. The second philosophy was formally introduced near the end of the 1920 decade with the Hawthorne experiments. At this time, the researchers began to think seriously about developing some technical methods to solve some of the problems that arose in labor-management relations as a result of applying scientific management in industry.

It is the purpose of this study to reveal the underlying philosophy of scientific management and its effect on manipulating human behavior in industry. This study is also dedicated to an exploration of the importance of the field of motivation and incentives in labor-management relations. An attempt is made to find out the motivational factors needed most by workers. Another purpose is to show the motivational factors that union leaders and management people think workers need most. A comparison of the opinions of workers, union leaders, and managers is made to determine whether there is agreement among these groups as to the relative importance of motivational factors. If not, which of the two groups, union leaders or managers is more cognizant of the needs
of workers in this respect. Finally, an attempt is made to determine
the approaches union leaders and management people should take to
improve labor-management relations.

METHOD OF APPROACH

This study is founded on an extensive library survey of manage­
ment literature. An evaluation is also made of the contributions of
industrial engineers and industrial psychologists and sociologists to the
field of personnel administration. Finally, an over-all averaging of a
selected number of worker-, union leader-, and management-opinion
surveys is made to determine the causes of industrial disputes and the
areas of misunderstanding between these groups.

DEFINITIONS

Personnel administration designates the philosophy, the motives,
and the methods of organizing and treating people as individuals and in
groups, at all levels, and at the places where they work. Its function
is to enable and encourage workers to accomplish the best that is in them
and to provide them with the maximum degree of personal satisfaction.
It is the development of policies and practices which will provide for an
adequate and effective executive, supervisory, and rank-and-file work
force. Finally, it is the utilization of the interests and abilities of all
employees in such a manner as to achieve the objectives of the organiza­
tion most fully.
"Labor," "workers," "working class" refer to the group of wage and salary earners who work under supervision and who themselves have no supervisory responsibilities. This definition limits this study to manual workers and the lower rank of white-collar employees and excludes the higher levels of management and salaried professional employees. This procedure rests on a judgment that the similarities between manual and white-collar workers are more important than the differences between them. Both of them have no supervisory responsibilities. They usually do not own their own tools or control the process of production. They occupy a similar status in the productive system and depend on their wages to make their living. Both have relatively low incomes, and suffer marked insecurity in the tenure of their jobs. Again, both groups usually remain in a paid employment status throughout their working lives.4

CHAPTER I

A BRIEF HISTORICAL DESCRIPTION OF THE

STATUS OF LABOR

History shows that the status of the working class has undergone a great change; and it continues to change today. As the status of this class changed from that of slave to serf to free worker, personnel problems also changed.

The relationship between employers and employees has passed through several stages. This chapter discusses some of the most important changes that have occurred.

STATUS OF LABOR UNTIL THE INDUSTRIAL REVOLUTION

In the early part of the period preceding the Industrial Revolution the most common type of employer-employee relationship was that in which employers were masters and employees were essentially slaves. This stage represented the first stage of employer-employee relationships. The services performed by slaves ranged from varied manual tasks to specialized responsibilities in agriculture and military services. Under this system slaves who were completely at the mercy of their owners could be sold individually or in groups, and could be mistreated or possibly even put to death.
Since the slave had only obligations with no corresponding rights, and because he could not bargain with his master or appeal to a government agency for assistance, it appeared that management's problems in dealing with labor were relatively simple. Wages, working conditions, and the amount of work required of the slave were determined, by the operation of the law of supply and demand.

This slavery system died out because it was inefficient. Lacking initiative, the slave had no interest in his work, and there was no opportunity for advancement. Moreover, his incentive was entirely negative. He merely worked to avoid a beating, and he required close supervision.

The second stage was the system of serfdom. The institution of serfdom reached the peak of its development in Europe during the middle ages. Unlike the slave, the serf was not the property of his lord, but was tied to the land, and could not be sold except as an adjunct to the land. Serfs were obliged to serve the manorial lord in return for protection against outside enemies, and allowance of food, and the provision of crude shelter for themselves and their families. Serfs enjoyed a somewhat more favorable status than slaves. Their position in the manorial system entitled them to certain fairly well established rights. To the extent that the serf utilized his own time efficiently, his income increased and thus he had an incentive to work without supervision. In general, they were neither independent laborers nor slaves.
Because serfdom could exist only in an agricultural society, and since industry and commerce became more important factors in the life of the community, serfdom declined until it practically disappeared. It was during this period that specialization developed a small class of artisans. The status of artisans differed from that of modern employees in that wages were not determined, nor did they depend upon the comparative bargaining power of both employers and employees. Wages were subject to regulations by church authorities and were fixed at levels believed to be adequate for the artisans to be able to live, to raise their families, and to maintain their existing social and economic status.

The handicraft stage, the third stage, appeared when agriculture, trade, and industry became distinct and specialized in the late middle ages. The system of production that characterized this stage has sometimes been called the domestic system, because the household served as the usual industrial unit.

The guild system developed within this hand-working system with its craftsmen, journeymen, and apprentices. The guild's growth was slow, extending over several centuries. Every guild was required to obtain a charter from the king to get the power to establish apprenticeship rules, quality standards, prices, and conditions of work.

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Within the guild itself, clearcut differentiation separated master craftsmen, journeymen, and apprentices. The latter characteristically worked for board, lodging, and a small allowance. Journeymen and apprentices worked together beside the master craftsman, generally in the craftsman's home. Because they all worked closely together, their social status was similar. The personnel administration functions of selection, training, and wage administration were in evidence under the guild system as well as a certain amount of bargaining as to wages and working conditions. 2

STATUS OF LABOR FROM THE INDUSTRIAL REVOLUTION

The factory system of industrial production appeared as a result of that far-reaching series of social and economic changes known as the Industrial Revolution.

The disappearance of the guild system was one of the changes brought about by the Industrial Revolution. Among the most important of other changes were the gradual expansion of markets, the increasing use of machines, and greater capital requirements for the master craftsman to set up a shop. 3

The monopoly power of the guilds was weakened by merchant


capitalists who tried to increase their opportunity for larger profits by extending their enterprise to include the risk of production as well as those of trading. The merchant capitalists established what became generally known as the "Cottage System," in which merchants provided masters with raw materials for transformation into finished products. The work was customarily paid for on a piece-work basis, the merchant paying the master who, in turn, compensated his employees. This system changed the status of master craftsmen from entrepreneurs to wage earners. At the same time, other merchants hired families outside the guild system to process materials in their homes. Thus the cottage system placed the merchant capitalist in a superior bargaining position. So long as cottages competed with each other for work, the merchant capitalists had few personnel problems and did not need to be concerned about working conditions.  

The factory system followed the guild system. Under this new system of production, a large force of workers was brought together where machines were housed. The introduction of factories (and their rapid increase in numbers and size) resulted in extensive changes in living conditions. This change in the system of production affected wages and working conditions as well as the social status of workers. Workers obtained economic freedom never known before: freedom of contract,

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freedom to choose their jobs, freedom to quit, and freedom to bargain about conditions of employment. This new system of production was characterized by great specialization in functions. As a result of this specialization, the jobs of many workers became more monotonous than before; and operations assigned to individuals were frequently simple.

In the United States during the twentieth century there has been increasing emphasis on the personnel function in management. The labor shortages that followed World War I, the growing attention of management to the welfare of employees, the growth of government influence in industrial relations, the shift of power from employers to employees after they organized themselves in powerful unions, and most of all the scientific management movement has led to the development of the field of personnel administration. The great depression, the labor problems of World War I and II, and the many research studies in personnel problems have helped increase the importance of personnel administration.5

CHANGING CONCEPTS OF LABOR

Looking at the subject from another point of view, it appears that various changes in economic organization, in economic doctrine, and in the structure of society as a whole caused different changes in the concepts of labor. The relationship between employers and employees has passed through stages in which the worker has been considered a commodity, a machine, an individual, and a partner with management.6


6Knowles, op. cit., p. 20.
The commodity concept of labor lasted until the latter half of the nineteenth century. Under this concept labor was regarded as merely one of the factors of production, having a market price which depended mostly upon the supply of manpower and the demand for it. As a commodity, labor could be scarce and valuable or plentiful and cheap. Its price differed from time to time and from one place to another.

With the development of scientific management, industrial engineers developed a machine concept of labor. Industrial engineers thought that the work performed by individuals could be analyzed in the same manner as that performed by machines. Like the commodity concept, the machine concept is obviously inappropriate.

The individual concept began with the observation that workers, unlike machines, have feelings and emotions, and cannot be "designed" to meet the requirements of every job. In this concept psychologists and sociologists began to give adequate consideration to the emotions, stimuli, responses, attitudes, and personal and social adjustment of workers. Since the workers cannot sell their labor without being present themselves, and since they cannot be made to behave like machines because they bring to their jobs their feelings, personalities, and their social troubles, the concept of labor as individuals has been of considerable use in the analysis of labor-management relations. Labor unions have fought hard for the recognition of this concept and many businessmen have sponsored it.

The fourth concept is the industrial democracy concept. This concept's philosophy is inherent in the belief that maximum efficiency
of workers can be gained through real co-operation between management and workers. Under such a system labor is no longer subjected to the authority of management but becomes a part of management through participation in policy decisions. This concept is still in an early stage because workers are usually the junior partners and share in policy decisions only to a limited extent. With each change in the labor concept, philosophy of personnel administration has also changed.

SUMMARY

It can be seen that with each change in the labor concept (from commodity to machine to individual and, finally, to industrial democracy) the philosophy of personnel administration also changes. This phenomenon is a consequence of the fact that personnel administration philosophy in itself is dynamic, readily adjusting itself to the socio-economic forces of the time.

With the advent of the individual concept of labor the social scientists contributed to personnel administration philosophy through recognition of the fact that the man on a job does not divorce himself from his personal feelings to the extent that he can perform with the efficiency of a machine. Like the social scientists, the industrial engineers have exerted influence on the field of personnel administration. The next chapter constitutes an examination of the contributions of industrial engineers to personnel administration policies.
CHAPTER II

MEANING OF SCIENTIFIC MANAGEMENT AND ITS UNDERLYING PHILOSOPHY

Industrial engineers played an important role in the development of the philosophies, principles, and practices of personnel administration. The roots of scientific management are to be found in the life and thoughts of Frederick W. Taylor. In addition to Taylor, there was Frank B. Gilbreth who won great admiration with his display of genius in the reorganization of the bricklaying industry. Henry R. Towne was the first pioneer to make an attempt to solve the wage problem. Another pioneer was Henry L. Gantt with his bonus system of wage payment.

Harrington Emerson made valuable contributions to personnel administration through his studies into the efficiency of labor. Frederick Halsey introduced a premium plan of paying for labor. Sanford E. Thompson performed pioneer work in extending the principles of scientific management for the machine shop into the building industry. Still other pioneers were Carl G. Barth, a mathematician and inventor of the Barth slide rule, and H. King Hathaway who was known for his skill in perfecting scientific management for the Taylor Manufacturing Company.

All of these men worked during different phases in the development of the system of scientific management, some of them making
original contributions of great value, but Taylor's contributions are considered greater than those of any other person. ¹

MEANING OF SCIENTIFIC MANAGEMENT

Scientific management in its fundamental sense is a philosophy rather than a technique of research, standardization, planning, or controlling. It necessitates a mental revolution on the part of workers engaged in any particular establishment or industry toward their work, their fellow-men and their employers. It demands an equal mental revolution on the part of management people as to their duties toward all their daily problems.² McFarland believed that scientific management was the mental revolution aspect of the Industrial Revolution.³

TAYLOR'S PHILOSOPHY OF PERSONNEL ADMINISTRATION

Taylor is considered to be the first person to use the term "Scientific Management" to differentiate the new system of management from the old. This term was first used in Taylor's famous book The Principles of Scientific Management which was published in 1911. Since

that time this term has been used to specify and describe a new philosophy of management.

The concepts embodied in Taylor's system were not original with him. However, the way he combined them into a powerful relationship gave them a new meaning and constituted his original contribution. No one prior to Taylor had developed a logical and comprehensive philosophy of management. Moreover, most of the management theories that appeared after him were clearly influenced by his philosophy. 4

Taylor built his new philosophy on three observations. First, he realized that workers very rarely tried to increase their productivity or even to keep it up to the reasonable standard of the average man. Prior to his time there was not enough motive power to encourage workers to increase their efforts in production. Their objective in working was to live rather than to raise their standard of living. Moreover, workers had no confidence in management and management was not fair with workers. Taylor's second observation was that men were paid according to their positions and not according to their individual character, energy, skill, and reliability. The effect of such a system was so bad that even the ambitious men, finding that they would not get extra pay if they worked hard, worked just as little as possible to keep their positions. 5 Drury reported that the natural and logical


5 Drury, *op. cit.*, p. 54.
result of such an attitude was an invariable tendency to drag the men down even below the level of the medium. 6 As his third observation, Taylor noted that tasks and piece rates were unsatisfactory to workers because they were not based on an exact knowledge of what could be done. Capable men who could accomplish their task faster than the others were always penalized for their extra efforts by having their piece rates reduced if they were paid by piece or their tasks increased if they were paid by the hour. 7 The reason management usually gave for such adjustment was to correct an error in overestimating the rate per piece, or to correct the underestimation of the task to be completed per day.

Taylor's philosophy is based on the belief that there is actually no conflict in the interests of management and labor. Their interests are one and the same, and prosperity for employers cannot exist for a long period unless it is accompanied by prosperity for the workers. The converse is also true. Taylor stressed the fact that it was possible to pay high wages to workers while maintaining low labor costs to the firm. 8 In this respect his revolutionary thoughts were completely in

6 Ibid., p. 54.


opposition to traditional theory of production prevailing at that time. According to this theory, it was necessary to pay low wages in order for the firm to have low costs and high profits.

Taylor's major contribution to the body of knowledge in the personnel management field was the development of four fundamental principles. These principles are:

1. The development of a science for each element of a man's work to replace the old rule-of-thumb method.
2. The selection of the best worker for each particular task, selection to be followed by a program for training the workers. This principle was designed to replace the practice of allowing the worker to select his own task and train himself as best he could.
3. The development of a spirit of hearty cooperation between management and workers in carrying on activities in accordance with the principles of the developed science.
4. The division of work into almost equal shares between management and workers. (Management was to take over all planning work, a function for which they were better fitted than workers.)

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9 Taylor, op. cit., p. 36.
WEAKNESSES OF SCIENTIFIC MANAGEMENT

Several weaknesses are to be found in the philosophy of scientific management. Certainly it could be of more value to both management and workers if such weakness did not exist.

Scientific Management Tends Toward Specialization

The entire structure of scientific management rests upon the concept of specialization which in turn is the result of the separation of planning from action. All planning is to be done by management, and workers are merely to follow instructions. It was largely through specialization that Taylor was able to reduce costs, and working hours, and to raise workers' earnings. However, scientific management went so far in specialization that the task became of little interest to the worker even if it paid him a larger income. Moreover, self expression was greatly intensified under such a system, and self respect was largely affected. Therefore, the divorce of planning from doing deprived industry of the full benefit that could be obtained from scientific management. Drury pointed out that, although planning and doing are


separate parts of the same job; they are not separate jobs. He recommended that workers be given a chance to plan their own work to keep themselves interested in their jobs. 13

One Best Way is Not the Best for Each Individual

It is the philosophy of scientific management that there are several ways of doing a job but only one best way at any one time for doing the job most economically, in the fastest time, and of the best quality. The best method can be discovered by a continuous study for each task to determine how different individuals perform the task and how long it takes. Ineffectual motions and practices should be eliminated and efficient ones should be adopted. Frank Gilbreth was not only interested in discovering the fewest motions in a given task but also the shortest ones. There is no need here to describe the techniques he used in his studies and experiments, but, in general, his philosophy can be summarized in the statement in which he says "There is no waste of any kind in the world that equals the waste from needless, ill-directed and ineffective motions." 14 It was Gilbreth's opinion that the quickest movement was the best movement. 15 This contravenes the fact that speed in


performance is not an adequate judgment for the effectiveness of a movement. The ease by which the task is performed should be taken into consideration in determining the one best way. Viteles pointed out that the best movement should be the easiest rather than the quickest performance.  

By trying to determine the one best way of doing the task, scientific management people ignored the importance of individual differences. The best method for one individual should not definitely mean that it is the best method for another. Exact standardization of methods used is limited by the fact that individuals cannot be standardized. Although the standard method may prove to be the best, it should not be forced upon all workers. Each worker should be allowed to use his own devices if the results are satisfactory. Fenelon recommended that every individual within limits must develop his own style and no attempt should be made to standardize rigidly the movements of different workers.

**Psychological Fatigue Ignored**

Fatigue study was another contribution by Frank and Lillian

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17 Ibid., p. 435.
Gilbreth. They studied worker fatigue that resulted from performing various types of work, classifying fatigue into two categories: (1) the unnecessary fatigue which resulted from unnecessary effort, and (2) the necessary fatigue which resulted from necessary movements. Their objectives were to determine which was unnecessary and which was necessary fatigue, and to eliminate as much as possible the unnecessary fatigue, and to reduce the necessary fatigue to the least amount.

Frank Gilbreth directed his attention to the worker's motions during task performance. He developed new methods and succeeded in eliminating many motions. In his experiments in the brick laying industry, he reduced the number of motions required to lay one brick from 18 to 5 motions. This caused an increase of 200 per cent in the productivity of workers and a decrease in the number of motions from 2160 to 1750 motions per hour. 20 However, eliminating motions does not necessarily mean a reduction in the amount of fatigue because the nonfatiguing movements may be the ones which are removed. 21

Taylor also was interested only in the physical aspect of fatigue study. Since Taylor attempted to eliminate fatigue through rest periods, his work was of a physiological rather than a psychological nature.


21 W. G. Holmes, Applied Time and Motion Study (New York: The Ronald Press Co., 1945), p. 120.
Moreover, Taylor attempted to stop "sodiering" on the job as well as conversation between workers, not recognizing that such actions might cause monotony to workers. While a continuous strain of attention produces, in many cases, a state of fatigue, a short conversation might bring relief and relaxation to the worker to such an extent that a social conversation raises the general emotional mood. This feeling of social pleasure may be a source of new power to workers. It should be recognized, however, that much unnecessary talking involves a distraction of attention among workers.

Although industrial engineers attempted to eliminate physiological fatigue, they increased psychological fatigue through the concept of complete division of labor. Their failure to appreciate the psychological factor in fatigue was probably attributable to the nature of the work to which they exclusively confined their observation. Most of their studies were confined to such tasks as shoveling pig iron and laying bricks, both of which require tremendous physical effort on the part of the worker. It is apparent also that in their studies of physiological fatigue the industrial engineers did not base their experiments on scientific data. They had no measurements for respiratory indications or of oxygen consumed. Industrial engineers were not even interested in knowledge already published in their own time on the expenditure of energy by the

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human motor. To recognize fatigue they waited for the appearance of signs of physical decline among the workers. In fact, they did not even think of psychological fatigue as an important factor in decreasing the productivity of workers. Although Lillian Gilbreth placed considerable emphasis on the psychological factor in management, her studies of psychological fatigue were less significant.

**Scientific Selection Methods Not Used**

Taylor realized that workers were put in their jobs without any consideration of their mental or physical ability. Moreover, Taylor recognized that most workers had inadequate and improper training which made them unable to perform their duties perfectly. At that time the rule-of-thumb method of production was the traditional practice in American industry. Under such a system any kind of worker was placed at any kind of job and trained in any kind of way—or not at all. Once a worker started his job he was seldom transferred to another. As a result, his absence caused a delay in the production process, since no other worker could replace him with the same efficiency. Management rarely looked to the future and was ill prepared to face such problems.

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It was Taylor's philosophy that workers must be carefully selected for each job. Accordingly, he called for the application of scientific selection methods in industry. It was his opinion that if a careful study of the ability and character of every individual were done to put the individual in the job that suited him most, he would be satisfied and turn out his highest output. Taylor wanted every individual to be "a first class man" in a certain job but he could be a second or third class man in other jobs. Accordingly, it was the duty of management to put each worker in the job where he could be "a first class man." In one of his studies Taylor found that the first class man could do two to four times the work that was done by an average man.  

It is noteworthy that Taylor claimed that the essential element of scientific management was achieved through careful selection. Yet neither Taylor nor any of his colleagues pointed out the scientific methods that were to be used for selecting workers. Hoxie reported that the methods of selection and hiring employed by scientific management shops did not differ essentially from those which were used by the other establishments. Taylor discharged those who could not produce up to the standard he set, claiming that they did not fit their jobs. By this action he tried to adjust the worker to fit the job rather than selecting

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the worker to fit the job to be done. Thus he violated an important principle of good management. Taylor explained his action as being human behavior from his side toward the workers. This explanation rings true in the sense that a worker who occupies the wrong position, or works in the wrong profession, will suffer inefficiency in his performance probably all his life. On the other hand, it is certainly inhuman to discharge a worker without telling him what kind of a job he fits best. Taylor's action in this respect shows that he did not give adequate consideration to the feelings of his workers. Moreover, he depended upon his personal judgment in discharging them. He never believed in a joint committee of management and workers to discuss the reasons for worker discharge.

In brief, Taylor's method of selecting workers was to put the man on the job to find out whether or not the worker was considered "a first class man." Taylor considered speed only as the best standard of measuring the efficiency of workers. He made his decision as to selection according to the volume of output achieved by the worker. The method Taylor used to select workers was not scientific. It was a crude method of trying the worker on the job; if he gave the standard output he would stay on the job; otherwise he would be discharged.

It follows that although the objective of Taylor and his colleagues

27Friedmann, op. cit., p. 54.
was to eliminate waste of the human element, they increased waste of such effort in society through nonscientific methods of selection.

**Non scientific Methods Used to Determine Fair Day’s Work**

Industrial engineers believed that neither management nor workers really knew what constituted a fair day’s work or a fair day’s wage. They were certain that this was the cause of much of the misunderstanding between management and workers.  

In order to find out what constituted a fair day’s work Taylor used what he claimed to be a scientific study of unit times. He proceeded to time the job with a stop watch. Once the time was set on the job, Taylor believed that a fair day’s work had been scientifically determined. He assumed that time study must eliminate all arguments over standard of work performance.

Taylor used the inductive method of analyzing his time study data. He assumed that if a worker could do a job in a certain time, then he could do it with the same efficiency at any other time. Therefore, he did not recognize that the behavior of any individual is changeable from one time to another.

Moreover, the techniques which were used by industrial engineers

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to determine the fair day's work were crude and subject to several fundamental errors. Through these crude methods the standard time for doing the task was determined by a comparison of the performance elements of the task by different operators. Where the time for one element differed, the shortest time was selected. For such experiments Taylor selected an exceptionally strong man and, through increased remuneration, stimulated him to increase his efforts. 30

Frank Gilbreth also employed this method. The result was an underestimated standard of time for doing the task. According to the techniques they used, the total of the shortest times for performing each movement, plus a percentage for the unavoidable delay and a percentage of allowance for the average worker, determined the standard time for performing the job. 31 These percentages depended more or less on guessing on the part of time-study experts. 32 Although Taylor criticized the old type of management for its dependence on guess work, he himself used it in his time-study experiments. Stagner reported that in some cases time-study men set standards for the same job which were widely apart sometimes as much as 100 per cent. 33 Such differences would not


have appeared if time-study methods had not been so widely variable. Moreover, the sample Taylor and his colleagues used in their studies did not perfectly represent the whole. This limitation made the results they obtained of little value. The results could have been more realistic if time studies had been taken directly on average workers. 34

Moreover, if an operation is minutely broken down into its elements, the time corresponding to each of these elements will not always be useful. Then, too, an identical period of idle time from one operation to another is difficult to achieve. 35

Although there are several weaknesses in time study, its usefulness is not denied. Since no other alternative method of measuring a fair day's work have appeared, time-study methods must be utilized until a better technique is found. 36

Inability to Determine Fair Day's Wage

Taylor made no actual contribution to an understanding of what consists of a fair day's wage. Although he gave the matter a considerable amount of attention, he did not use any scientific method to determine what was a fair day's wage. All he did in this respect was to make


35 Friedmann, op. cit., p. 53.

several studies to try to determine the efficient wage that motivated the workers to produce the amount of work he thought constituted a fair day's work. Such a statement as "By high wage the writer (Taylor) means wages which are high only with relation to the average of the class to which the man belongs and which are paid only to those who do much more or better work than the average of their class," shows that he was simply a bargainer in this matter.

While time study was accepted by most early scientific management people as a tool for determining what was a fair day's work, they could not agree on a scientific incentive system for rewarding workers with a fair day's wage. As a result there were many incentive systems, each differing from one to another, in the amount of pay for the same amount of work.

Tended to be Autocratic

It was Taylor's philosophy that management should have all authority to determine regulations and make decisions. These regulations and decisions were dependent upon what management thought was fair for workers. Since there is no assurance for workers that management looks to the workers' interests as much as to its own, and since

37 Taylor, Shop Management, p. 27.


workers are merely obliged to follow such regulations, scientific management tends to be autocratic rather than democratic in dealing with workers.

Although Taylor claimed that scientific management gives a voice to both management and workers and that workers have considerable freedom to develop and express themselves for the new systems, he said also that those who could not work according to specified regulations should be discharged. He said that workers would first have to accept his methods and, after learning the methods well, could suggest any improvement they thought might increase production or decrease fatigue. On the other hand, he kept his workers so busy all the time by assigning them large tasks that it was almost impossible for them to concentrate their thinking toward developing better methods. Moreover, forcing a worker to accept a new system and preventing him from introducing any changes in it for a period of time might kill his interest toward improving his work.

Taylor recognized the existence of unions. On the other hand he,
as well as his colleagues, indirectly ignored union representatives and were against union interference in the relationship between management and workers. Taylor not only disfavored applying his differential rate system on union members, but was also against employing union members in his work. Neither Taylor nor any one of his followers met union representatives at a bargaining table. Taylor claimed that scientific management made collective bargaining an unnecessary practice. He and his followers claimed that workers were automatically protected by the self interest of management.

Scientific management tended to prevent the formulation of groups of workers with recognized common interests within the shop. Therefore, scientific management actually aimed to weaken the power of the labor force by dealing with it separately, taking advantage of the fact that individual workers were helpless. One man has little or no influence in determining the working policies of a concern.

Taylor admitted the importance of collective bargaining in his testimony before the Special House Committee, and he maintained that it could be carried on under scientific management systems. It

46 Drury, op. cit., p. 216.
48 Hoxie, op. cit., p. 104.
49 Taylor's Testimony Before the Special House Committee, p. 151.
appears however, that what he meant by this statement was that bar­
gaining would have to be carried on under the regulations and rules
already developed by management. In other words union representa­
tives had to accept the scientific management regulations and principles
as limiting bargaining with management. Thus, Taylor did not give
union representatives any practical chance to discuss the fundamental
principles or techniques of scientific management, and reserved the
right to refuse acceptance of ideas that proved that such principles or
techniques were not adequate. On the contrary, industrial engineers
claimed that union functions should be limited only to the educational
and welfare work among their members. The engineers opposed union
interference in such matters as wages, hours, and the like. As a
consequence they tried to keep unions from performing their major
function, i.e., bargaining on job terms.

Wages Considered as Almost the Sole Motivational Factor

Industrial engineers were very well aware of the importance of
motivational factors. The major problem they faced was how to use
these forces. The engineers thought they could be released through
financial incentives and their assumption was that payment was the only

50 F. B. Copley, Frederick W. Taylor, Father of Scientific
Management Volume II (New York: Harper & Brothers Publishers,

51 Gomberg, op. cit., p. 126.
way to make workers want to work. They believed that the higher wages workers received, the more output they would give. In Taylor's differential piece rate, two rates were in effect, a low rate per unit for workers who produced less than the required standard and a high rate for those who exceeded the standard amount. Therefore, this system amounted to a punishment for those who fell short of the standards; at the same time the system rewarded those who produced more than the quota, the reward being a higher income than they could get under the ordinary piece rate system.

Under most incentive payment plans the difference between the income of a good worker and that of a poor worker is so great that the poor worker has to improve himself or quit his job. However, recent studies show that financial incentives only are not enough to release motivating force. Applying financial incentives alone is relatively ineffective in the long run, although it might be of considerable effect on the worker's morale in the short run.

Lacked Humanitarian Attitude in its Procedures

It has been claimed that scientific management tended to ignore the human element in production and regard workers as machines. This claim is true in the sense that industrial engineers assumed that

the relationship between management and workers was merely a contractual obligation which gave management the right to command and put an obligation on workers to obey.

On the other hand, it was recognized that the human element was the most costly element in production. The engineers tried to raise the standard of living through an increase in the efficiency of the human factor. Taylor's basic principles of management emphasized the importance of the human force in industry and gave recognition to labor's requirements of reasonable wages and good working conditions, and he was careful to see that sufficient rest periods were introduced into the day's work. He is considered as one of the first investigators of the effect of rest periods of varying lengths. Although he recognized the importance of workers attitudes and the value of some factors of motivation, he did not form his system in such a way as to place effective emphasis upon these factors.

Likewise, Frank Gilbreth considered the human importance when he decreased the daily working hours from ten to eight, and gave a considerable attention to improved working conditions.

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55 Muscio, op. cit., p. 49.
Taylor attempted to be fair in his relationship with workers. He claimed that he never punished any worker without good reason, or cut their wage rates after they were set according to his scientific studies. However, humanity is more than kindness or fairness, according to the social scientists. It is the study of workers’ attitudes, their aims in life, their social and economic problems, and the means to satisfy workers in these respects.

As a matter of fact, some industrial engineers recognized the effect of morale factors other than the financial ones. Gantt took into account the importance of morale and the utilization of nonfinancial rewards to promote it. He always gave much consideration to labor problems and the viewpoint of labor. Moreover, he believed that management should be responsible for creating an environment that had a favorable psychological effect on workers.

The record shows that the claim that industrial engineers treated workers as machines rather than as individuals through their scientific management procedures is misleading. The engineers were human in some phases in their relationship with workers. In other phases, however, it is obvious that they tended to assume an "inhuman" viewpoint.

57 Lundy, op. cit., p. 25.
58 McFarland, op. cit., p. 29.
AN EVALUATION OF THE PHILOSOPHY OF SCIENTIFIC MANAGEMENT

The principle objective of industrial engineers in their new philosophy was not to increase the efforts of workers as was formerly believed, but on the contrary, to reduce the efforts and to make the work easier. Seeking a fundamental aim of waste elimination, the industrial engineers had a primary purpose of conservation and savings.

Prior to scientific management many systems appeared in an attempt to solve personnel problems, but most of the systems failed to give satisfactory results because of their lack of consideration of the fundamental facts of human nature and of industry. Managers and workers thought that the only practical means for settling the industrial disputes were strikes, lockouts, and temporary compromises, even though both groups recognized that these expedients were wasteful and costly. When scientific management was understood by both sides, managers and workers started to believe that all their problems could be solved and logical results could be obtained if problem solutions were based on facts.

Industrial engineers tried to give the workers a higher motive to increase their output by increasing rather than decreasing wages. Their philosophy had great effect on worker output. At that time, workers experienced the consequences of both low financial incentives and a lack of nonfinancial incentives. In fact an increase wage in itself at that time
was in many cases a sufficient motive for workers to increase their productive efforts. It is true, therefore, that the methods, techniques, and procedures of scientific management has actually raised the standard of living of the workers as well as that of society as a whole. Yiteles has reported that the productivity of the average worker in Taylor's generation increased two and three times, and in some cases four times, over the output of the average worker in the generations preceding scientific management. Although a part of his increase in productivity was due to the improvements in technology, a considerable part was certainly due to the application of the principles of scientific management. For instance, in spite of the fact that workers used the same tools in Midvale Steel Company under Taylor management, the application of new systems caused their output to increase almost two and one half times.

Scientific management principles demonstrated that the philosophies, attitudes, and thoughts of management until Taylor's time were grossly substandard. The new approach was based on objective assessments of facts rather than on guesswork.

Scientific management people developed the idea of time and motion study which was not known before their work. Although many details of Taylor and Gilbreth's methods concerning time and motion

59 Viteles, op. cit., p. 16.
study may hold nothing more than historical interest at the present time, their central philosophy of the importance of the scientific approach to management lives on.

An important result of scientific management is the development of objective standards to apply to all phases of management, and management recognition of the importance of research studies in the field of personnel administration.

Scientific management developed the idea of giving adequate attention to working conditions as they related to the health and well being of workers. A variety of research interests arose. An important subject for research involved the determination of health standards to be required for each class of work. Putting every worker in the right job, plus satisfactory conditions of work, reduced labor turnover and decreased the accident rate.

Job analysis was developed as a direct result of the scientific management approach. Personnel administration began studying the different jobs in the organization. Personnel administrators would analyze and grade the jobs according to their nature, the amount of training required of the worker, labor costs of living, and wage scales of other plants which used the same labor market as a source for their working forces. Out of job analysis grew job descriptions which are fundamental to the operation of a personnel department. Job descriptions are useful to personnel administrators in filling vacancies, to foremen
and workers in knowing their duties and responsibilities, and to
management in designing promoting charts.

Another result of scientific management was higher earnings for
both skilled and unskilled workers. It raised wages for skilled workers
by opening for them more opportunities for advancement and promotions,
and for unskilled workers by enabling them to do work formerly done by
skilled class only.

Scientific management began the development of a spirit of coopera­
tion and friendliness between management and workers. The men were
not as disgruntled as they had been under the old form of management.
It also promoted a feeling of security and a confidence in management.
Such confidence is very important in obtaining the cooperation of workers.

Scientific management led to a more equal division of responsibility
between management and workers than that which existed under any of the
previous types of management. The principles of scientific manage­
ment changed the general attitude toward the management position and
assigned the position with a much larger share of responsibilities and
new duties that had previously been unknown. As a result, management
took over all the responsibility for planning and controlling the work.
Almost every act of the worker was preceded by one or more prepara­
tory acts by management, whereas previously almost all the work and
the greater part of the responsibility were thrown upon men who could
not do the work as it should be done.
The industrial engineers failed to convert management to a science depending only on scientific studies. The question of whether or not scientific management was actually "scientific" depends upon whether or not it actually discovered some means by which the production process would be reduced to a basis of exact, objective laws. Because the production process depends upon both the mechanical and human factors the answer differs from one factor to another. With respect to the mechanical factor scientific management appears to have discovered and established the objective laws which underline the most efficient mechanical arrangements. 60 As for the human factor, scientific management did not establish any definite laws. Therefore, management is not an exact science, and cannot be, because human reactions are dynamic rather than static. Business conditions are always changeable from one time to another, and no certain formulas or exact laws can be applied in all cases at every time. Management, until the present time, is an art or a philosophy which depends upon the judgment of the people at the management level more than the results of experiments and research. 61

Moreover, such an emphasis upon the individual worker prevented


the scientific management people from recognizing the importance of
the informal organization in the shop. Such an informal organization
is regarded at the present time as the key to the understanding of
industrial relations. In the Western Electric studies, it was found that
workers had developed an informal organization which differed from the
formal one. This informal organization exercised an important in-
fluence on the behavior of the worker, often effectively countermanding
the official orders of the formal organization.

In almost all instances capital has received the highest share of
the extra profits resulting from the increase in the workers' production,
even though the share of profit distributed to the workers has often led
to a large increase in their daily wages. This led union leaders to con-
clude that the primary purpose of scientific management was to increase
profits for management rather than to distribute profits in a fair way
among management, workers, and society, as Taylor claimed.

Therefore, the charges of union leaders against scientific management
are true to a certain degree. Although Taylor's methods increased the
workers' output by 269 per cent, the increase in wages was only 60 per
cent. There is no evidence that he gave society its share of profits

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62 Diebold, op. cit., p. 27.
64 Copley, op. cit., p. 51.
through low prices, which implies that he kept the rest of the profits for the employer. Therefore, it seems that the immediate effect of his system was primarily to increase the profits of capital. However, it is true that scientific management leads to high wages, high profits, and low prices if it is applied in industry on a large scale.

Finally, the acceptance of psychology in industry is an indication that scientific management was not sufficient in itself to meet the demands of an industrial civilization. While Taylor did not put much emphasis upon the importance of psychology in industry, there are others such as Lillian Gilbreth who recognized psychology as a great factor in the efficiency of workers. This led some writers to believe that the first work in industrial psychology was performed by industrial engineers and not by professional psychologists. Actually, time, fatigue, and motion studies are based on several psychological principles, but Taylor and his colleagues failed to submit to experimental analysis the motivating factors, which are present in man, that influence his effectiveness in work. At the same time Taylor did not give consideration to any experimental study of the nature of the skill which he primarily concerned himself. For these reasons the contributions of industrial engineers to the procedures of psychology as applied to industry are very slight. However, Taylor's emphasis on the human

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66 Viteles, op. cit., p. 16.
factor was extremely influential in preparing the ground for later industrial psychology studies. His work, and the work of the other pioneers was of considerable influence in the development of industrial psychology in two directions. First, industrial psychology was given the chance to make the required research in industry on the ground that it helped scientific management to achieve its goals. Second, the thoughts, approaches and opinions of industrial engineers have both directly and indirectly affected the scope of objectives of industrial psychology.

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SUMMARY AND CONCLUSION

Although the general philosophy of scientific management appeared to improve labor-management relations, its underlying philosophy had extremely dangerous ramifications. On the other hand, the over-all contribution of scientific management to personnel administration was great. Its influence has been enlarged and extended, and those who specialize in the field of personnel administration rely heavily upon the principles, philosophies, and techniques that were used or mentioned by Taylor and his colleagues.

In conclusion, serious problems and adverse effects appeared as a result of applying scientific management in industry. Some of these problems were due to poor and nonscientific selection methods.

Others were related to the adverse effects of psychological fatigue on workers. Still other problems can be traced to the changes in attitudes and opinions of workers, management, and government toward each other. The balance of this study is devoted to a discussion of these problems.
CHAPTER III

THE MOVEMENT OF INDUSTRIAL PSYCHOLOGY AND
ITS CONTRIBUTION TO SELECTION PROBLEM

As a science psychology is relatively new. The beginning of research in this field dates from 1879, when William Wundt at the University of Leipzig, Germany, established the first laboratory of experimental psychology which was especially devoted to the scientific study of human behavior. During these early years, people were studied in laboratories rather than in their working places. Interests in personnel problems were founded in early psychological experiments. The work of J. E. Marey in 1878, A. Masso in 1888, J. Ioteyko in 1904, and A. Imbert in 1907, in fatigue and its effect on efficiency of workers, are some examples of these early experiments. Thus, although every branch of psychology is young, industrial psychology is one of the youngest.

Wundt gave the most complete expression of his time to the scientific force that was remaking psychology. His influence was exercised not only in Germany, but also indirectly its influence was felt in other industrial countries through his students who carried back to their homelands his methods and views. These methods and views

affected the development of industrial psychology in those countries.

In the United States Hugo Münsterberg, a former student of Wundt, is recognized by many writers as the founder of modern industrial psychology. He is considered as the first psychologist who took the psychological techniques out of the laboratory and applied them in offices and workshops. His work and approach is a marked advance in the field of applied psychology. No actual attention was given by management to the value of psychology in personnel problems before his work. James McKeen Cattell, a product of the Leipzig laboratory, founded the Psychological Corporation in 1921. It is the oldest and largest consulting organization which serves as an agency for bringing business and industrial leaders in contact with authorized experts in psychology.2

In this country the growth of industrial psychology is largely the product of the research centers at the universities which have found in industry a laboratory for their research studies.3 In 1915 the first division of research in applied psychology in an American university was founded at the Carnegie Institute of Technology, under the direction of Professor Walter V. Bingham. This center did some elementary studies


of the effect of psychology on personnel behavior and vocational guidance.\(^4\) Research centers at other universities were rapidly increasing in number during and after World War II.

Although the growth of industrial psychology in the United States was largely the product of individual initiative, its development has been furthered by a few organizations established for the purposes of cooperative research, coordination of studies, and the exchange of information in this field. Consulting on problems of a psychological nature is big business, and has advanced rapidly, especially since World War I.

**THE VOCATIONAL GUIDANCE MOVEMENT**

In addition to the influence of scientific management on industrial psychology, another movement is believed to have helped its rise. At the time this movement was founded it had nothing to do with industrial psychology, yet it led to the need for psychological analysis in industry. This movement is the vocational guidance movement.\(^5\)

Vocational guidance is the process of directing young people to find their occupation, profession, trade or business by enabling them to analyze their aptitudes, abilities, resources, and limitations. Its

\(^4\)Ibid., p. 5.

necessity arises primarily from the complexity and the actual conditions of specialization in modern industry. The same conditions that created the employment problem has also resulted in a demand for vocational guidance.  

It is difficult to trace the beginning of vocational guidance. However, Frank Parson is acknowledged as founder of the scientific vocational guidance movement, although he was never a psychologist but a mathematician and engineer. He did not meet Taylor, but the two recognized that misplacing workers was the main problem from which industry suffered. The two, however, differed in their approach in solving this problem. While Taylor dismissed those whom he thought were misplaced, Parson tried to study and analyze the abilities of each individual to guide him in his best vocation. Parson, in his work, did not think of improving the human element in industry as much as improving the human life itself. His work was indirectly of great value to the labor force in industry.

The system he used was a questionnaire, not a test. Although it covered a wide range of information and knowledge, little scientific information could be obtained from it, since the whole system depended upon the ability of the individual to analyze himself by means of self

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In reality Parson did not analyze people, as one is led to believe from reading his book for the first time; rather he encouraged his clients to analyze themselves. Moreover, some of the questions used in the system are very difficult to answer, even with the help of the counselor, since they are either too elastic and not clear, or need a great imagination as well as a considerable knowledge of psychology on the part of the applicant. Since most of the applicants are young people between 16 and 19 years of age, it is doubtful if answers of important value could be obtained from such a system.

Parson's system could be called self guidance rather than vocational guidance. Another criticism that could be levied against his system is that Parson was too dogmatic in that which he told the individuals who consulted him, in spite of the fact that a self analysis plan depends upon invalid psychological principles. A third criticism is the fact that he placed considerable value on the physical appearance of the applicant in his decisions, which involved injustice to and misjudging of men. Finally, the scope of his work is limited and the placement, the follow-up work, and guidance accompanying employment are not vital parts of his plan.

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10 Ibid., p. 23.
IMPORTANCE OF PSYCHOLOGISTS' CONTRIBUTIONS TO INDUSTRY

The importance of industrial psychology to management is considerable. First, it is an aid to management in getting the maximum use of personnel by utilizing psychological knowledge in selecting workers on the basis of natural fitness and by determining the environmental conditions under which the greatest and most satisfactory output can be obtained. Second, it is closely related to the causes of industrial unrest associated with such factors as absenteeism, excessive labor turnover, grievances, lockouts, strikes, and picketing. Third, since seniority is the primary criterion used when layoffs must be made it is of great importance to management to make sure that every worker is a satisfactory one before the worker begins to accumulate seniority. Fourth, industrial psychology is a means of encouraging and promoting democracy in industry and thereby enhancing the satisfaction of employers and employees.

The contributions of industrial psychologists to personnel problem fall mostly within two general phases. The first is the selection problem, which necessitates several techniques for measuring the applicant's


capacity and ability. The second is the development of industrial efficiency. This second phase includes eliminating unnecessary fatigue and monotony, arranging environmental conditions that are psychologically favorable, and promoting satisfaction and morale.¹³

**EVALUATION OF THE PSYCHOLOGISTS’ WORK TO THE SELECTION PROBLEM**

Improvements in selection techniques constitute the most important contributions of psychologists to personnel administration. The contributions of industrial psychologists to the selection problem is far greater than that of industrial engineers. The industrial psychologist's approach to the problem is to study the worker's ability, aptitude, character, and personality before putting him on the job. While the industrial engineers tried to solve this problem in a negative way,¹⁴ the psychologists obtained considerable success in this respect in a more positive way through their studies in differential psychology, interviews and tests.

**Significance of Individual Differences in Industry**

Each individual represents a combination of superior, average,


¹⁴This was attempted by putting the worker on the job as a method for studying his ability and capacity. Actually it is the only way to know the real ability of a person and his suitability for a certain job, but it is an expensive and time consuming process.
and inferior traits. The same job may be of great satisfaction to one, monotonous to another, and beyond the capacity of a third. Since each individual is usually more satisfied when he finds an outlet for the abilities and energies he may possess, and if the job requires abilities that he does not possess and cannot develop, failure in performing this job will usually result. On the other hand, if the job calls for only a part of this energy, the extra energy not used in the job is usually released into some other channel, and usually goes in a direction that fails to benefit either the employer or the employee himself. This makes individual differences the major problem around which most of the psychological research is concerned.

Thoughtful persons in all periods of history have been confronted with the fact of individual differences. The ancient philosophers as well as those of the present century recognized its existence. There are two theories concerning this subject. The first holds that the potentialities for almost unlimited development resides in every human. The differences in individual traits are derived from the differences in the individual's background, and it assumes that differences between individuals disappear by providing opportunities for them to develop themselves. It fails, however, to interpret the reason why differences are still found among individuals, even if they are given the same

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15 Tiffin, op. cit., p. 8.
opportunities. 16

The second theory assumes that differences between men are natural facts that cannot be ignored. Plato discussed this problem in the Republic clearly believed in this theory when he said that no two persons are born exactly the same, but each differs from the other in natural endowment. 17 However, neither of these theories relating to human individuality can be proved or disproved. 18

Most of the early experimental psychologists were primarily interested in discovering general laws of human nature which would hold for every individual. Since the individual differences were an obstacle in discovering such laws, the researchers tended either to ignore these differences or to regard them in the nature of experimental errors. The rise of experimental psychology delayed the study of individual differences and shifted the efforts away from studying it rather than towards it. Its only contribution to the development of a differential psychology is to be found in its demonstration that psychological phenomena are amenable to objective and even quantitative investigation, that psychological theories can be tested by actual data, and


18 Tyler, op. cit., p. 7.
that psychology could become an empirical science. Such steps were required before theories about the individual could be replaced by studies of individual differences.\(^{19}\)

The analysis of any problem of human behavior in industry leads to a consideration of individual differences, and raises the question of how and why individuals differ. In spite of the same incentives, the same working conditions, the same machines, and the same training programs, workers differ in their productivity. Individual differences in production are large enough that they cause serious differences in overhead expenses and capital investments. David Wechsler concluded that the limits of most human traits may be approximately expressed by the ratio of two to one; in other words, the most efficient operator produces more than twice as much as the least efficient one.\(^{20}\) Other studies done by Clark L. Hull resulted in conclusions similar to those obtained by Wechsler. However, he concluded that among individuals ordinarily regarded as normal, in the average vocation, the most gifted will be between three and four times as productive as the poorest.\(^{21}\) He based his conclusion on the fact that extremely poor workers do not continue on the job.

It is almost impossible to make people identical in their capacity

\(^{19}\)Anastasi, op. cit., p. 11.

\(^{20}\)D. Wechsler, The Range of Human Capacities (Baltimore: The Williams & Wilkins Co.), p. 54.

and productivity and to remove their individual differences. In any given type of activity, most persons tend to be of medium ability or aptitude. From this middle ability, the number of individuals at each step gradually diminish toward the extremes of great and small ability. Finally, a point is reached beyond which no persons at all are found. \(^{22}\)

However, training may have most effect upon these individual differences. It increases the differences in the fairly complicated tasks, decreases them in the simple ones or does not affect them; but it always increases the magnitude of individual differences. \(^{23}\) Whatever, may be the effect of training on the magnitude of individual differences, it seems clear that training seldom changes the relative standing of individuals in their ability to perform any given task. Therefore, industry should not expect training programs to bring all workers up to the same high level of efficient performance, and since perfect predictors of job success have not yet been devised, individual differences in employee performance will still be found, even if every effort is made to select only those who are most likely to succeed.

**Evaluation of the Importance of Interviewing**

Although the interview is widely used by the majority of firms as


an important step in their employment procedures, it is nevertheless one of the least scientific of several available personnel selection methods. Even in the hands of the experts, the interview has been shown repeatedly to be very undependable with low reliability and little assurance of validity and utility, and it does not differentiate with sufficient accuracy individuals with high potential from those with low potential.

Taylor used the interview method as the sole selection tool in his employment procedures, but the objective he sought from such an interview was completely different from the objective of industrial psychologists. Taylor's purpose in interviewing the individual was to determine whether the worker was willing to cooperate with the new system and was ready to obey the orders. The psychologists, on the other hand, used it as a way to study the behavior and character of the applicant. Actually the interview as used by Taylor was not part of an employment procedure, and in reality it should not be called an employment interview.

The interview is based on the assumption that the impression the interviewer gets from the interview represents a good sample of the character and personality of the interviewee on which an evaluation for his ability to hold a certain job could be made. Since the behavior of

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the individual changes from day to day, and even from hour to hour, producing marked differences in his ability to perform, this first impression in many cases does not represent the real facts about the ability of the individual. Thus the interview may produce variations that result in a non-representative performance and an inaccurate assessment of the interviewee's abilities and personality traits. Moreover, judging individuals by appearance and physical features plays an important part in the interview regardless of its unreliability. The observation method is extremely dangerous and inadequate in cases where the estimation involves high positions. However, this method is likely to be successful for the jobs that depend largely upon the impression which the applicant can make in a short interview.

No actual scientific rules or principles were developed for the interview process. Its result depends to a great degree upon the personal judgment of the interviewer himself. It is difficult to find interviewers that agree on one decision as to the same applicant, even if they agree on the characteristics required in the applicant, to hold the job and the relative importance of each trait. Well selected and highly trained interviewers may overcome to a certain degree this weakness. However, although they might have the same training


26 Moore and Hartmann, op. cit., p. 122.

programs, the same educational standard, the same background and the same instructions, still they differ in their personal judgment of the same thing.

It is important to know the emotions of the workers; however, the interview may fail wholly or in part by misjudging certain factors such as the applicants ability to get along with people, his dependability, honesty, loyalty, persistence, and others. Therefore the interview is not of a great value to personnel administration in the selection process.

**Evaluation of Tests as an Employment Procedure**

The psychologists' greatest practical contribution to personnel administration has been the development of tests as an aid in selection. In fact, more work has been done in psychological testing than in any other area of industrial psychology, but testing is by no means the whole of scientific selection, nor are tests to be thought of as an alternative to other selection methods. In contrast to the interview, little personal judgment is involved in the tests and the only measurement of the ability of the applicant is his actual performance in the test itself.

Employment tests are a product of practical industrial needs quite as definitely as they are a natural outgrowth of the psychological study of the abilities of the individuals. These two sets of forces have worked together in the stimulation and shaping of psychological tests for
It is now more than half a century since tests were first devised and used in psychological laboratories. Investigations like those of E. L. Thorndike on fatigue in 1900, and by R. S. Woodworth on transfer effects of training which was published in the following year, were based on tests of a kind that have been of great value in analytical investigations of intelligence and in group comparisons. But the first really influential suggestion toward utilizing tests in industry came from Munsterberg in 1913. Actually his experiments were designed to show a method rather than a result; in fact, they have never been adapted to commercial life. Since that time the use of tests in industry has increased greatly.

Great emphasis was placed on psychological tests, and significant contributions in this field were made during and after both World Wars. The pressing need for maximum utilization of manpower in the shortest possible time made the value of psychological testing and other psychological devices apparent. During World War I, a number of results were obtained in the army with the Army Alpha and Beta tests,


30 Brewer, op. cit., p. 156.
both of which are now used in industry in the selection procedure. During World War II, the Army General Classification tests were developed and after the war they were published for industrial use.

The now familiar term "mental tests" was first used by Cattell in 1890. He followed Francis Galton in combining physical with mental tests, but he went further in the method than Galton had done; he emphasized the necessity of standardization of the procedure in the administration of the tests in order to secure strictly comparable results.

A major development in the measurement of human efficiency was the intelligence tests originated by Alfred Binet from 1905 to 1911. The Binet tests were an advancement over previous tests in that they were intended to measure general intelligence, whereas the others had measured separate functions of the nervous system.

Each job involves a pattern of abilities and traits which varies from one job to another, and since these abilities are not only numerous but also varied in kind, and since some of them depend upon experience while others depend on good development and heredity, different types of tests were developed for unskilled, semi-skilled, and skilled workers. In general, tests may be subdivided into five basic types: intelligence, aptitude, trade, personality, and interest tests. The development and use of tests in industry is widespread at the present time.

\[31\text{Peterson, op. cit., p. 78.}\]
\[32\text{Ibid., p. 78.}\]
Psychological tests are based on the assumption that they give a random sample for the real behavior of the individual and that the sample measured is sufficient to predict the most usual or typical functioning of the applicant in the future. Regardless of the fact that tests are carefully organized and well designed, they cannot be used as accurate measuring devices for intelligence, aptitude, interest, or personality because individuals differ in their mental and physical ability from time to time. Furthermore, in many instances, the score for the same person on different tests, or even on the same tests, have varied from mediocrity to superiority over a period of time. These results indicate that the important factors that affect the score of tests cannot be accurately controlled or measured. They also indicate why it is usual to find that psychological testing correlates imperfectly with job success. However, in spite of the fact that these correlations are very low, this relationship is nevertheless useful, for even such slight help in predicting success is worth the effort and cost of giving tests.

All these factors cause tests to be less than complete measurements of individuals' abilities. However, to the present time the test is the most important measurement tool used to make comparison

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between people and judge their abilities, even if there is a considerable error in the results obtained through testing. Actually, testing's greatest danger is in being oversold. However, experiments show that tests are less subject to error and less misleading than the traditional methods of judging the applicant through the application blank, letter of recommendation, school records, and so forth, which are low in reliability and objectivity. Since tests do not solve completely the personnel selection problem, but only make it possible to eliminate the percentage of those who are bound to fail, their value in this sense is a negative one.\(^\text{34}\)

The very serious weakness in using psychological tests is revealed in the test's inadequacy to discover the morale, and emotional quantities of the individual. Since tests are not accurate for measurement of such factors, they do not provide an infallible method for selection. On the other hand, the use of tests possibly help developing the desired moral qualities and a mean of preventing their exhaustion. If an individual succeeds at his work within a reasonable length of time, he is likely to maintain these qualities. If he fails, he may gradually lose them. His moral resistance and energy may be exhausted by the difficulty and unfitness of the work to which he was assigned, whereas the opposite may be true where he is assigned to

work which he is capable of doing perfectly.

In conclusion, psychological tests have little value to personnel administration in determining individual motivation. Moreover, although psychologists have developed a technique to determine which of two men is better able at a given time to perform a new task, they have no technique for determining which of the two men would finally become the better worker at the task, or for determining in what task any man would reach his greatest development. 35

SUMMARY AND CONCLUSION

On the basis of information brought out in this chapter a general observation can be made that industrial psychologists, through the development of interview and test techniques, have made a contribution toward the improvement of the selection procedure. These techniques comprise the major means of selection in industry at the present time by the more progressive companies. Even with their inadequacies, they provide management with a better means of selection than that which was available in the past.

CHAPTER IV

EFFECTS OF PSYCHOLOGICAL FATIGUE ON WORKERS' PRODUCTIVITY AND ACCIDENT RATE

It was stated in Chapter II that during the "Scientific Management" period the industrial engineers put most of their emphasis on developing methods to reduce the physiological fatigue of workers. That action, from their point of view, was due primarily to the general character of industry. At that time production depended to a considerable degree on the physical efforts of labor. However, the status of industry at the present time differs from that of the past. The amount of output is no longer fully dependent on the physical factor; it now depends upon the ability of the workers and the effectiveness of their work. This latter factor depends upon the workers' "will to work," which, in turn depends upon physiological and psychological fatigue. In this chapter, the effects of psychological fatigue on workers' productivity and accident rate is discussed.

PHYSIOLOGICAL FATIGUE HAS LITTLE EFFECT UPON PRODUCTIVITY

The curve of output differs completely at the present time from what it was 40 years ago. In 1919, Lee presented a curve (See Figure 1,
FIGURE 1

THE CURVE OF OUTPUT IN INDUSTRY IN THE 1920's

page 67) which he assumed was a typical curve of output at that time. This curve showed a steady increase in output until it reached its maximum, then it decreased until the end of the morning period. The curve of the afternoon period took almost the same shape as that of the morning period except that it was at a lower level. Since the output rate decreased at the end of both periods, and since the decrease was greater in the afternoon than in the morning, it could be interpreted that physiological fatigue affected the rate of output. However, there is no evidence fully to support this trend: this reduction could be attributable to forces other than physiological fatigue.

At the present time the shape of the output curve is entirely different. In 1949, Barnes presented a curve (See Figure 2, page 69) which he assumed was a typical curve for the output in modern industry. This curve showed a fairly uniform output throughout the day. This uniformity was due to the fact that mechanization had become the general characteristic of industry, and that the worker did not use as much of his physical energy as he used in the past. Stegemerten took this same approach and stated in 1935 that the physical requirements of a task at that time were very small. He pointed out that it

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FIGURE 2

THE CURVE OF OUTPUT IN INDUSTRY AT THE PRESENT TIME

was entirely possible for an operator to maintain a steady output for the entire day. Moreover, the National Research Council, through a research on physiological and psychological comfort in industry in 1937, concluded that physiological fatigue was not of serious importance in American industry. Similarly, the Hawthorne studies showed that the productivity of the workers continued upward in spite of the fact that the workers worked for eight hours a day without any rest period.

These findings support the conclusion that physiological fatigue has little effect upon the productivity of workers in modern industry. Physiological fatigue does occasionally occur in industry at the present time. However, while physiological fatigue was one of the prime problems that faced industry in the past, psychological fatigue now represents the main problem in industry; that is, there has been a shift from physical fatigue to one of a neural type.

Psychologists have given little attention to psychological fatigue

The majority of the psychologists' work in this field, however, has been devoted to the study of physiological fatigue. Very little

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attention or research has been given to an exploration of psychological fatigue.

Psychological fatigue has been neglected for two reasons. First, the majority of psychologists were influenced by the behavioristic theory and regarded this problem as an unscientific one. Secondly, there has been a lack of fundamental research on the problem as to whether or not the individual himself can reliably and quantitatively evaluate his tiredness on a single scale.

Although psychologists have written many books and articles on industrial psychology, they have differed in the amount of space devoted to psychological fatigue. They differed also in their approach in dealing with the subject. Some of the books contain a few chapters on fatigue while others do not even mention it. Briefly, the subject is not well studied to the present time, and there is little acceptable knowledge as to the causes, the nature, and the effects of fatigue.

THE NATURE OF FATIGUE

Investigators working in this area are in wide disagreement as to the nature of psychological fatigue. However, it is, in general, an individual matter which differs from one person to another, and from one time to another for the same person because of its psychological nature.

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Lowry, Maynard, and Stegemerten stated that no attempt had
been made to analyze the nature of fatigue. Mayo admitted that it
was difficult to explain the nature of fatigue, yet he added that it was
a well recognized condition. Moore took the same position when he
stated that no one knew what fatigue was and that it was only recognized
by its symptoms. It appears that these authorities were referring to
physiological rather than psychological fatigue. The reason for this
approach in explaining their statements is that it is easy to recognize
the physiological fatigue, but difficult to know when a person is attacked
by psychological fatigue. Even the individual himself does not always
realize it immediately.

Almost 30 years ago Myers concluded that fatigue was complex in
its nature and complex in its character. He further concluded that there
was a general ignorance as to its full nature and that it was impossible
to distinguish between lower and higher fatigue in the intact organism,
fatigue from inhibition, and to separate the fatigue of explosive acts from
that of maintaining attitudes. This statement is true up to the present
time. However, there still remains a lack of information on the subject.

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7 W. Gomberg, A Trade Union Analysis of Time Study (2nd. ed.;
8 Mayo, op. cit., p. 9.
9 H. Moore, Psychology for Business and Industry (2nd. ed.;
10 Mayo, op. cit., p. 8.
This confusion about the nature of fatigue led Gomberg to conclude "... exactly what is fatigue, its nature, how it should be measured, and on what basis it should be made were left to the reader's imagination."\(^{11}\)

**A SATISFACTORY DEFINITION FOR FATIGUE HAS NOT BEEN DEVELOPED**

It has been difficult for scientists to agree upon a common meaning of the term "fatigue." Agreement as to the meaning of the term would put their research on a more straightforward meaningful basis.\(^{12}\)

Myers admitted that it was most difficult to define industrial fatigue.\(^{13}\) On the other hand, Muscio defined it as a condition caused by activity in which output produced by that activity tended to be relatively poor, and the degree of fatigue tended to vary directly with the progress of output.\(^{14}\) However, this definition is unsatisfactory for two reasons. First, fatigue can never be measured directly; it is a condition which must be inferred from diminished capacity. Diminished capacity must, in turn, be inferred from diminished output. Secondly, the

\(^{11}\)Gomberg, op. cit., p. 97.


\(^{13}\)Mayo, op. cit., p. 8.

\(^{14}\)B. Muscio, "Is a Fatigue Test Possible?" The British Journal of Psychology, XII (1921-22) Part 1, 45.
diminished output may be due to a variety of other influences as well as fatigue. This conclusion led Muscio to recommend as early as 1921 that the term "fatigue" be banished from precise scientific discussion, and consequently any attempt to obtain a fatigue test should be abandoned.\textsuperscript{15}

Ryan concluded that fatigue was not a definite thing but was made up of a variety of phenomena.\textsuperscript{16} At another point and time in his work he stated that fatigue was a blanket term for many different effects of work—all of those effects which were harmful or deleterious and which were a function of the duration and amount of effort, but which were recoverable through rest.\textsuperscript{17} Such a definition is too broad to be useful. Furthermore, there is a contrast between the conclusion that it is not likely that all types of fatigue can be handled by rest periods,\textsuperscript{18} and the conclusion of Mayo, who said that it is impossible to measure the psychological effect of rest pauses directly.\textsuperscript{19} Dill took the same approach as Ryan, stating that fatigue is not an entity but a convenient word

\textsuperscript{15}Ibid.,

\textsuperscript{16}T. A. Ryan, "Varieties of Fatigue," \textit{The American Journal of Psychology}, LVII (1944), 568.


\textsuperscript{19}Mayo, \textit{op. cit.}, p. 31.
to describe a variety of phenomena. Moore's comment was that this discussion was a convenient starting point for a study on the subject. Viteles did not try to define fatigue, although he devoted four chapters of discussion to the subject. On the other hand, Mayo suggested using the term "boredom" instead of "fatigue." However, since boredom is a state of mind, and since it refers to psychological fatigue, one gets the impression that Mayo tried to ignore completely physiological fatigue. It is believed, however, that this suggestion does not give a satisfactory solution for the definition problem of fatigue because of the great differences between the two terms.

In general fatigue, whether physiological or psychological, is a reduction in the efficiency and productivity of workers. While physiological fatigue is mostly muscular, psychological fatigue is an emotional response to a distasteful task.

DIFFERENCES BETWEEN FATIGUE AND BOREDOM

There are several differences between fatigue and boredom. First,
fatigue refers to both physiological and mental fatigue, while boredom refers only to mental fatigue. Second, physical fatigue involves a decreased capacity for work, while boredom involves a decreased interest in work. Third, physical fatigue is accompanied by a feeling of inability to perform, while boredom is accompanied by a feeling of disinterest and a desire to change to another activity. That is, boredom signifies that the employee is tired of the job rather than by it. Fourth, physical fatigue expresses itself in the form of a general decrement in the work curve, while boredom expresses itself in the form of irregularities in the work curve with intermittent spurts of short durations.

MEASURING FATIGUE

The disagreement as to an acceptable definition of the term fatigue resulted in another disagreement, that is, the method of measuring the phenomenon. Several tests have been developed to measure fatigue, but none of them are quite satisfactory.

Although Barnes did not give any definition of fatigue, he did say that it referred to a feeling of tiredness, physiological changes in the body, and a diminished capacity for doing work. Cathcart took this

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same approach. Although a person may feel tired, he may be able to work as efficiently as ever. However, he may feel normal, and yet be working at a low rate because of a psychological fatigue. Therefore, the logical conclusion is that the degree of feeling of tiredness is not a valid basis for the measurement of fatigue.

Florence stated that fatigue referred to the decrease in the human capacity to produce that accompanies increased production. But this statement does not appear to be reasonable since a decrease in the human capacity to produce should be accompanied by decrease in production, and not an increase.

In 1921, Muscio said that it was impossible to test fatigue. He was quite sure that no such test could be acceptable either in theory or for practical purposes because of the lack of agreement among authorities as to the nature and definition of fatigue. Similarly, Burtt, in 1929, stated that no reliable measure of fatigue had yet been developed. Cathcart supported this finding when he concluded that, in spite of the enormous amount of work which had been done on the subject, the degree

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28 Muscio, op. cit., p. 45.

of fatigue could not be measured. Viteles also concluded that fatigue could neither be scientifically isolated nor measured. He based his conclusion on the fact that tests represented indirect deductions rather than objective demonstrations and rationalization rather than scientific truth. Furthermore, Mayo stated that up until 1933 no test had been designed which would indicate the state of fatigue of any subject. Moore concluded in 1942 that there was no test to measure fatigue; furthermore, there was not likely to be one. He built his affirmation on the fact that no one knew enough about the full nature of fatigue to determine to what extent it was influenced by other forces.

In 1944, Bitterman suggested a new measure of fatigue that would overcome the interfering influences of motivation and other extraneous factors. He proposed the invention of a new measure—the ratio of performance to expended effort as an index of fatigue. However, Gomberg attacked this proposal. He stated that Bitterman did not make clear what his objective measure of effort would be and how it would be

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33 Moore, op. cit., p. 405.

34 M. E. Bitterman, "Fatigue Defined as Reduced Efficiency," The American Journal of Psychology LVII (1944), 469-473.
subjected to an experimental procedure. Maier stated in 1946 that the attitude of an individual was an important factor in the ability to work. He added that, up to that time, the presence of his attitude could not be deduced by any physiological measures.

No important development on the subject of fatigue measurement has occurred since these statements were published. It is believed, therefore, that, although these statements were written more than 15 years ago, they still describe the situation up to the present time.

On the other hand, most of the authors cited accepted the idea that measurement of fatigue in terms of reduced output was a possible solution to the problem. Muscio stated that the production curve had generally been accepted as the most satisfactory test of fatigue for determining the effect of methods and conditions of work upon the capacity to work. However, there is a general recognition that this criterion is inadequate. Excessive fatigue not only diminished output; it also increases the number of accidents, a situation which makes workers less efficient and less satisfied. But this does not mean that production and accident curves are adequate measures of fatigue. In

\[35 Gomberg, \textit{op. cit.}, p. 109.\]
fact, one cannot say definitely that a reduction in output is due to fatigue. The fact that the productivity of the worker reaches the lowest point during the last hour of the working day could be due to tiredness and physiological fatigue. It also could be due to factors other than fatigue—for example, the belief that a fair day's work has already been done. Wyatt reported that workers' productivity in the afternoon work period was higher than that during the morning work period. Since it is ordinarily assumed that workers are more fatigued in the afternoon than in the morning, then Wyatt's findings indicates clearly that no definite relationship between fatigue and output exists.

OUTPUT ONLY IS NOT ENOUGH TO MEASURE FATIGUE

One of the few systematic studies which attempted to take into account the feelings of fatigue was carried out by Poffenberger. In this study Poffenberger attempted to discover the relationship between fatigue and actual production rates. His findings were (See Figure 3, page 81) that the feeling of fatigue does not materially affect the quantity of output, and that regardless of a gradual increase in fatigue, the output remains fairly constant. In fact, it tends to increase at some points. This


FIGURE 3

THE RELATION BETWEEN FEELING OF FATIGUE AND ACTUAL PRODUCTION RATE

study is cited as an illustration of the lack of validity of output as an adequate measure of fatigue. Schaefer, in contrast to Poffenberger reported that production decreases as fatigue increases. 40

While Poffenberger gave much attention to the "feelings" factor in his study of the fatigue problem, Viteles tended to ignore it, assuming that it was a poor indicator of fatigue. 41 On the other hand, the Hawthorne experiments 42 showed that the increased feeling of muscle fatigue had not been the primary factor in increasing output, and that a better mental attitude, greater enjoyment of work, and less strict supervision, were the most significant factors governing the employee's efficiency. 43 These experiments support a contention that muscular fatigue is a secondary factor in determining the quantity and quality of output.

Roethlisberger, after an analysis of composite daily work curves, concluded that relief from fatigue and monotony does not account for changes in output from period to period. 44 He found that the output


41 Viteles, op. cit., p. 457.

42 These experiments were carried out at the Hawthorne works of the Western Electric Company in Chicago between 1927 and 1932.


44 Roethlisberger and Dickson, op. cit., p. 127.
curves failed to show the presence of fatigue in the periods in which it was most likely to occur. Nor were there any marked changes in the shape of the output curves during those periods in which better working conditions prevailed.

Physiological and psychological fatigue are mixed and merged with each other to the extent that the line between them is so shadowy that up to the present time no valid measurement has been developed to separate the effect of each of them on individual performance. It should be noted that this analysis does not conflict with the findings of Burtt who suggested that physiological and psychological fatigue do not necessarily go together.45

RELATIONSHIP BETWEEN FATIGUE, ACCIDENTS, AND OUTPUT

Investigators have concluded that fatigue represents the most important single cause for industrial accidents. They base their conclusion on the fact that accidents increase as the day progresses. As workers get more fatigued as the day advances, the investigators assumed that fatigue was responsible for the accidents.

Muscio found that only 17 per cent of accidents were beyond the control of the victim, and seven per cent were definitely not due to

45H. E. Burtt, op. cit., p. 189.
fatigue. Thus, he concluded that fatigue was a prime factor in the cause of the other 76 per cent of accidents. However, they could be due either to the fatigue factor or other factors.

An analysis by a government group in 1911 showed that in seven per cent of the accidents fatigue was definitely not responsible, while in 93 per cent fatigue might have been the cause. But the analysis did not claim that fatigue was fully responsible for all of these accidents. Furthermore, the findings of this study cannot be taken as evidence that fatigue was the sole responsible factor for the majority of the accidents. Other factors might also have been partially or fully responsible.

Goldmark, Hopkins, and Florence stated that there was a continuous increase in the number of accidents from the beginning to the end of the working day. Schaefer also stated that there was a direct relationship between fatigue and accidents and that the high accident frequency at the peak periods of the day occurred when greatest fatigue had been reached and that accidents varied directly with fatigue. Similarly, a study by the United States Public Health Service revealed that the rate

46 Muscio, Lectures on Industrial Psychology, p. 63.
47 Ibid.
49 Schaefer, op. cit., p. 304.
### TABLE I

**The Average Number of Accidents in a Working Day from One Hour to Another**

<table>
<thead>
<tr>
<th>Time</th>
<th>Germany</th>
<th>England</th>
<th>France</th>
<th>Total</th>
<th>England</th>
<th>Illinois</th>
<th>Indiana</th>
<th>Wisconsin</th>
<th>Grand Total</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>7-8</td>
<td>794</td>
<td>457</td>
<td>232</td>
<td>1,483</td>
<td>163</td>
<td>79</td>
<td>546</td>
<td>156</td>
<td>2,427</td>
<td>347</td>
</tr>
<tr>
<td>8-9</td>
<td>815</td>
<td>316</td>
<td>305</td>
<td>1,436</td>
<td>208</td>
<td>120</td>
<td>492</td>
<td>244</td>
<td>2,500</td>
<td>357</td>
</tr>
<tr>
<td>9-10</td>
<td>1,069</td>
<td>372</td>
<td>342</td>
<td>1,783</td>
<td>251</td>
<td>193</td>
<td>603</td>
<td>427</td>
<td>3,257</td>
<td>465</td>
</tr>
<tr>
<td>10-11</td>
<td>1,598</td>
<td>665</td>
<td>478</td>
<td>2,741</td>
<td>242</td>
<td>246</td>
<td>469</td>
<td>486</td>
<td>4,184</td>
<td>598</td>
</tr>
<tr>
<td>11-12</td>
<td>1,590</td>
<td>623</td>
<td>292</td>
<td>2,505</td>
<td>121</td>
<td>257</td>
<td>338</td>
<td>376</td>
<td>3,597</td>
<td>514</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td>2,039</td>
<td>2,281</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time</th>
<th>Germany</th>
<th>England</th>
<th>France</th>
<th>Total</th>
<th>England</th>
<th>Illinois</th>
<th>Indiana</th>
<th>Wisconsin</th>
<th>Grand Total</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2</td>
<td>745</td>
<td>222</td>
<td>132</td>
<td>1,099</td>
<td>141</td>
<td>111</td>
<td>441</td>
<td>247</td>
<td>2,039</td>
<td>291</td>
</tr>
<tr>
<td>2-3</td>
<td>1,037</td>
<td>335</td>
<td>310</td>
<td>1,682</td>
<td>165</td>
<td>156</td>
<td>481</td>
<td>407</td>
<td>2,891</td>
<td>413</td>
</tr>
<tr>
<td>3-4</td>
<td>1,243</td>
<td>536</td>
<td>421</td>
<td>2,200</td>
<td>203</td>
<td>227</td>
<td>598</td>
<td>435</td>
<td>3,663</td>
<td>523</td>
</tr>
<tr>
<td>4-5</td>
<td>1,178</td>
<td>512</td>
<td>513</td>
<td>2,203</td>
<td>147</td>
<td>260</td>
<td>480</td>
<td>446</td>
<td>3,536</td>
<td>505</td>
</tr>
<tr>
<td>5-6</td>
<td>1,306</td>
<td>615</td>
<td>254</td>
<td>2,886</td>
<td>92</td>
<td>145</td>
<td>197</td>
<td>277</td>
<td>2,886</td>
<td>412</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td>15,015</td>
<td>2,144</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


of accidents increases toward the end of the day. These studies point out that accidents are definitely due to fatigue.

On the other hand, Vernon did not think that fatigue was responsible for accidents. Through several studies showed that there was no marked increase in accident rate in the afternoon in comparison with the rate in the morning. Since the results obtained from these studies are not in agreement, no final conclusion can be drawn from them.

A chart (See Figure 4, page 87) is used to show the relationship between output and accident curves. The accident curve represents the average accident rate in England, Germany, and France in Europe, and in Illinois, Indiana, New England, and Wisconsin in the United States. Statistics which are used are not entirely comparable because of the different length of working days and other factors that vary from one country to another and from one state to another. However, the shape of this curve is similar to the curve which Burtt assumed represented the general trend for an accident curve.

A careful analysis of this chart shows that while the output curve starts at a relatively low rate it gets to its highest point at almost the

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52 Burtt, op. cit., p. 157.
FIGURE 4

THE RELATIONSHIP BETWEEN OUTPUT AND ACCIDENTS

Source of accident curve: Table I, page 85.

middle of the period and then drops gradually until the end of the period. The accident curve goes up gradually until almost the end of the period and then drops slightly. This drop in output could be due to an increase in accidents as well as to an increase in fatigue or to any other factor. Also an increase in accidents could be due to factors other than fatigue. For instance, the Public Health Service has found that there is a close parallel between the number of accidents and the lack of workers' experience and training.\textsuperscript{53} (See Figure 5, page 89).

If fatigue affects the rate of accidents according to a definite relationship, then the number of accidents in the afternoon should be higher than in the morning. This deduction is based on the assumption that workers are more fatigued in the afternoon than in the morning. However, according to the results shown in Table I on page 86, the total number of accidents is less in the afternoon than in the morning. Therefore, this fact could be taken as evidence that accidents are not caused solely by fatigue.

Another finding (See Figure 4, page 87) was that accidents did not increase continuously from the beginning to the end of the working period, but it decreased toward the end of the period. This finding does not agree with the finding of the United Public Service which showed that there was a marked increase in the accident rate per unit of output as the day advances.\textsuperscript{54}

\textsuperscript{53}Lee, \textit{op. cit.}, p. 75.

\textsuperscript{54}Moore, \textit{op. cit.}, p. 420.
FIGURE 5

THE RELATIONSHIP BETWEEN THE RATE OF ACCIDENTS AND
THE DEGREE OF EXPERIENCE

It is clear from the preceding analysis, however, that the relationship between the feeling of fatigue and the rate of output is broken, and that no exact correlation exists between fatigue and accidents.

**SUMMARY AND CONCLUSION**

While industrial engineers thought that physiological fatigue constituted the principle portion of the fatigue problem, it has been found that psychological and not physiological fatigue is the major part of the fatigue problem in industry at the present time. However, the work of psychologists in this field is still in its early stage. Their work has been mostly an attempt to distinguish between physiological and psychological fatigue. They have not as yet developed a complete idea or an acceptable theory as to the nature or the characteristics of psychological fatigue.

While industrial engineers thought that fatigue reduced output and increased accident rates, it has been found that there is little factual evidence to support their assumption. Although fatigue does affect the quantity and quality of production, not all characteristics of production relate to fatigue alone. In spite of the fact that fatigue affects the accident rate, it is considered as a partial and not a full factor in causing accidents.

Finally, the definition of fatigue which holds that it is a reduced capacity to perform resulting from previous physical and mental
exercise is erroneous. The objection to this definition is based upon the fact that it is difficult to determine whether the changes in the rate of output are related to the fatigue force or to other motivational forces. Under conditions of strong motivation, the productivity of workers does not correlate with their feelings of fatigue. Motivation reduces fatigue by increasing the energy supply and delaying fatigue, whereas such factors as rest periods reduce fatigue by causing the energy to be spent efficiently, regardless of the amount allotted. When motivation is low, fatigue effects become apparent very early. On the other hand, when motivation is high, the evidence of fatigue may not be apparent until a considerable physical and mental exhaustion is manifested. Therefore, the fact that strong motivational factors help a worker to produce with a relatively high efficiency even when he is physiologically and psychologically fatigued, is the reason why motivation should approach a maximum in the fatigue study.
CHAPTER V

WORKER ATTITUDES TOWARD MOTIVATIONAL FACTORS

Improvement in methods of work, the assignment of a definite task, and the assurance of a high financial return have not been sufficient to insure the continued efficiency of workers in the American economy. It has been found that these essential industrial engineering procedures must be supplemented by a more careful study of other sources of human proficiency and by a more extended consideration of other roots of human satisfaction.

Since personnel administration deals with the human being, it involves more than an engineering problem. Personnel means people; people means human relations; human relations means human problems. Thus the personnel administrator must use all his experience and knowledge to bear on the solution of this human equation. The central fact which must be remembered in any study of personnel administration is that both employers and employees are human beings with all the potentiality for desirable and undesirable behavior which that quality of humanity implies.

The amount of effort that workers are willing to expend depends on interest forces within the individual himself, commonly known as
motives or incentives. These forces are a part of him and enter into all his activities. Probably the most universal motive for workers is man's desire to secure his own livelihood and that of his family. Man's other powerful motives are desire for employment security, desire to satisfy his creative urge, and desire to achieve a kind of recognition among his fellowmen. However, motives vary with the individual and his circumstances. Although money reward is the most common incentive to labor, it is only one, of the many others that are desired by the working force.

**MEANING OF MOTIVATION**

Industrial psychologists placed great emphasis upon the discovery and recognition of basic motivations—that is, fundamental drives, urges, appetites, and instincts—on the belief that job dissatisfaction should be defined to appeal to such forces rather than to antagonize or repress them. Industrial psychologists further believed that economic activity must provide an adequate opportunity for the expression of all these elementary human demands.

The problem of motivation is concerned not only with the task of getting workers to do assigned jobs, but with the task of enlisting their cooperation and loyalty when they have already become identified with the organization. Industry needs more than a quota of daily work from

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its employees, and employees want to obtain from industry more than the content of the pay envelope. A considerable part of the problem of motivation is the development of attitudes, loyalties and capacities for the individual's making sacrifices toward an entity that is of greater consequence to the individual worker than is his own job or his personal welfare.

JOB DISSATISFACTION

The prevalence of job dissatisfaction at the present time is difficult to estimate with reasonable accuracy. Most authors who have attempted to deal with this subject have concluded that it was difficult to define the meaning of job satisfaction or job dissatisfaction. Katz, after an intensive study of this matter, offered the following four important factors of morale: intrinsic job satisfaction, pride in the work group, satisfaction with wages and with promotional opportunities, and recognition. However, he did not define what he meant by job satisfaction. Many other attempts have been made to give a definition that provides a scientific meaning to job satisfaction, but these have resulted in failure. However, a simple breakdown would show that there can be


satisfaction or dissatisfaction with some specific factors in the job.

There is considerable evidence that many workers are dissatisfied with their jobs. One significant index of the extent of such dissatisfaction is found in the large number of strikes during the last 10 years. During this period there has been a yearly average of 4,210 work stoppages averaging 20 days duration, involving approximately 2,303,000 workers, and resulting in the loss of about 33,410,000 work days. (See Table II, page 96.) Strikes and stoppages bring not only economic losses for those who are involved in them, but they represent also an overwhelming accumulation of individual and group tensions which can have disastrous effects on the stability of the economic system. Throughout the democratic countries work stoppages have seriously endangered the economic order.

**Extent of Job Dissatisfaction**

Data concerning the extent of job dissatisfaction have come from many studies; most of them involve percentages of dissatisfied persons in small groups of workers. Most frequently these studies are only a discussion of the relationship between job satisfaction and other factors such as age, sex, education, length of service, occupation, income, and other factors. These studies vary in the size of the sample, in the purpose of the investigation, and in the methods used. The principal methods of approach of these studies are questionnaires and interviews. Although these methods have some limitations from the standpoint of
TABLE II

THE NUMBER OF WORK STOPPAGES, NUMBER OF WORKERS INVOLVED, AND NUMBER OF MAN-DAY IDLE, FROM 1948 TO 1957

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Stoppages</th>
<th>Average Duration Days</th>
<th>Number of Workers Involved Per 1000</th>
<th>Number of Man-Day Idle Per 1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>1948</td>
<td>3,419</td>
<td>21.8</td>
<td>1,960</td>
<td>34,100</td>
</tr>
<tr>
<td>1949</td>
<td>3,606</td>
<td>22.5</td>
<td>3,030</td>
<td>50,500</td>
</tr>
<tr>
<td>1950</td>
<td>4,843</td>
<td>19.2</td>
<td>2,410</td>
<td>38,800</td>
</tr>
<tr>
<td>1951</td>
<td>4,737</td>
<td>17.4</td>
<td>2,220</td>
<td>22,900</td>
</tr>
<tr>
<td>1952</td>
<td>5,117</td>
<td>19.6</td>
<td>3,540</td>
<td>59,100</td>
</tr>
<tr>
<td>1953</td>
<td>5,091</td>
<td>20.3</td>
<td>2,400</td>
<td>28,300</td>
</tr>
<tr>
<td>1954</td>
<td>3,468</td>
<td>22.5</td>
<td>1,530</td>
<td>22,600</td>
</tr>
<tr>
<td>1955</td>
<td>4,320</td>
<td>18.5</td>
<td>2,650</td>
<td>28,200</td>
</tr>
<tr>
<td>1956</td>
<td>3,825</td>
<td>18.9</td>
<td>1,900</td>
<td>33,100</td>
</tr>
<tr>
<td>1957</td>
<td>3,673</td>
<td>19.2</td>
<td>1,390</td>
<td>16,500</td>
</tr>
</tbody>
</table>

Average 4,210 20.0 2,303 33,410

Source: Statistical Abstract of the United States (1958)
thoroughness they are satisfactory. 4

According to a survey conducted by Fortune in 1947, 20 per cent of a nationwide sampling of factory workers were not satisfied with their jobs and would choose a different occupation if they had to select a job again. 5 Similarly, in a study conducted by Centers, 25 per cent of the manual workers were found to be dissatisfied with their jobs. 6

In a review by Robinson, in 1956, which included the studies made in the last 20 years, a total of 343 studies reported a percentage of from one to 92 per cent of the workers judged to be dissatisfied. The percentages, compiled over the past 20 years, had a median of 13 per cent of the workers expressing job dissatisfaction. 7 Based on the Robinson reviews, the range of 13 to 21 per cent has generally been reported in the literature as representing the approximate amount of job dissatisfaction. (See Table III, page 98.) From 1947 to 1955 there was a steady decrease in the median of job dissatisfaction. Frederick Herzberg, commenting on these percentages, stated that it was impossible to tell whether this indicates that there has been a trend toward a decrease in


### TABLE III

**MEDIAN PERCENTAGE OF WORKERS DISSATISFIED WITH THEIR JOBS FROM 1947 TO 1955**

<table>
<thead>
<tr>
<th>Year</th>
<th>Median Percentage of Job Dissatisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1947</td>
<td>21</td>
</tr>
<tr>
<td>1948</td>
<td>19</td>
</tr>
<tr>
<td>1949</td>
<td>19</td>
</tr>
<tr>
<td>1950</td>
<td>19</td>
</tr>
<tr>
<td>1951</td>
<td>18</td>
</tr>
<tr>
<td>1952</td>
<td>15</td>
</tr>
<tr>
<td>1953</td>
<td>13</td>
</tr>
<tr>
<td>1954</td>
<td>13</td>
</tr>
<tr>
<td>1955</td>
<td>13</td>
</tr>
</tbody>
</table>

Source: Several reports conducted by H. A. Robinson in different issued of The Personnel and Guidance Journal.
job dissatisfaction, or a variation in types of study, particularly in the more recent stress of probing into job satisfaction in terms of the total life adjustment of workers. Moreover, the results depend upon the specific questions used in the study. A question such as "If you could do it over...?" shows greater percentages of dissatisfaction than one such as "Are you satisfied?" because it probably reveals a more basic evaluation. Also, the latter reveals more of an acceptance of one's present condition than sincere satisfaction with one's job.

In addition, it seems that job satisfaction depends upon the status of the worker in the organization; the higher his rank in the organization, the more he is satisfied; and the lower his rank, the more he is dissatisfied with his job. Centers concluded that the higher the level of occupation, the higher the morale, after he conducted a study which showed that a quarter of the workers were dissatisfied in their jobs, while not a single businessman was found to be dissatisfied. The results of a Fortune survey in 1938 showed that professional people are most interested in their jobs, salaried workers are next, and factory workers are the least interested. Katz also reported that professional workers are more satisfied with their jobs than skilled workers,

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8Herzberg, op. cit., p. 3.
9Ibid., p. 4.
10Centers, op. cit., p. 193.
and that skilled workers are more satisfied than unskilled people. 12

It is apparent that workers cannot be classified as totally satisfied or dissatisfied with the overall job; rather they are either satisfied or dissatisfied with some particular job factor or factors. The most satisfied workers are those who get most of what they want, while the most dissatisfied workers are those who get a relatively small amount of their wants satisfied.

What Does the Worker Want Most in His Job?

One of the most important recent contributions of industrial psychology to personnel administration is the result of extensive research into techniques of attitude and opinion measurement. In industrial relations these techniques are used to appraise the attitudes and morale of employees, and discover sources of dissatisfaction and irritation. These techniques enabled management to take appropriate steps before dissatisfaction is built up to the point where it erupts in work stoppages, slowdowns, or other overt manifestation of unrest.

Considerable disagreement exists between what the workers think they want most and what management and union leaders think they want. This part of the study is devoted to a full discussion of workers' attitudes toward motivational factors, and the relative importance of these

12 Dennis, op. cit., p. 153.
factors to them. The next chapter deals with management and union leader opinions as to the relative importance of motivational factors to the workers.

**RELATIVE IMPORTANCE OF MOTIVATIONAL FACTORS TO WORKERS**

Several surveys have been conducted to determine workers' attitudes toward motivational factors. The findings of 21 studies selected from among those that have been published in the last 20 years are taken as the basic data for this study, (See Table V, page 115.)

From these studies it was found that the greatest emphasis was put upon the relative importance of the following 10 factors by the workers: steady work and job security, wages and related payments, advancement and promotions, good working conditions, good working companions, good supervision, recognition, type of work and interest, good hours, and benefits.

The findings of these surveys have varied concerning the

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13 In these surveys many different terms have been used to express job factors. In some studies the factors are listed, and ranking is left to the workers. Whereas, in others, the workers are requested to provide their own list of job factors in order of importance.

Some of the studies were conducted on a national basis, while others were done locally. Some of the studies give the relative importance among a number of factors—as many as 71 factors, while others are limited to five factors only. In general, the majority of these studies contain 10 factors.
importance of the motivational factors as they are related to each other. Some investigators have placed almost all their emphasis on wages and material conditions, while others considered intangible and subtle relations predominant. Some studies showed that economic incentives are the most important for the normal workers, while others stressed that workers are concerned with non-financial incentives rather than financial ones.

Perhaps the greatest disagreement as to the importance of motivational factors is that of wages, job security, and advancement. The remainder of this section is a study of the importance of these factors from the workers' point of view.

**Job Security and Its Importance to Workers**

The results of almost half of these 21 studies indicated that job security was ranked as the most important factor in job satisfaction. The findings of another two studies showed that job security was ranked second in importance. On the other hand, eight studies ranked job security between fifth and ninth in importance.

In 1947, Stagner and the National Industrial Conference Board


reported in two separate surveys that job security ranked first in their lists. These two surveys were conducted nationally among 7,000 and 6,000 workers, respectively. In another study conducted by Jurgensen in 1946 among approximately 1,200 workers, the findings showed that workers were more interested in job security than in any one of the other factors in his list.16 Similarly, job security was ranked first among 12 factors in a survey conducted by Benge in 1944 among 1,200 male workers.17

If these results are taken at their face value, then the most likely interpretation is that job security is considered by workers as the major motivational factor they look for in their jobs.

On the other hand, some studies showed that job security ranked relatively low. Foreman Facts reported that job security was ranked fourth among 10 factors according to a survey made in 24 plants.18 In another survey, conducted by Blum and Russ, more than two-thirds of the sample ranked job security second in importance.19 Haire and Gottsdanker reported that job security ranked seventh in a list of 13

17Raube, op. cit., p. 17.
factors when the workers were asked about the things they look for in a desirable job. 20

According to a survey conducted by General Motors Corporation in 1947, job security ranked ninth. 21 Fifty-eight factors were used in this survey. Moreover, the coverage of the study was 174,854 workers, which is almost 10 times as many as the samples used in all the 11 surveys which showed that job security was first. In another survey conducted by the Opinion Research Corporation in 1951 among 1,245 workers, job security ranked ninth among 13 factors. 22 Job security was also ranked eighth among eight factors in a survey conducted by Fosdick in 1939 among 3,000 workers. 23

It is surprising to note that after a study of employees attitudes in two large commercial organizations in 1933 Houser announced that job security was less important than other motivational factors. 24 Among 48 and 41 factors, job security ranked sixteenth and ninth, respectively, in spite of the fact that job security should be much more

22 Ibid., p. 295.
important in depression periods. In another survey by Houser in 1937, job security ranked eighth among 34 items, and in a third survey by the same investigator in 1938, it was ranked 27 among 28 factors.

Some interpretations can be given as to the great contrast between the results of these surveys. However, none of them can be supported with any material evidence. The surveys of Stagner and NICB were conducted after World War II, with a short time. The decline in employment which followed that war may be interpreted as the reason why workers thought primarily in terms of job security. However, the effect of the economic conditions of that period on the results of these surveys is not definite. For example, although the General Motors Corporation survey was also conducted in the same year, the workers did not give great importance to the job security factory. Another interpretation is that the workers do not always know or say, what they really want. On this point, Oxenfeldt remarked that it is dangerous to judge people's motives solely by the things they say. What they say, on the other hand, cannot be ignored entirely.

Wages and Their Importance to Workers

Another motivational factor which is considered to be one of the

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25 Ibid.
26 Ibid., p. 30.
most frequently discussed job factors is that of wages. Psychologists, personnel managers, and the general working public have all given considerable attention to this factor. Most authors agree that wages are, in general, one of the most critical factors in employee attitudes and motivation. There is substantial difference in opinion however as to the importance of this factor. For example only three of the surveys had wages at the top of the list. In eight of them the workers ranked wages as the third factor in importance. The remainder of the surveys had it ranked between fourth and ninth.

Maynard concluded that of the two types of incentives, financial and non-financial, financial incentives were by far the more important. Similarly, Harrell concluded that in four out of five cases the preferred job is the one which carries higher pay as well as more responsibility and variety. Tredgold also concluded, from the results of his own studies, that in nine cases out of 10, money is the only interest of workers. However, he recognized that other factors beside money influence the will to work. Gardner and Moore came to the same conclusion when they stated that the majority of workers feel that pay is the

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29 Harrell, op. cit., p. 270.

only important factor for people working at their particular jobs for their particular companies. 31

The results of a survey conducted by the Opinion Research Corporation indicated the great importance of wages. According to this study, wages were ranked higher than any of the 13 factors which were used. 32 When Centers asked those who were not satisfied with their jobs about the reasons for their dissatisfaction, the most frequent answer was low wages. 33 Haire and Gottsdanker asked the workers of 40 retail grocery stores about the things they look for most in a desirable job. The results showed that 24 per cent of the workers indicated wages. Only 6.6 per cent said job security. In this study wages ranked first. 34

On the other hand, three big surveys conducted by NICB, General Motors Corporation, and Fosdick show that wages were third in importance. Jurgensen reported that wages ranked sixth with men, and ninth with women, among 10 factors considered. 35 The results of a


32 Viteles, op. cit., p. 295.

33 Centers, op. cit., p. 198.

34 Haire and Gottsdanker, op. cit., p. 447.

35 C. E. Jurgensen, "What do Job Applicants Want?" Personnel XXV (1949), 353.
survey conducted by Wyatt and Landdon ranked wages sixth among 10 factors.\(^{36}\) Also the Benge survey showed that wages were eighth among 13 factors.\(^{37}\)

These findings led some investigators in this field to go so far as to indicate that money is not an important factor.\(^{38}\) They based their assumption on the fact that most of the surveys ranked non-financial incentives higher than the financial ones. On this point, Jurgensen commented that in some studies it appeared that the relative importance of wages had often been overemphasized.\(^{39}\) He explained this statement by saying that other factors were of equal or greater importance, and that they should be emphasized more in the future than they have been in the past.

The previous discussion shows a disagreement as to the importance of wages as a motivational factor. However, if the results of these surveys are taken separately at their face value, then wages can be considered from third to fifth in importance as compared with the other 10 factors. On the other hand, if the premise that the American individuals in their economic activities strive primarily to obtain maximum income is accepted, then financial incentives are still of


\(^{38}\)Jurgensen, "*What do Job Applicants Want?*," p. 355.

\(^{39}\)Ibid.
considerable importance. 40  

**Advancement and Its Importance to Workers**

In a few of these studies, workers considered advancement as the most important factor. Blum and Russ reported that 87 per cent of their sample ranked advancement at the top of the list. 41 They concluded that neither wages nor job security were primary factors in job satisfaction, but advancement was more important in determining morale. Watson found that advancement was far ahead of job security and wages. 42 In Kolstad's study, advancement was ranked first, while wages were ranked fifth. Job security was not ranked among the first 10 factors. 43

In general, several studies have shown that advancement was far ahead of wages and job security. However, even if advancement were the most important factor in some surveys it can still be interpreted as an indirect want for more wages since advancement not only means higher position and larger responsibilities, but also an increase in payment, 44 especially among the white collar workers. On the other

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41 Blum and Russ, *op. cit.*, p. 438.

42 Hatrmann and Newcomb, *op. cit.*, p. 122.


hand, it can also be interpreted as an indirect want for job security since it is likely that people in the higher levels enjoy more job security than those in the lower levels, especially among the blue-collar workers.

Importance of Other Motivational Factors

Several motives are needed in addition to job security, wages, and advancement. The most important of them are the type of work, good supervision, good working companions, and recognition.

Frank Gilbreth proved through experimentation that workers are not interested in wages only but are also interested in the type of work they do. When he asked them to do a useless job, they refused in spite of the fact that they were well paid. Good supervision was considered as the highest motivational factor in the General Motors Corporation survey, and a good working companion was considered second in the list. Recognition was reported by Centers as the first motivational factor. Richard L. Hull also stated that the psychological satisfaction that comes with recognition of, and respect for, the worker's own personality, is also very important.

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46 Viteles, op. cit., p. 266.
47 Centers, op. cit., p. 192.
Evaluation of Morale Surveys

All this confusion as to the relative importance of morale factors relates to several elements. In the first place, the investigators used generalizations in reporting the results they obtained, even if the sample they took was not enough to represent the whole. In the second place, the findings of each of these surveys gave only an idea about the wants of the workers in a certain location, at a certain time, under certain conditions. In the third place, one cannot make a valid comparison between the findings of these investigations since they were conducted at different times during the business cycle. In the fourth place, it is not possible to determine the degree of frankness with which the people revealed their true attitudes and feelings. Finally, different methods were used in these surveys. Some investigators used direct questions, while others used indirect ones. Stagner pointed out that if the workers were asked directly about the importance of a certain factor in their overall satisfaction, this factor usually ranked higher than if the indirect type of questions concerning the same factor were used. Again, he reported that psychologists were doubtful as to the validity of such direct questions. On the other hand, Weitz and Nuckols concluded that direct


questions proved to be slightly better than indirect questions in predicting the importance of motivational factors. Thus, it is not possible to evaluate with a great degree of accuracy the replies obtained in these surveys.

Generally, the findings of each of these surveys do not give the relative importance of the morale factors for all workers. Table IV, page 113, shows the relative importance of some factors according to the number of workers who chose the particular factor as their first want. A review of the findings of these studies shows that about 175,000 workers of the total sampled chose good supervision as the most important factor. A little more than 16,000 chose job security as the primary motive. Only 2,000 decided that wages were their major interest. Nine hundred workers stated that recognition was the most important of all. Advancement was ranked at the top of the list by only 336 workers. It clearly appears that job security is far ahead of wages in importance.

However, an important limitation to the interpretation of these statistics is that the rank of some factors is seriously affected by the findings of only a limited number of surveys. Moreover, not all the 21 surveys are taken into account. Because of these two limitations, another attempt to analyze the findings of the 21 surveys in another way is made.

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### TABLE IV

A REVIEW OF THE RELATIVE IMPORTANCE OF THE MOTIVATIONAL FACTORS ACCORDING TO THE NUMBER OF WORKERS WHO CHOSE EVERY FACTOR AS THE FIRST WANT IN 21 SURVEYS

<table>
<thead>
<tr>
<th>Factor</th>
<th>Number of Surveys in Which the Factor Appears at the Top of the List</th>
<th>Number of Workers Put the Factor at the Top of the List</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good Supervision</td>
<td>1</td>
<td>174,854</td>
<td>1</td>
</tr>
<tr>
<td>Job Security</td>
<td>9</td>
<td>16,063</td>
<td>2</td>
</tr>
<tr>
<td>Wages</td>
<td>3</td>
<td>2,065</td>
<td>3</td>
</tr>
<tr>
<td>Recognition</td>
<td>1</td>
<td>905</td>
<td>4</td>
</tr>
<tr>
<td>Advancement</td>
<td>3</td>
<td>336</td>
<td>5</td>
</tr>
<tr>
<td>Interest and Type of Work</td>
<td>1</td>
<td>150</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
<td><strong>194,373</strong></td>
<td></td>
</tr>
</tbody>
</table>

Sources of these surveys are on pages 116 and 117.
This analysis is based upon the assumption that an average for the results of the 21 surveys might give a clearer idea about the general attitude of the workers than the individual surveys. (See Table V, page 115 for the results of this averaging.) The averaging of the 21 studies supplied a result which is completely different than the result of any individual survey. It appears clearly that both job security and wages are tied for first place in the list. In other words, both wages and job security are equally important to the workers. Second to them in importance comes the recognition factor. Interest in work is third and good supervision is fourth. Advancement, good working companions, good working conditions, good hours of work, and benefits are fifth, sixth, seventh, eighth, and ninth, respectively.

However, a major limitation must be recognized in evaluating this averaging of the studies. The findings of all the surveys were given an equal weight although some of them contained five factors only while others contained up to 71 factors. It is probably true that the relative importance of the first factor in a survey of five items does not equal the relative importance of the first factor in a survey of 71 items. On the other hand, these findings have a considerable weight since they are drawn from the results of different surveys covering around 200,000 workers scattered all over the nation. Furthermore, these surveys were conducted over a relatively long period of time during which many economical and political events occurred.

It is not claimed that these findings represent the actual wants of
### TABLE V

**AN AVERAGING OF THE RESULTS OF 21 WORKERS' ATTITUDE SURVEYS**

| Investigator* | (a) Jurgensen | (b) Stagner | (c) Blum and Ross | (d) Beige Lindhale (e) NICB Foreman Facts (f) General Motors Corp. (g) Wyatt and Landen (h) Hardin (i) Santiwey (j) Troxell |
|---------------|---------------|-------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Number of Factors Used | 10 | 10 | 10 | 5 | 5 | 13 | 13 | 10 | 71 | 10 | 10 | 10 | 10 |
| Number of Sample | 1,189 | 150 | 7,000 | 181 | 105 | 250 | 1,200 | 148 | 6,000 | 24 plants | 174,854 | 325 | 62 | 139 | 100 | 705 |

| Steady Work and Job Security | 1 | 3 | 1 | 2 | 2 | 8 | 6 | 1 | 1 | 1 | 4 | 9 | 1 | 1 | 1 | 9 | 2 |
| Wages and Payments | 6 | 9 | 2 | 3 | 4 | 3 | 3 | 8 | 5 | 3 | 3 | 5 | 3 | 6 | 4 | 4 | 4 | 1 |
| Advancement and Promotions | 2 | 2 | 3 | 1 | 1 | 13 | 11 | 6 | 2 | 7 | 7 | 5 | 2 | 6 | 2 | 7 |
| Good Working Conditions | 9 | 7 | - | - | - | 7 | 3 | 3 | 10 | 9 | - | 2 | 7 | 8 | 8 | - |
| Good Working Companions | 5 | 6 | 8 | - | - | - | 7 | - | 8 | 2 | 3 | 8 | 7 | 6 | 4 |
| Good Supervision | 7 | 5 | 4 | 4 | 3 | 5 | 2 | - | 8 | - | 1 | 4 | 6 | 3 | 7 | 3 |
| Recognition | - | - | 6 | - | - | - | - | - | - | - | - | 7 | - | - | - | - |
| Type of Work and Interest | 3 | 1 | 5 | - | - | - | - | 2 | 6 | 6 | 4 | 10 | 3 | 2 | 10 | 6 |
| Good Hours | 8 | 8 | - | 5 | 5 | - | - | - | 12 | - | - | 9 | 5 | 5 | - | - |
| Benefits | 10 | 10 | 10 | - | - | - | - | - | - | 4 | - | 8 | - | 10 | 10 | - | - |

*Sources of these surveys are on the following page.*
<table>
<thead>
<tr>
<th>(l)</th>
<th>(k)</th>
<th>(m)</th>
<th>(n)</th>
<th>(o)</th>
<th>(p)</th>
<th>(q)</th>
<th>Total</th>
<th>Number of Surveys Used</th>
<th>Average</th>
<th>Rank of the Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wyatt and Landdon</td>
<td>Hardin &amp; Santmyers</td>
<td>Troxell</td>
<td>G. Watson</td>
<td>Opinion Research</td>
<td>R. Centers</td>
<td>Fosdick</td>
<td>Hair and Gottsdanker</td>
<td></td>
<td>197,723</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>13</td>
<td>23</td>
<td>8</td>
<td></td>
<td>115</td>
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<td>325</td>
<td>62</td>
<td>139</td>
<td>100</td>
<td>705</td>
<td>50</td>
<td>1,245</td>
<td>905</td>
<td>3,000</td>
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</table>

### Data Table

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<th>(l)</th>
<th>(k)</th>
<th>(m)</th>
<th>(n)</th>
<th>(o)</th>
<th>(p)</th>
<th>(q)</th>
<th>Total</th>
<th>Number of Surveys Used</th>
<th>Average</th>
<th>Rank of the Factor</th>
</tr>
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<td>8</td>
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<td>-</td>
<td>-</td>
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<td>-</td>
<td>7</td>
<td>2</td>
<td>86</td>
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<td>87</td>
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<td>4</td>
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<td>91</td>
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<td>-</td>
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<td>-</td>
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<td>-</td>
<td>-</td>
<td>57</td>
</tr>
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<td>10</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>8</td>
<td>-</td>
<td>9</td>
<td>-</td>
<td>-</td>
<td>79</td>
</tr>
</tbody>
</table>
(a) C. E. Jurgensen, "What do Job Applicants Want?" Personnel, XXV (1949), 353.


(g) Raube, op. cit., p. 12.

(h) Lindahl, op. cit., p. 265.


(o) Viteles, op. cit., p. 295.

(q) Hartmann and Newcomb, op. cit., p. 119.

the employees. **As a matter of fact, it is misleading to list incentives in order of their importance.** The particular incentive or incentives motivating an individual within a group are so different that only sweeping generalizations can be made. Moreover, the central problem of motivation is complicated by the fact that the relative value of incentives to any individual differs from time to time according to changes in his environment. Maier pointed out that individuals in different income brackets are not working for the same motive, and so everyone is motivated quite differently. Similarly, May Smith concluded that the same incentives do not appeal to everybody equally; age, sex, and race, as well as the nature of the work have to be considered.

**COMPARISON BETWEEN THE IMPORTANCE OF JOB SECURITY AND WAGES**

The previous findings indicate a broad trend as to the major motivational factors from the workers' point of view. According to these results job security is not more important than wages as a motivational factor, which is the consensus at the present time. Some facts supporting these findings are to be found in the reasons workers join unions, go on strikes, and quit their jobs.

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Reasons for Joining Unions

Several studies in this field indicated that in joining unions, workers seek to insure a steady increase in wages more than to obtain a continuous stability in employment. In an interview study conducted by Bakke for the Division of Labor Studies at the Yale Institute of Human Relations, wages were reported as one of the major goals of workers for joining unions. Another survey made by the University of Minnesota showed that more than 90 per cent of the sample believed that unionizing gives them higher wages and better conditions of work, and that these were major reasons for joining. This survey included responses from a sample of 1,251 union members representing 13 union groups with a total membership of 14,000 members.

Similarly, Rose reported that when 392 members of a union in St. Louis were asked what they thought the major purpose of unions should be 75 per cent replied that the purpose should be to get specific economic benefits in the form of higher wages. Only 31 per cent stated that the major purpose should be to get job security.

\[54^{E. W. Bakke, "Why Workers Join Unions," Personnel, XXII (1945), 42.}\]
\[55^{Do You Really Know What Your Union Members Think," Management Methods, XI, No. 4. (1957), 27.}\]
\[56^{The percentages total more than 100 because some people gave more than one answer.}\]
\[57^{A. M. Rose, Union Solidarity (Minneapolis: The University of Minnesota Press, 1952), p. 63.}\]
When Rose asked the question "Why did you join the union?" the answers were: 58 7.7 per cent, higher wages; 4.3 per cent, job security; 45.9 per cent said they were obliged to join; and 51.2 per cent for other reasons. 59

More detailed data as to the reasons for joining unions are found in a study by Link in 1942. 60 The following percentages show the answers for the question "Why all workers should be required to join or belong to a union?": better wages and hours, 9.4; bargaining power, 8.4; better cooperation with management, 4.8; job security, 2.8; and others, 16.0 61 These findings cover the results of 1,000 interviews among industrial workers.

When Rose asked "What do you think are the main things your union should work for at the present time, either through collective bargaining or through social action in the community?" 62 the answers were: higher wages, 33.7 per cent; working conditions, 18.4 per cent; benefits, 9.4 per cent; job security, 8.4 per cent; and others, 42.2 per cent. 63

58Ibid., p. 61.

59The percentages total more than 100 because some people gave more than one answer.


61Percentages are based on the total sample of 1,000 people.

62Rose, _op. cit._, p. 142.

63The percentages total more than 100 because some people gave more than one answer.
An undated study sponsored by the National Association of Manufacturers and conducted by Cherrington and Roper, which involved interviews with approximately 6,000 employees showed similar results. The answers to the question "Why do you think most union members join a union?" showed that 27.5 per cent joined for more wages, and only three per cent for job security.

In general, the findings of these surveys show that a small proportion of workers join unions primarily for job security. However, that does not mean definitely that workers care more for wages than they do for job security. It could mean that workers look to management and not to unions for job security.

Causes of Work Stoppages

Further evidence that wages are not less important than job security is found in the reasons for work stoppages and strikes. Official statistics show that a much higher proportion of work stoppages and strikes occur because of wages than because of job security.

A comparison between the percentage of stoppages that occurred because of wages and job security in the last fifteen years is shown in Table VI, page 122. The average of the fifteen years shows that the number of work stoppages, the number of workers involved, and the number of man-days idle over wages and hours are far greater than

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64 Viteles, op. cit., p. 341.
### TABLE VI

**COMPARISON BETWEEN THE PERCENTAGE OF STOPPAGES THAT WERE CAUSED BECAUSE OF WAGES AND JOB SECURITY FROM 1943 TO 1957**

<table>
<thead>
<tr>
<th>Year</th>
<th>WAGES AND HOURS</th>
<th>JOB SECURITY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percent of Number of Strikes and Stoppages</td>
<td>Percent of Number of Workers Involved</td>
</tr>
<tr>
<td>1943</td>
<td>51.0</td>
<td>61.9</td>
</tr>
<tr>
<td>1944</td>
<td>43.3</td>
<td>38.1</td>
</tr>
<tr>
<td>1945</td>
<td>42.4</td>
<td>43.7</td>
</tr>
<tr>
<td>1946</td>
<td>44.9</td>
<td>75.1</td>
</tr>
<tr>
<td>1947</td>
<td>46.3</td>
<td>37.2</td>
</tr>
<tr>
<td>1948</td>
<td>50.8</td>
<td>61.9</td>
</tr>
<tr>
<td>1949</td>
<td>46.6</td>
<td>51.0</td>
</tr>
<tr>
<td>1950</td>
<td>52.8</td>
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</tr>
<tr>
<td>1957</td>
<td>47.1</td>
<td>54.2</td>
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**Average of Fifteen Years**

<table>
<thead>
<tr>
<th>WAGES AND HOURS</th>
<th>JOB SECURITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>48.0</td>
<td>55.4</td>
</tr>
</tbody>
</table>

**Source:** Monthly Labor Review, May issue from 1944 to 1958.
those which are over job security. If these percentages are accepted at their face value, then wages are more responsible for work stoppages than job security.

However, there is considerable disagreement concerning the real reasons for strikes, and it would be a serious mistake to assume that the classifications given in the reports of the *Monthly Labor Review* identify the true causes of strikes; at best these reports can be considered rough approximations.

Stagner commented that workers who walk out because of repeated ego frustrations will not give this as a reason for their action, and that such frustrations are probably unconscious. He concluded that wages are in many cases secondary demands used to rationalize the fact that the workers are unable to state exactly what they want.

Harrell stated that more pay is the reason often given for more strikes, and that there are many psychological and social factors that are responsible for the dissatisfaction of workers which they cannot express easily; therefore, their only way to express their feelings is through demands for higher wages. A slightly different conclusion was reached by Maier when he stated that men demand extra financial incentives to

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66 Ibid., p. 424.
67 Stagner, "Psychological Aspects of Industrial Conflict," p. 3.
68 Harrell, op. cit., p. 271.
offset undesirable conditions. Similarly, Houser commented that it is a matter of common experience that employees see money as a compensation for irritations or bad working conditions. Viteles stressed the fact that a large increase in income is desired by those who are dissatisfied with their jobs.

Watson concluded that where labor is well paid, have short hours, and good working conditions, but where morale is low, the employees might express their low morale in terms of such demands, even if they are certain that they were not the cause for their dissatisfaction. Further, the underlying cause of dissatisfaction may not be in the pay envelope but in the work itself.

Knowles, however, had a different opinion. He reported that although a higher percentage of all strikes concerned wages, that meant only that a high proportion of strikes took the form of wage strikes. He concluded that wage strikes tend to be symbolic of wider grievances.

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69 Maier, op. cit., p. 269.
70 Houser, op. cit., p. 36.
72 Watson, op. cit., p. 364.
73 Hartmann and Newcomb, op. cit., p. 115.
On the other hand, Tootle said that employees may be unhappy about promotion or the lack of it, about recognition or the lack of it, but most often they are unhappy about money and the lack of it. He continued that employees often put status, pride of place, security, or work companionship ahead of money, but when they become unhappy about money they go on strikes. \(^7\)

Whyte remarked that although workers may think of other factors when they complain, they are still most certainly concerned about money. \(^7\)

There seems to be a conflict between what the official figures show and what the experience and knowledge of operating executives and psychologists tell about the real causes of strikes and stoppages. Their interpretations of the underlying causes of strikes might well be true, and considerable weight should be given to them, but the opinions of these people are only opinions, and they lack the material support of experimental evidence.

**Reasons for Turnover**

A third evidence that job security is not more important than wages lies in the fact that wages are still a major cause for turnover.

The results of five different studies showed that the average


percentage of those who leave their jobs because of wage only was 26 per cent. (See Table VII, page 127.)

In 1947, Kerr studied the relationship between labor turnover and 24 variables in seven major manufacturing divisions which altogether employed approximately 3,000 workers. The following three variables were found to be significantly related to turnover, that is, hourly earnings, job monotony, and promotion probability. 77

Similarly, Kerr and Smith concluded from a study of 48 companies that pay grievances were the prime cause of quitting and it was mentioned twice as frequently as any other single topic of complaint. 78

Next in the order of complaints were transportation, promotion, working conditions, poor health, job security, co-workers, housing, supervision, confidence in management, and interest in employee welfare.

Bluestone reported in 1955, after a study of workers' reasons for job choice, that wages, physical conditions of employment, and long range possibilities for increased earnings were major determinants in workers' decisions to leave current jobs or to take new ones. 79


TABLE VII

PERCENTAGE DISTRIBUTION OF QUITS BY MAJOR REASONS FOR QUITTING IN FIVE DIFFERENT STUDIES

<table>
<thead>
<tr>
<th>Investigator</th>
<th>Period</th>
<th>Sample (workers)</th>
<th>Nature of Advancement</th>
<th>Job</th>
<th>Personal Relations</th>
<th>Others</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>L. G. Reynolds</td>
<td>1947-48</td>
<td>450</td>
<td>24</td>
<td>31</td>
<td>30</td>
<td>15</td>
<td>100</td>
</tr>
<tr>
<td>University of Minnesota Ind. Relation Center</td>
<td>1940-50</td>
<td>4500</td>
<td>20</td>
<td>24</td>
<td>29</td>
<td>3</td>
<td>24</td>
</tr>
<tr>
<td>Massachusetts Institute of Technology Ind. Relation Center</td>
<td>1940-50</td>
<td>2700</td>
<td>22</td>
<td>18</td>
<td>8</td>
<td>8</td>
<td>44</td>
</tr>
<tr>
<td>Bureau of Labor Statistics</td>
<td>1940-51</td>
<td>1712</td>
<td>28</td>
<td>25</td>
<td>12</td>
<td>3</td>
<td>32</td>
</tr>
<tr>
<td>Bureau of Labor Statistics</td>
<td>1940-52</td>
<td>1800</td>
<td>37</td>
<td>7</td>
<td>11</td>
<td>8</td>
<td>37</td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td></td>
<td>26</td>
<td>15</td>
<td>18</td>
<td>11</td>
<td>30</td>
</tr>
</tbody>
</table>

On the other hand, Bellows and Clarke concluded that it was difficult to determine the real cause of turnover because the employees themselves did not know the true reasons. Both of them emphasized that pay was not the most important factor in separation and that personnel policies were likely to be more responsible for turnover. Even if this is true, it is not scientifically supported. Therefore, their opinions cannot be conclusive. However, since both of them are considered as experts in the personnel field, their opinions should be given some consideration and not ignored completely.

SUMMARY AND CONCLUSION

The preceding discussion does not mean that money is of a superior importance as a motivational factor. Actually it is not possible to formulate exactly the relative incentive value of wages as compared with other incentives because money serves to gratify various motives, depending upon the individual and the situation. Money means security for one person, a better living for another, prestige for a third, and a method of increasing future income for a fourth. It is true that many of the causes of individual behavior do not go according to certain rules or particular formulas. In fact, it is difficult to give adequate evidences as

80 Bellows, op. cit., p. 270.

to the accuracy of the statistics or experiments cited in this section, and to evaluate the real reasons for workers to join unions, to strike, or to leave their jobs.

More often arguments exist about what motivational factors workers consider more important for them: the financial incentives or the non-financial ones. The argument in this form is meaningless because men are interested in money as well as other factors. A major outcome of investigations in the area of morale and motivation is the clear demonstration that neither the financial incentives nor the non-financial incentives are sufficient within themselves to achieve optimum results in the way of production, morale, and harmonious labor relations. In fact, one gets the impression from the authors who found that job security was ranked higher than wages that financial incentives have largely lost their potency in stimulating increased production, satisfying employees, and reducing industrial conflict. On the other hand, there is equal evidence that wages still have the power to stimulate workers to produce more. However, a greater financial incentive can produce maximum benefits only when there is a full understanding between workers and management. Therefore, the problem is not economic incentives or human relations; it is how to fit them effectively together to produce more satisfaction among the working class.
CHAPTER VI

MANAGEMENT AND UNION LEADERS' OPINIONS TOWARD MOTIVATIONAL FACTORS

Most managers approach the question of human relations in the factory by applying techniques which they believe will satisfy workers and result in maximum output. Similarly, union leaders try to satisfy their members by giving considerable emphasis to the motivational factors that they think workers want most. However, not enough attention has been paid by either management or union leaders to the way the workers themselves feel about the satisfaction they are seeking from their jobs. In fact, the disagreement among workers, union leaders, and managers as to the relative importance of motivational factors for workers is one of the major causes of the industrial conflict at the present time.

MANAGEMENT OPINIONS

There have been very few surveys concerning management's opinion of the relative importance of the various motivational factors. Of these few, four were chosen for inclusion in this study.

The findings of these four surveys (See Table VIII, page 131) indicate that management-level personnel, in general, are unable to
<table>
<thead>
<tr>
<th>Investigator</th>
<th>NICB (a)</th>
<th>John Troxell (b)</th>
<th>Foreman Facts (c)</th>
<th>Fosdick (d)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>1944</td>
<td>1950</td>
<td>1946</td>
<td>1939</td>
</tr>
<tr>
<td>Sample</td>
<td>50 Executives</td>
<td>144 Foremen</td>
<td>179 Managers</td>
<td>Several Hundred Employers</td>
</tr>
<tr>
<td>Number of Factors Used</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Sources:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
predict the relative importance of the various motivational factors from the employees' point of view. The results of these surveys differed widely from one to another. While wages were rated at the top of the list in three of them, wages were rated between second and fifth in the remainder. Although job security was rated second by NICB, Foreman Facts, and Fosdick, it was ranked far below in the surveys conducted by Troxell. Also, while Troxell's surveys rated type of work and interest as first, the other surveys ranked them third, fifth, and seventh. However, most of these surveys agreed that the recognition and supervision factors are not within the first five important factors.

Because of the lack of conformity among the findings of these surveys, an over-all averaging has been made. The results were different from the results of any individual surveys. According to this over-all averaging, management ranked the 10 motivational factors as to their relative importance to workers in the following way: wages, type of work and interest, job security, advancement and promotion, working conditions, working companions, supervision, recognition, benefits, and working hours.

In comparing the over-all rating of both workers and management, using the same 10 factors, (See Table V and Table VIII, pages 115 and 131,) it was found that there was a fairly close correlation between management and workers concerning the relative importance of the following factors: wages, type of work and interest, working companions, benefits, and working hours. These findings, which indicate that management gives considerable weight to the type of work, differs
from the findings of Jurgensen who stated that management does not give an adequate weight to the type of work done by workers.¹

On the other hand, a great difference was found in the ranking of the other factors by managers and workers. While workers rated job security as first in importance, management ranked it third. Perhaps the most significant difference concerned the importance of the recognition factor, which was ranked second by workers and eighth by management. Also, while management under-estimated the importance of supervision, it over-estimated the importance of advancement and promotion and working conditions. This comparison shows that the gap between the opinions of both workers and management concerning the relative importance of these motivational factors is very wide.

Several reasons can be given for this difference of opinion. Since the success of a business is usually measured in terms of profits, managers tend to assume that the satisfaction of workers is more directly related to wages than to any other factor. Harrell pointed out that pay has been assumed by management to be almost the only incentive workers need.² However, Whyte stated in 1952 that management tends to recognize that money is not the sole factor workers


Most managers do not take into consideration the opinions of their foremen when they make their industrial relation policies. In a survey conducted by James Mullen it was found that 57 per cent of the foremen were seldom asked their opinion before going into contract negotiations with the unions. Moreover, 45 per cent of the sample in the same survey stated that the program in their companies for training supervisors was inadequate or not in existence in such matters as human relations and related topics.

These results can be expected since management personnel and rank and file workers tend to come from two separate social classes. While management people, except the foremen, belong to the upper class, workers belong to the lower class.

UNIONS LEADERS' OPINIONS

The only important study dealing with union leaders' opinion toward motivational factors is that of the National Industrial Conference

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5 Ibid.

This survey was conducted among 52 labor leaders. (See Table IX, page 136, for the answers they gave when they were asked to list in order of importance the factor that they thought the employees most wanted.)

In comparing the findings of this survey and the overall attitudes of workers, the following results were found:

There was an agreement between labor leaders and workers that wages and job security were the most important factors workers look for in their jobs. Although there was a slight difference in the ranking of job security between labor leaders and workers, it was not of significant importance.

There was considerable difference concerning the rank of the other eight factors. Labor leaders over-evaluated working hours and working conditions; they ranked them third and fourth, respectively, while the workers ranked them eighth and seventh. However, labor leaders under-evaluated the supervision and recognition factors. While the recognition and the supervision factors were rated second and fourth by workers, they were ranked sixth and tenth in importance by their leaders.

Type of work and interest, advancement and promotion, working companions, and benefits were not considered by labor leaders among the first 10 important factors.

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TABLE IX

RANKING OF MOTIVATIONAL FACTORS, FROM THE UNION LEADERS POINT OF VIEW

<table>
<thead>
<tr>
<th>Factor</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wages and payment</td>
<td>1</td>
</tr>
<tr>
<td>Job Security</td>
<td>2</td>
</tr>
<tr>
<td>Good Working Hours</td>
<td>3</td>
</tr>
<tr>
<td>Good Working Conditions</td>
<td>4</td>
</tr>
<tr>
<td>Labor Unions</td>
<td>5</td>
</tr>
<tr>
<td>Recognition</td>
<td>6</td>
</tr>
<tr>
<td>Methods of Handling Grievences</td>
<td>7</td>
</tr>
<tr>
<td>Vacations and Holidays</td>
<td>8</td>
</tr>
<tr>
<td>Job Evaluation Programs</td>
<td>9</td>
</tr>
<tr>
<td>Good Supervision</td>
<td>10</td>
</tr>
</tbody>
</table>

Therefore, the opinion of their union leaders, differed widely from what the workers themselves think. Brent Bexter pointed out that while unions are viewed as representatives of the members and should represent their needs, they usually have their own objectives which may or may not reflect the opinion of the members. In other words, union leaders are often more interested in what they believe workers should have rather than what the workers themselves desire to have.

This wide difference between the opinions of union leaders and workers could be due to several reasons.

It is not surprising that union leaders do not know exactly what workers want since the members are normally not willing to devote much of their time to the union internal activities. Strauss and Sayles stated that the union meetings usually attract from two to eight per cent of the members, and in general, attendance does not exceed six per cent of the total membership.

Furthermore, a large number of those who do attend are personal followers of the leaders and have little practical concern for the union functions. This low attendance is due to the fact that many workers

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10 Ibid.
still do not understand the purpose and function of unions and do not like to bother themselves with meetings in which they have no immediate interest. Moreover, appointments to minor committees are often hard to fill.

Although most union leaders were at one time part of the rank and file group, they often fail to know the exact demands of members. This is probably because things have changed since they were rank and file employees and their assistants fail to keep them informed concerning the primary interest of the workers. Moreover, some of them became leaders without being in the rank and file. In addition, their prestige and authority as leaders tends to make them assume an intimate knowledge of the field that they do not always possess.

The growth of centralization of union administration has made it more complicated for national officers to know the demands of the workers in the union locals.

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12 Ibid., p. 95.


14 Professor L. C. Megginson, Lecture in management seminar.

COMPARISON BETWEEN WORKERS, MANAGEMENT, AND UNION LEADERS' OPINIONS

Both management and union leaders agree that wages are of great importance to workers. However, union leaders are closer than management to the workers' opinions as to job security. Management seems to have better sense of workers' opinions concerning working hours and supervision than the union leaders. On the other hand, union leaders are more practical than management in appreciating the importance of recognition and working conditions as motivational factors.

In general, management ranked four factors almost in the same manner as the workers themselves. These factors were wages, type of work and interest, working companions, and benefits. On the other hand, union leaders ranked two factors about the same as they were ranked by the workers. These factors were wages and job security. According to the results of these studies, (See Table X, page 140) management understands the attitudes and wants of workers more accurately than union leaders. However, an important limitation to these findings should be mentioned. While several studies are used to show the opinion of workers and management, only one study is used to show the opinion of union leaders. Although one study is not sufficient to be conclusive, it is the only important one available.
TABLE X

A COMPARISON OF THE RATINGS OF WORKERS, UNION LEADERS, AND MANAGEMENT OF THE 10 MOTIVATIONAL FACTORS

<table>
<thead>
<tr>
<th>Factor</th>
<th>Rank by</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Workers</td>
</tr>
<tr>
<td>Steady Work and Job Security</td>
<td>1</td>
</tr>
<tr>
<td>Wages and Payment</td>
<td>1</td>
</tr>
<tr>
<td>Recognition</td>
<td>2</td>
</tr>
<tr>
<td>Type of Work and Interest</td>
<td>3</td>
</tr>
<tr>
<td>Good Supervision</td>
<td>4</td>
</tr>
<tr>
<td>Advancement and Promotion</td>
<td>5</td>
</tr>
<tr>
<td>Good Working Companion</td>
<td>6</td>
</tr>
<tr>
<td>Good Working Conditions</td>
<td>7</td>
</tr>
<tr>
<td>Good Working Hours</td>
<td>8</td>
</tr>
<tr>
<td>Benefits</td>
<td>9</td>
</tr>
</tbody>
</table>

Source: Compiled from Tables V, VIII, and IX on pages 115, 131, and 136.
SUMMARY AND CONCLUSION

Neither managers nor union leaders have accurately interpreted the wants of workers. Both groups have overemphasized factors which are considered relatively unimportant by workers, and underemphasized factors which are considered by workers to be of great importance. While management and union leaders put most of their emphasis on the material benefits, workers want both material and nonmaterial benefits.

In conclusion, the correlation between the opinion of management and workers concerning motivational factors indicates clearly that management does not give careful attention or adequate consideration to motivational factors according to their importance for workers. The results of management surveys show that management up to the present time follows, to a certain extent, the "classical school of management," developed by Taylor and his colleagues. Management still insists that the economical incentives are the most important motivational factors to get the highest satisfaction of workers. The effect of industrial psychology on the philosophy of management is still small. Management-level personnel still does not realize that in the long run the employees want both economical and non-economical incentives equally. As for the short run, the relative importance of the various incentives differ from one time to another according to the immediate needs of the workers. In spite of the large number of surveys which indicate the real wants of workers, management does not seem to give much thought to
their findings. Although management-level personnel were closer to workers' opinions than union leaders in indicating the relative importance of motivational factors, they are still far from the point of understanding the workers' true attitudes.

The small impact of worker attitude surveys on management philosophy could be due to the fact that the study of motivation in personnel administration is relatively new and that management is still in the process of adjusting personnel procedures in accordance with workers' wants. However, management should continue its research concerning workers attitudes by conducting more surveys and by placing considerable weight on foremen's opinions regarding personnel administration procedures. Moreover, since workers attitudes change from time to time, management should adjust constantly its personnel administration philosophy according to the latest information.
CHAPTER VII

EMPLOYMENT SECURITY

The previous discussion showed that employment security has always been a matter of great concern to employees. Employment security is considered by the working group as one of the most important morale factors. Four major sources of economic insecurity are widely recognized: loss of job because of disability resulting from illness and accidents; loss of job because of disability resulting from old age; loss of job because of fluctuations in business resulting from the general economic conditions of the country, the industry, and the firm; and loss of job because of changes in technology.

Workers have received increasing protection against the hazards resulting from the first two sources through governmental legislation and through collective bargaining agreements. Protection against the hazard of losing income because of illness and accidents is partially provided by states through workman's compensation laws, supplemented in some cases by private programs. Protection against the hazard of inadequate income because of old age is provided by Federal old age and survivors insurances, frequently supplemented by private pension programs.

This chapter deals with the third source of economic insecurity, that is, the fear of loss of job because of business fluctuations. This fear was ranked high on the list by workers in the attitude surveys.

Unemployment because of business fluctuations might be caused by cyclical or seasonal variations in business activities. Cyclical unemployment is that which is associated with the depression and recession phase of business cycles; seasonal unemployment is that which results from seasonal fluctuations in business.

CYCLICAL UNEMPLOYMENT

Cyclical unemployment usually affects a large proportion of the working force and lasts for a relatively long time. Its prevention has always been a major economic problem in this country. During the last 150 years there have been 17 depressions and 52 recessions. In general, the highest percentage of unemployment since 1900 was experienced in 1907-1908, 1914-1915, 1921-1922, and 1930-1935. The last depression is considered by far the most severe of all; it was during this period that the percentage of unemployed went as high as 25 per cent of the civilian labor force. That depression gave particular emphasis to the fact that mass unemployment is one of the major types of economic insecurity. A study of the percentage of unemployed workers in the last

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10 years shows that the percentage of unemployment fluctuates sharply from one year to another according to the general economic conditions of the country. (See Table XI, page 146). During the last 10 years the annual average of unemployment was never below 2.5 per cent of the civilian labor force. The percentage of unemployed workers ranged from 2.5 per cent in 1953 to 7.7 per cent in March, 1958.

Although these overall figures show the general effect of business cycles on the civilian labor force, they do not show the effect of these cycles on employment in the individual industries. In fact, business cycles do not affect all industries equally, for while their impact is heavy on some industries, it is relatively low on others. In general, such cycles cause greater fluctuations in unemployment in heavy industries which produce machines and equipment used by other industries to turn out consumer goods. Since yearly average figures of unemployment by industry are not available, layoff rates are used. Layoff rates tend to indicate the percentage of separations caused by economic fluctuations from one year to another. An analysis of the annual average of layoff rates in 13 selected industries in the last seven years shows clearly that the effect of such cycles is not the same in all industries. (See Table XII, page 147). The average layoff rate for the seven-year period from 1951 to 1957 ranges from 0.8 per cent in the tobacco industry to 2.4 per cent in the transportation equipment industry. Also, the effects of economic conditions differ widely from one industry to another within a given year. While 2.3 per cent of the workers in the lumber industry were laid off in
<table>
<thead>
<tr>
<th>Year</th>
<th>Civilian Labor Force in Thousands</th>
<th>Unemployed Persons in Thousands</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1949</td>
<td>62,105</td>
<td>3,395</td>
<td>5.5</td>
</tr>
<tr>
<td>1950</td>
<td>63,089</td>
<td>3,142</td>
<td>5.0</td>
</tr>
<tr>
<td>1951</td>
<td>62,884</td>
<td>1,879</td>
<td>3.0</td>
</tr>
<tr>
<td>1952</td>
<td>62,966</td>
<td>1,673</td>
<td>2.7</td>
</tr>
<tr>
<td>1953</td>
<td>63,815</td>
<td>1,602</td>
<td>2.5</td>
</tr>
<tr>
<td>1954</td>
<td>64,468</td>
<td>3,230</td>
<td>5.0</td>
</tr>
<tr>
<td>1955</td>
<td>65,847</td>
<td>2,654</td>
<td>4.0</td>
</tr>
<tr>
<td>1956</td>
<td>67,530</td>
<td>2,551</td>
<td>3.8</td>
</tr>
<tr>
<td>1957</td>
<td>67,946</td>
<td>2,936</td>
<td>4.3</td>
</tr>
<tr>
<td>1958 March</td>
<td>67,510</td>
<td>5,198</td>
<td>7.7</td>
</tr>
</tbody>
</table>

Source: *Statistical Abstract of the United States, (1958).*
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing</td>
<td>1.2</td>
<td>1.1</td>
<td>1.3</td>
<td>1.9</td>
<td>1.2</td>
<td>1.5</td>
<td>1.7</td>
<td>1.4</td>
</tr>
<tr>
<td>Durable Goods</td>
<td>1.1</td>
<td>1.2</td>
<td>1.4</td>
<td>2.2</td>
<td>1.3</td>
<td>1.6</td>
<td>1.9</td>
<td>1.5</td>
</tr>
<tr>
<td>Lumber</td>
<td>1.6</td>
<td>1.5</td>
<td>1.8</td>
<td>2.1</td>
<td>1.9</td>
<td>2.1</td>
<td>2.3</td>
<td>1.9</td>
</tr>
<tr>
<td>Furniture</td>
<td>1.6</td>
<td>0.8</td>
<td>1.4</td>
<td>1.9</td>
<td>1.2</td>
<td>1.4</td>
<td>1.9</td>
<td>1.5</td>
</tr>
<tr>
<td>Machinery</td>
<td>0.4</td>
<td>1.0</td>
<td>1.0</td>
<td>1.8</td>
<td>0.8</td>
<td>0.9</td>
<td>1.6</td>
<td>1.1</td>
</tr>
<tr>
<td>Transportation Equipment</td>
<td>2.1</td>
<td>1.7</td>
<td>2.3</td>
<td>3.1</td>
<td>2.2</td>
<td>2.8</td>
<td>2.6</td>
<td>2.4</td>
</tr>
<tr>
<td>Non-durable Goods</td>
<td>1.3</td>
<td>1.2</td>
<td>1.2</td>
<td>1.5</td>
<td>1.1</td>
<td>1.2</td>
<td>1.4</td>
<td>1.3</td>
</tr>
<tr>
<td>Food Products</td>
<td>2.0</td>
<td>1.9</td>
<td>2.2</td>
<td>2.6</td>
<td>2.4</td>
<td>2.1</td>
<td>2.4</td>
<td>2.2</td>
</tr>
<tr>
<td>Tobacco</td>
<td>1.3</td>
<td>0.7</td>
<td>0.7</td>
<td>0.6</td>
<td>0.6</td>
<td>0.6</td>
<td>0.9</td>
<td>0.8</td>
</tr>
<tr>
<td>Textile</td>
<td>1.8</td>
<td>1.5</td>
<td>1.4</td>
<td>1.7</td>
<td>1.2</td>
<td>1.4</td>
<td>1.7</td>
<td>1.5</td>
</tr>
<tr>
<td>Men's Clothing</td>
<td>2.3</td>
<td>1.7</td>
<td>0.8</td>
<td>1.9</td>
<td>1.2</td>
<td>1.3</td>
<td>1.7</td>
<td>1.6</td>
</tr>
<tr>
<td>Chemical Products</td>
<td>0.5</td>
<td>0.6</td>
<td>0.6</td>
<td>0.7</td>
<td>0.4</td>
<td>0.5</td>
<td>0.6</td>
<td>0.6</td>
</tr>
<tr>
<td>Rubber Products</td>
<td>0.7</td>
<td>0.7</td>
<td>1.2</td>
<td>1.4</td>
<td>0.7</td>
<td>1.1</td>
<td>1.1</td>
<td>1.0</td>
</tr>
<tr>
<td>Petroleum and Cool Products</td>
<td>0.2</td>
<td>0.3</td>
<td>0.3</td>
<td>0.4</td>
<td>0.4</td>
<td>0.3</td>
<td>0.5</td>
<td>0.4</td>
</tr>
<tr>
<td>Leather Products</td>
<td>1.4</td>
<td>0.9</td>
<td>0.8</td>
<td>1.1</td>
<td>0.9</td>
<td>1.2</td>
<td>1.2</td>
<td>1.1</td>
</tr>
</tbody>
</table>

1957, only 0.5 per cent of the workers in the petroleum and coal industries were laid off.

Not only do the layoff rates differ from one industry to another, but the rates also differ from one area to another. For example, the layoff rate in 1957 was less than one per cent in the District of Columbia, while it was almost three and one half per cent in Florida. (See Table XIII, page 149.)

Thus, cyclical unemployment differs in three respects: from year to year, among the different industries, and among the different areas of the country.

Various devices have been used by individual firms to eliminate the effects of recessions on employment, but they have not provided security against major cyclical fluctuations and probably cannot provide it. The maintenance of full employment depends on overall national economic policies as well as general business conditions. In fact, the American policy embodied in the Employment Act of 1946 has already been successful in meeting the employment problem in the recessions of 1949, 1954, and 1958. In section 2 of the Act, Congress declared that it is the continuing policy and responsibility of the Federal Government to use all practicable means to provide employment opportunities for all those who are able, willing, and seeking for work, and to

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3 Yoder, op. cit., p. 530.
<table>
<thead>
<tr>
<th>State</th>
<th>Layoff Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arizona</td>
<td>2.3</td>
</tr>
<tr>
<td>California</td>
<td>2.1</td>
</tr>
<tr>
<td>Connecticut</td>
<td>1.3</td>
</tr>
<tr>
<td>Delaware</td>
<td>2.1</td>
</tr>
<tr>
<td>District of Columbia</td>
<td>0.9</td>
</tr>
<tr>
<td>Florida</td>
<td>3.4</td>
</tr>
<tr>
<td>Georgia</td>
<td>2.4</td>
</tr>
<tr>
<td>Indiana</td>
<td>2.1</td>
</tr>
<tr>
<td>Kansas</td>
<td>1.8</td>
</tr>
<tr>
<td>Kentucky</td>
<td>2.3</td>
</tr>
<tr>
<td>Maine</td>
<td>3.1</td>
</tr>
<tr>
<td>Maryland</td>
<td>2.0</td>
</tr>
<tr>
<td>Minnesota</td>
<td>2.3</td>
</tr>
<tr>
<td>Missouri</td>
<td>1.8</td>
</tr>
<tr>
<td>Nevada</td>
<td>2.2</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>2.0</td>
</tr>
<tr>
<td>New Mexico</td>
<td>1.9</td>
</tr>
<tr>
<td>New York</td>
<td>2.4</td>
</tr>
<tr>
<td>North Carolina</td>
<td>1.4</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>2.5</td>
</tr>
<tr>
<td>South Carolina</td>
<td>1.3</td>
</tr>
<tr>
<td>Washington</td>
<td>1.9</td>
</tr>
<tr>
<td>West Virginia</td>
<td>1.8</td>
</tr>
</tbody>
</table>

promote maximum employment, production, and purchasing power. 4

However, although fluctuations in employment since 1949 have not been great, there is no reason to believe that the threat of cyclical unemployment has been ended. On the contrary, no basic change in the economic policy of this country has occurred since the end of the last depression to justify the view that the American economy never again will suffer from major depressions. 5 Although the United States Government controls the economic policies of this country, the degree of its interference to provide a continuous balance between investments and expenditures is relatively small if compared with the amount of government control in other industrial nations. On the other hand, the fact that more government control has been effective in some other countries does not mean that more governmental regulations will be successful in the United States. Successful government control requires a variety of circumstances that differ widely from one country to another and in the same country from one industry to another.

Therefore, since the control of major cyclical unemployment is beyond the ability of the government according to the past experience, 6

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and since more governmental regulations are not desired by the American people, then the logical conclusion is that cyclical unemployment will continue in the future.

**SEASONAL UNEMPLOYMENT**

Seasonal unemployment appears in most industries but especially those in which production depends partially on the habits of the buyers, the supply of raw materials, the weather, the style, and the like. Unstable schedule of production in such industries causes a considerable fluctuation in layoff rates and in number of employed workers from one month to another; Table XIV, page 152, shows the layoff in 1947 in 10 different industries which are classified as durable and non-durable. These 10 industries were chosen because they show clearly the effects of seasonal operations on monthly employment fluctuations. In general, the seasonal fluctuations of layoff rates in the durable goods industries have been higher than in the non-durable goods industries. While the layoff rates for durable goods ranged from 1.3 per cent in June to 3.0 per cent in November with an annual rate of 1.9 per cent, they ranged from 0.8 per cent in June to 2.1 per cent in December with an average rate of 1.4 per cent for non-durable goods.

The highest differential of layoff rates between these 10 industries

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### TABLE XIV

MONTHLY FLUCTUATION OF LAYOFF RATES IN SELECTED INDUSTRIES IN 1957
(PER 100 EMPLOYEES)

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Durable Goods</td>
<td>1.5</td>
<td>1.5</td>
<td>1.7</td>
<td>1.5</td>
<td>1.6</td>
<td>1.3</td>
<td>1.4</td>
<td>1.8</td>
<td>2.1</td>
<td>2.7</td>
<td>3.0</td>
<td>2.9</td>
<td>1.9</td>
</tr>
<tr>
<td>Lumber</td>
<td>2.1</td>
<td>3.4</td>
<td>2.4</td>
<td>1.5</td>
<td>1.5</td>
<td>0.7</td>
<td>1.8</td>
<td>3.0</td>
<td>1.6</td>
<td>3.2</td>
<td>3.5</td>
<td>3.8</td>
<td>2.3</td>
</tr>
<tr>
<td>Furniture</td>
<td>2.0</td>
<td>1.5</td>
<td>1.6</td>
<td>1.5</td>
<td>1.5</td>
<td>1.7</td>
<td>0.9</td>
<td>1.3</td>
<td>1.5</td>
<td>3.0</td>
<td>2.8</td>
<td>2.6</td>
<td>1.9</td>
</tr>
<tr>
<td>Machinery</td>
<td>0.7</td>
<td>1.0</td>
<td>1.2</td>
<td>1.2</td>
<td>1.7</td>
<td>1.4</td>
<td>1.2</td>
<td>1.7</td>
<td>1.8</td>
<td>2.4</td>
<td>2.9</td>
<td>1.8</td>
<td>1.6</td>
</tr>
<tr>
<td>Transportation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment</td>
<td>2.0</td>
<td>1.6</td>
<td>1.8</td>
<td>1.8</td>
<td>2.0</td>
<td>1.6</td>
<td>2.5</td>
<td>3.3</td>
<td>4.1</td>
<td>4.3</td>
<td>3.5</td>
<td>3.6</td>
<td>2.6</td>
</tr>
<tr>
<td>Non-durable Goods</td>
<td>1.6</td>
<td>1.1</td>
<td>1.3</td>
<td>1.4</td>
<td>1.4</td>
<td>0.8</td>
<td>1.0</td>
<td>1.2</td>
<td>1.2</td>
<td>1.4</td>
<td>2.0</td>
<td>2.1</td>
<td>1.4</td>
</tr>
<tr>
<td>Food Products</td>
<td>3.3</td>
<td>2.1</td>
<td>2.0</td>
<td>2.1</td>
<td>2.1</td>
<td>1.2</td>
<td>1.9</td>
<td>2.4</td>
<td>2.0</td>
<td>2.0</td>
<td>3.4</td>
<td>2.7</td>
<td>2.4</td>
</tr>
<tr>
<td>Tobacco Products</td>
<td>1.3</td>
<td>0.4</td>
<td>1.8</td>
<td>0.4</td>
<td>0.5</td>
<td>0.2</td>
<td>0.8</td>
<td>0.9</td>
<td>0.7</td>
<td>0.5</td>
<td>0.3</td>
<td>1.5</td>
<td>0.9</td>
</tr>
<tr>
<td>Textile Products</td>
<td>1.7</td>
<td>1.2</td>
<td>1.8</td>
<td>1.7</td>
<td>1.7</td>
<td>1.2</td>
<td>1.2</td>
<td>1.4</td>
<td>1.4</td>
<td>1.9</td>
<td>2.1</td>
<td>2.4</td>
<td>1.7</td>
</tr>
<tr>
<td>Chemicals Products</td>
<td>0.4</td>
<td>0.6</td>
<td>0.6</td>
<td>0.5</td>
<td>0.5</td>
<td>0.3</td>
<td>0.7</td>
<td>0.8</td>
<td>0.6</td>
<td>0.7</td>
<td>1.0</td>
<td>1.2</td>
<td>0.6</td>
</tr>
<tr>
<td>Leather Products</td>
<td>0.9</td>
<td>0.8</td>
<td>1.1</td>
<td>1.3</td>
<td>1.1</td>
<td>0.5</td>
<td>0.7</td>
<td>1.1</td>
<td>1.6</td>
<td>1.2</td>
<td>1.4</td>
<td>1.3</td>
<td>1.2</td>
</tr>
<tr>
<td>Rubber Products</td>
<td>1.3</td>
<td>1.3</td>
<td>1.5</td>
<td>1.7</td>
<td>1.1</td>
<td>0.7</td>
<td>0.5</td>
<td>1.2</td>
<td>0.7</td>
<td>0.8</td>
<td>1.4</td>
<td>2.3</td>
<td>1.1</td>
</tr>
</tbody>
</table>

153

was in the lumber industry, where the difference between the highest and the lowest rates in 1957 was 3.1 per cent. Second to the lumber industry was the transportation equipment industry. The least variation was found in the chemicals industry where the difference was less than one per cent.

Furthermore, the percentage of change in layoff rates from the lowest to the highest rate in the same industry was very large. It was never less than 100 per cent in any industry whether the industry was of the durable or the nondurable group. In some industries the layoff rate was in certain months eight times higher than in other months in the same year. The highest percentage was in the tobacco industry, while the lowest was in the textile industry. (See Table XV, page 154.)

Moreover, the percentage change in seasonal fluctuations in the nondurable goods was higher than in the durable goods. This was partially due to the fact that most of these industries depend upon agricultural raw materials which are available only during certain seasons. In addition, the demand for the products of some of them is mostly seasonal.

In general, it appears that the layoff rates are usually the lowest in June and July and highest in November and December for both durable and nondurable goods. That means that workers in most industries, durable or nondurable, suffer a high rate of layoff in the winter. This makes the problem of seasonal unemployment more serious because the workers who are laid off in one industry in the winter months have
### TABLE XV

PERCENTAGE CHANGES IN LAYOFF RATES IN SELECTED INDUSTRIES IN 1957

<table>
<thead>
<tr>
<th>Industry</th>
<th>Lowest Rate</th>
<th>Highest Rate</th>
<th>Percentage Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Durable goods</td>
<td>1.3</td>
<td>3.0</td>
<td>131</td>
</tr>
<tr>
<td>Lumber</td>
<td>.7</td>
<td>3.8</td>
<td>443</td>
</tr>
<tr>
<td>Furniture</td>
<td>.9</td>
<td>3.0</td>
<td>233</td>
</tr>
<tr>
<td>Machinery</td>
<td>.7</td>
<td>2.9</td>
<td>314</td>
</tr>
<tr>
<td>Transportation Equipment</td>
<td>1.6</td>
<td>4.3</td>
<td>169</td>
</tr>
<tr>
<td>Nondurable Goods</td>
<td>.8</td>
<td>2.0</td>
<td>150</td>
</tr>
<tr>
<td>Food Products</td>
<td>1.2</td>
<td>3.4</td>
<td>183</td>
</tr>
<tr>
<td>Tobacco Products</td>
<td>.2</td>
<td>1.8</td>
<td>800</td>
</tr>
<tr>
<td>Textile Products</td>
<td>1.2</td>
<td>2.4</td>
<td>100</td>
</tr>
<tr>
<td>Chemicals Products</td>
<td>.3</td>
<td>1.2</td>
<td>300</td>
</tr>
<tr>
<td>Leather Products</td>
<td>.5</td>
<td>1.6</td>
<td>220</td>
</tr>
<tr>
<td>Rubber Products</td>
<td>.5</td>
<td>2.3</td>
<td>360</td>
</tr>
</tbody>
</table>

difficulty in finding other jobs since winter is also a high layoff season in other industries.

In order to analyze seasonal unemployment problems from another point of view, the number of workers in selected industries for each of the twelve months of 1957 was obtained. (See Table XVI, page 156). In this table the seasonal fluctuations in employment were clearly shown. The results were comparable to previous findings. The low season of employment for both durable and nondurable goods was during the winter months. However, there is a slight contrast in the high season of employment between Tables XIV and XVI, pages 152 and 156. For example, while the lowest rate of layoff for the durable goods was in June, according to Table XV, the lowest rate was during January, according to Table XVI. Although there should not be such differences, they do exist and possibly could be attributed to the fact that 1957 was a year of steady decline in employment in durable goods industries. That continuous drop in employment was an indication of the approach of the 1958 recession.

UNION POLICY TOWARD THE EMPLOYMENT SECURITY PROBLEM

Unions have succeeded in achieving for workers a type of employment security through their collective bargaining agreements. They have fought hard to develop comprehensive agreements for dealing with
<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Durable Goods</td>
<td>9,990</td>
<td>9,992</td>
<td>9,976</td>
<td>9,927</td>
<td>9,895</td>
<td>9,913</td>
<td>9,756</td>
<td>9,802</td>
<td>9,710</td>
<td>9,687</td>
<td>9,593</td>
<td>9,426</td>
</tr>
<tr>
<td>Machinery</td>
<td>1,752</td>
<td>1,764</td>
<td>1,764</td>
<td>1,750</td>
<td>1,728</td>
<td>1,715</td>
<td>1,686</td>
<td>1,659</td>
<td>1,657</td>
<td>1,636</td>
<td>1,608</td>
<td>1,586</td>
</tr>
<tr>
<td>Motor Vehicles</td>
<td>873</td>
<td>864</td>
<td>853</td>
<td>823</td>
<td>813</td>
<td>794</td>
<td>763</td>
<td>773</td>
<td>674</td>
<td>753</td>
<td>827</td>
<td>831</td>
</tr>
<tr>
<td>Canning</td>
<td>54</td>
<td>55</td>
<td>55</td>
<td>57</td>
<td>57</td>
<td>58</td>
<td>60</td>
<td>61</td>
<td>59</td>
<td>55</td>
<td>53</td>
<td>52</td>
</tr>
<tr>
<td>Non-durable Goods</td>
<td>6,969</td>
<td>6,953</td>
<td>6,957</td>
<td>6,895</td>
<td>6,867</td>
<td>6,939</td>
<td>6,954</td>
<td>7,153</td>
<td>7,195</td>
<td>7,096</td>
<td>6,988</td>
<td>6,903</td>
</tr>
<tr>
<td>Food Products</td>
<td>1,459</td>
<td>1,429</td>
<td>1,431</td>
<td>1,433</td>
<td>1,452</td>
<td>1,511</td>
<td>1,579</td>
<td>1,655</td>
<td>1,674</td>
<td>1,591</td>
<td>1,519</td>
<td>1,476</td>
</tr>
<tr>
<td>Tobacco Products</td>
<td>97</td>
<td>93</td>
<td>86</td>
<td>83</td>
<td>82</td>
<td>83</td>
<td>80</td>
<td>100</td>
<td>108</td>
<td>104</td>
<td>96</td>
<td>92</td>
</tr>
<tr>
<td>Textile Products</td>
<td>1,027</td>
<td>1,025</td>
<td>1,020</td>
<td>1,012</td>
<td>1,004</td>
<td>1,004</td>
<td>986</td>
<td>1,002</td>
<td>1,003</td>
<td>998</td>
<td>985</td>
<td>978</td>
</tr>
<tr>
<td>Paper Products</td>
<td>576</td>
<td>573</td>
<td>575</td>
<td>575</td>
<td>573</td>
<td>579</td>
<td>570</td>
<td>576</td>
<td>581</td>
<td>580</td>
<td>578</td>
<td>575</td>
</tr>
<tr>
<td>Chemicals</td>
<td>835</td>
<td>836</td>
<td>840</td>
<td>842</td>
<td>838</td>
<td>832</td>
<td>829</td>
<td>833</td>
<td>834</td>
<td>832</td>
<td>828</td>
<td>825</td>
</tr>
<tr>
<td>Rubber Products</td>
<td>275</td>
<td>271</td>
<td>270</td>
<td>250</td>
<td>262</td>
<td>256</td>
<td>260</td>
<td>265</td>
<td>267</td>
<td>270</td>
<td>269</td>
<td>263</td>
</tr>
</tbody>
</table>

the layoff problem. Unions, through collective bargaining agreements, forced management to layoff workers according to certain regulations. Clauses in such agreements serve to reduce employees insecurity by providing them with various job protections. Some clauses in these agreements provide that seniority will be a major factor to be taken into consideration when laying off the workers. In 1954-55, out of 1,743 agreements—each agreement covering 1,000 workers or over—involving 7,642,000 workers in all industries, 1,347 agreements covering 5,815,000 workers had some form of provision concerning layoffs.

Of these 1,347 agreements, 579 involving 2,974,000 workers stated that straight seniority should be applied when laying off workers, and 749 agreements covering 2,738,000 workers stated that length of service and other factors should be taken into account when management used this right.

Other clauses in such agreements stated that working hours per week should be reduced prior to layoffs in order to give a last chance for every worker to be on his job. In 1954-55, 356 agreements involving 2,212,000 workers contained such provisions. One hundred thirty-five of those agreements covering 662,000 workers stated that reduction in working hours in lieu of immediate layoff should be discussed by a joint management-union committee before management makes a final decision.

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8 Statistics are obtained from different issues of: Monthly Labor Review, LXXIX (1956); LXXX (1957).
in such a matter. In five agreements the decision was left to the unions, and in 42 agreements the decision was at the discretion of management.

Provisions for advance notice before a layoff action was taken was also an important clause in 408 agreements in 1954-55. These clauses varied from a one-day notice to a notice of more than a week.

The previous discussion shows that unions fought and still fight to get a form of employment security for their members. However, employment security cannot be obtained through the efforts of unions alone. Unions' ability to control the fluctuations in employment or layoff rates is limited to the amount of cooperation between management and unions concerning this matter.

**UNEMPLOYMENT BENEFITS**

Workers suffer from instability in employment primarily because their wages decrease sharply, or stop completely, during unemployment periods. To a limited extent unemployment benefits help to provide them with the necessary cash for their immediate needs, in addition to a public job placement program. These unemployment compensation payments represent one of the major public programs established to guarantee a minimum of security against the hazards of unemployment. Its immediate purpose is to provide a minimum income rather than
complete financial security. The various state programs are based on
the assumption that there will always be a certain amount of unemploy-
ment. In fact, they are not designed to remove the causes of unem­
ployment, but to modify, or alleviate the effects. However, to a certain
extent they relieve management and the unions of the responsibility of
finding jobs for the unemployed workers.

In most states unemployment benefits are relatively small. In
1954 the average weekly benefits payment in all states was $23.58, the
average potential duration of benefits was 22 weeks, and the average
duration of benefits was 10 weeks. The percentage to be paid to the
unemployed worker also differs from one state to another. It varies
from as little as 25 per cent of the weekly earnings in the State of
Texas, to not more than 40 per cent of the weekly earnings in
Mississippi. In general, however, it is almost a third of the aver­
age weekly earnings. Moreover, the period of coverage differs from
one state to another. It ranges from as low as 16 weeks to a high of
30 weeks, but in the majority of states it runs between 18 and 26 weeks.

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9 M. W. Latimer, Guaranteed Wages - report to the president by
the advisory board (Washington: United States Government Printing

10 "Economics of the Guaranteed Wage," Monthly Labor Review,
LXXVIII (1955), 159.

11 S. H. Unterberger, Guaranteed Wage and Supplementary Un-

12 Yoder, op. cit., p. 531.
This sharp drop in the workers' scale of living when they are out of work explains why they find this program an inadequate solution to the employment security problem. Workers should not suffer a large decrease in their incomes because seasonal unemployment is not necessarily their fault. Seasonal unemployment in many industries is due to a certain extent to the misplanning of management to stabilize the schedule of production. However, this does not mean that management is fully responsible for all seasonal unemployment cases. Employment fluctuations could be due to the misplanning of management, as well as to inadequate management-union cooperation, or to any other factor which is beyond the ability of both management and unions, such as the general conditions of the industry itself.

Essentially, labor wants employment security, and management wants reduced costs and greater profits. The common denominator of these two goals is regularity and continuity of production and employment. In order to achieve this end both parties should have a great desire to obtain production stabilization since it is the only way to maintain steady employment. Steady operations almost always result in better utilization of capital and lessens labor turnover. Moreover,

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greater security for employees means higher morale, better management-labor relations, and an increase in workers' productivity.\(^\text{15}\)

Management can control seasonal fluctuations to a certain extent. Dale stressed the fact that unemployment may be avoided in modern society and that the primary responsibility for continuous employment of labor rests with management. \(^\text{16}\)

Although the demand for the products of several industries is almost inelastic and stable all year round, and although there is no substantial problem of seasonality in raw materials and supplies, the workers in these industries suffer a high rate of seasonal unemployment. For example, the seasonal unemployment was 3.9 per cent in drugs and medicines industries; 5.8 per cent in the petroleum refining industry; and 6.5 per cent in the crude petroleum production industry. \(^\text{17}\) If these relationships are true in these industries, then management is responsible for such fluctuations in employment. Furthermore, since management has succeeded in providing stable employment for their


\(^{17}\) The seasonal unemployments in the drug and medicines industry were 11,800 workers; in the petroleum refining industry 10,700 workers, and in crude petroleum production industry 19,200 workers. These figures are obtained from *Monthly Labor Review*, LXXXI (1958).
employees in some industries which suffer an unstable supply of materials and demand for their products, then the logical conclusion is that management can maintain a greater degree of stability of employment for the workers all year round through better planning and organizing.

Actually the decision to introduce employment security plans has always rested with management, or management and union jointly, and has been voluntary, although in some cases plans have been devised as a result of regular collective bargaining. Witte reported that the earliest plans for guaranteed annual wages were devised by industries whose managers looked primarily to the welfare of their employees and that such plans were introduced in many firms where no union was existing at the time. The adoption of pension plans, group insurance and the like by many employers during the last few decades is of itself an evidence that management believes that security is an important factor in morale.

SIGNIFICANCE OF GUARANTEED ANNUAL WAGE PLANS

The most perfect security against the hazards of unemployment is provided in programs that guarantee steady employment or stabilized

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18 Witte, op. cit., p. 307.
Almost all workers want steady employment. However, if they cannot achieve a reasonably high income from such employment, then they at least want to be assured of a regular income which provides them with a reasonable standard of living all the year through. Guaranteed annual wage plans appear to them the most satisfactory method for getting that security. At the present time guaranteed annual wage plans are considered by wage earners as a symbol of employment security, although theoretically these plans do not assure guaranteed employment.

A guaranteed annual wage plan involves assurance by management that a certain income will be paid to workers for a specified time period. On the other hand, a guaranteed employment plan is an assurance by management to provide workers with a certain number of hours of work for a specific period of time. No assurance in these types of plans is given in regard to wages which may be changed in accordance with the circumstances. This explanation of the two plans contrasts with the statement by Yoder that guaranteed employment and guaranteed wages are the same. Also, it conflicts with the conclusion drawn by


20 Unterberger, op. cit., p. 3.

21 Garbarino, op. cit., p. 2.


23 Yoder, op. cit., p. 532.
Slichter in which he said that guaranteed annual wage plans are guarantees of employment rather than guarantees of a specific income, and that they should be called employment guarantees rather than wage guarantees.

In general, these approaches to interpreting the meaning of guaranteed annual wage plans are true in the sense that employers who offer such plans try to stabilize the employment in their firms to obtain the expected results from such programs. Failing to stabilize employment means that an obligation falls upon management to pay workers for idleness.

**Experience with Guaranteed Annual Wage Plans**

Guaranteed wage plans began more than 60 years ago in this country, but their adoption by management was not rapid until after the great depression. There are a number of outstanding examples of top management planning for stable employment that may be used to illustrate the conclusion that management can provide its workers with a form of stability in employment in spite of instability of raw materials, supply or products demand. The Hormel Company, the Procter and

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Gamble Company, and the Nunn Bush Company are among the earliest pioneers in using guaranteed annual wage plans on a large scale. In general, the experience with such plans has been highly successful in many establishments. They have proved to be a flexible instrument, adaptable to a large variety of circumstances and useful for a multiplicity of purposes.

The Hormel Company, one of the leading meat packing companies, began its annual employment plan in 1929 in spite of the fluctuating supply of meat. Even then, it took a whole decade before all the employees were covered with this plan.

The Procter and Gamble Company, a leader in the manufacture of soaps and fats, provided a steady employment program as early as 1938 in spite of the fact that the monthly sales for these products fluctuated widely. Although there has been this seasonal fluctuation, the annual sales have varied only to the extent of annual growth in the use of the company's products.

In 1955, the National Sugar Company made an agreement with its workers to protect them against unemployment hazards in spite of the...

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28 Chernick and Hallickson, *op. cit.*, p. 28.

29 Ibid.
fact that per capita consumption of sugar varies widely from summer to winter. However, this agreement did not provide a guarantee against certain risks that are completely beyond the control of management. The management of this company considered that unemployment from such causes is the problem of the community as a whole.

In 1955, the Continental Can Company designed a plan for supplementing state unemployment benefits for a period of 52 weeks, covering 14,000 workers, in spite of the fact that this industry suffers a great seasonal fluctuation. The management of this company succeeded in giving steady employment to its workers by balancing the yearly production by the yearly employment. This balance is based on an estimate of the future according to the experience of the past. This program was so successful that the seasonal fluctuation in employment dropped from 95 per cent to only 33 per cent.

The most outstanding example in recent years is the plan provided for almost half a million workers in the automobile industry. It is a plan for supplementing state employment benefits for a period of 26 weeks.


32 Ibid., p. 419.

Its renewal in 1958 indicated its success. On the other hand, the adoption of this program in the automobile industry could be due to the great impact of unions on management in this respect.

In this connection, Chernick and Hellickson reported that shoe, textile, candy, garment, leather, and machinery manufacturing companies can give year-round work if management plans correctly. Some managers in these different industries have succeeded in maintaining a stabilization in employment in spite of the fact that there is a considerable fluctuation in their supply and demand situations.

These illustrations lead to the belief that management can control to a certain extent the number of jobs in their plants if their operations are successfully planned. However, it is true that there are some kinds of seasonal unemployment which management cannot reduce. The building construction industry is the best example of this case. In this industry, employment depends more largely upon the weather than upon any other factor.

Present Status of Guaranteed Annual Wage Plans

In the analysis of guaranteed annual wage plans, made by the Bureau of Labor Statistics in 1952, it was found that such programs were still few in number and covered a relatively small percentage of the workers.  

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34 Chernick and Hellickson, op. cit., p. 106.

Among a sample of 2,590 collective bargaining agreements it was found that only 184 agreements, or seven per cent of the total, provided for a guarantee of any type. Moreover, these guarantees were generally very limited and most of them provided much less than a full year's pay or restricted the guarantee to particular groups of workers. Only 20 of these 184 agreements were with annual guarantee provisions or covered all or most workers. The other 164 agreements were with weekly or monthly guarantee provisions. Out of these 164 agreements, 115 agreements covered all or most employees and 49 agreements covered particular groups. 36

Government's Role in Guaranteed Annual Wage Plans

Up to the present time the Federal government has had no legislative part in developing the use of guaranteed annual wage plans. The great interest of unions and workers in such plans has raised the question of the extent to which the government should participate in introducing this system on a large scale in industry. While most union leaders favor the idea of adopting this system widely through government legislation, many economists oppose this compulsory approach.

Unions want guaranteed annual wage plans not because they expect it to prevent layoffs entirely but rather to eliminate many kinds of

36 The number of workers covered by these agreements is not known since some of them cover a particular group of workers in the organization.
employment fluctuations, to reduce the number of workers laid off yearly, and to shorten the duration of layoffs in general. Their leaders think the adoption of these plans makes employment fluctuation so expensive that they will serve as a motivation for management to stabilize operations and to avoid seasonal reductions in employment as far as possible. 37

In 1956, Walter Reuther stated that the new goal of labor leaders is a guaranteed annual wage for 52 weeks, or 104 weeks, or even 156 weeks in collective bargaining contracts. 38 Although this statement reflects only the opinion of Reuther, the fact that he holds the key pose of president of the Industrial Union Department, A. F. of L.-C. I. O., that he was in touch with the workers' wants during the 1950's, and the fact that his attitude is effected by the general climate of the internal situation in the largest labor organization should be taken into consideration when evaluating his view.

Philip Murray, who was then the president of the C. I. O., in defense of the United Steel Workers' demand for a guaranteed annual wage plan in 1946, stated that an assurance of full economic security to workers would help promote a continued mass purchasing power and help stabilize the business cycle. 39 This approach should be given

37 Unterberger, op. cit., p. 10.
considerable weight because wages and salaries are a relatively large part of the national income and certainly their stabilization would have a powerful influence in the maintainance of consumer expenditures. For example, in the last 10 years the average percentage of salaries and wages in private establishments has been 54 per cent of the national income, (see Table XVII, page 171.) This percentage was never less than 51 per cent, nor higher than 56 per cent.

The influence of guaranteed annual wage plans to maintain a stabilized economy is likely to be true in times of relatively mild recessions. In such times the stability of wages which is provided by the guaranteed annual wage plans helps in maintaining a steady spending on consumption goods throughout the year. This stability in income prevents the volume of the national expenditure from declining rapidly as it would in the absence of such a program. Furthermore, since maintaining wage incomes is important at the beginning of a downturn in the level of economic activity, then a wide adoption of guaranteed annual wage plans might be sufficient to prevent a recession from developing into a full-scale depression.40 However, it is a misjudgment to expect a single device such as the guaranteed annual wage plan to remove the causes of depressions and end mass unemployment.41


41 The Economics of the Guaranteed Wage (Washington: Chamber of Commerce of The United States, 1954), p. 34.
TABLE XVII

PERCENTAGE OF SALARIES AND WAGES IN PRIVATE ESTABLISHMENTS TO THE NATIONAL INCOME FROM 1948 TO 1957

<table>
<thead>
<tr>
<th>Year</th>
<th>National Income in Millions</th>
<th>Salaries and Wages in Millions</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1948</td>
<td>$221,641</td>
<td>$116,424</td>
<td>53</td>
</tr>
<tr>
<td>1949</td>
<td>216,193</td>
<td>113,873</td>
<td>53</td>
</tr>
<tr>
<td>1950</td>
<td>239,956</td>
<td>124,297</td>
<td>52</td>
</tr>
<tr>
<td>1951</td>
<td>277,041</td>
<td>142,056</td>
<td>51</td>
</tr>
<tr>
<td>1952</td>
<td>290,177</td>
<td>151,987</td>
<td>52</td>
</tr>
<tr>
<td>1953</td>
<td>302,129</td>
<td>163,466</td>
<td>54</td>
</tr>
<tr>
<td>1954</td>
<td>298,955</td>
<td>161,183</td>
<td>54</td>
</tr>
<tr>
<td>1955</td>
<td>324,068</td>
<td>174,446</td>
<td>54</td>
</tr>
<tr>
<td>1956</td>
<td>343,620</td>
<td>189,383</td>
<td>55</td>
</tr>
<tr>
<td>1957</td>
<td>358,000</td>
<td>199,000</td>
<td>56</td>
</tr>
<tr>
<td>Average</td>
<td>287,178</td>
<td>153,611</td>
<td>54</td>
</tr>
</tbody>
</table>

usually change their spending habits in depression periods or when they expect a depression. They attempt to concentrate their spending on the necessities, reduce their spending for luxuries, and increase their savings. Their purchase of automobiles, appliances, and similar items will be subject to considerable fluctuation. Moreover, expenditures for consumer goods might not aid capital goods industries. In fact, the cyclical fluctuation in business is the greatest limitation to the successful adoption of guaranteed annual wage plans.

On the other hand, where unemployment is primarily a matter of seasonal fluctuations it seems that the guaranteed annual wage plan is a suitable device to help solve the problem of workers' economic insecurity. Hansen and Samuelson have reported that the greatest contribution of the guaranteed annual wage plans is to help stabilize seasonal production and provide steadier employment.

The introduction and utilization of guaranteed annual wages should rest with management and should not be enforced on industry by legislation for several reasons. It is almost impossible to have a guaranteed annual wage plan in all types of business. In 1946 Frank Martel, president of the Detroit and Wayne County Federation of Labor, criticized such plans as impractical in seasonal industries. He has taken


the position that workers in these industries can be compensated for periods of idleness only through high wage rates.\textsuperscript{44} He probably meant this statement to apply to those industries where the operation depends mostly upon seasonal forces over which management has no control, such as the ship-building industry. It is actually a waste for the employer to be forced to pay his full working force all year-round if he is in business only during a part of the year. It is the responsibility of society and not the responsibility of management to find work for workers in those industries during slack seasons.

Not all firms in each industry are of the same size, and it is a misjudgment to expect that certain standards can be set up for an industry with equal stress on each firm within that industry. Small firms have limited financial capacity and cannot afford guaranteed annual wage plans, especially where such plans will convert an important part of their flexible costs into fixed costs. Moreover, these small firms have less of an assured market, as compared with the leading establishments in the industry which exercise a dominant influence over the price of the product. However, that does not mean that all big firms can afford to provide their workers with guaranteed annual wage plans. Emerson P. Schmidt stressed the fact that management's ability to provide steady employment and regular income depends upon the

\textsuperscript{44}Witte, \textit{op. cit.}, p. 311.
solventy rather than the size of the company. Similarly, Sumner Slichter concluded that not every large enterprise has the ability to minimize the layoff rates. If this is the case, then it is too expensive for such large enterprises to adopt a guaranteed annual wage plan. In addition, no single plan fits all cases but must be designed to fit the peculiarities of each industry and the individual conditions of every firm in the same industry.

In a free economy such as the American economy it is unfair to force employers to guarantee wages to their workers and thus convert their variable costs to fixed costs if there is no guarantee for them of the size of the market they serve, or a guarantee of their income.

In some mass production industries the guaranteed annual wage system is not likely to be demanded by unions for some time. The textile industry provides an example of an industry that would be unable to support a guaranteed annual wage system. Because of depressed conditions faced by this industry during the past few years, workers have recognized that the most they can expect under the circumstances is the maintenance of existing wages. However, lack of complete


unionization in some industries unquestionably delays the use of such plans. 48

In order to obtain a guaranteed wage plan from management, workers must be willing to forego a portion of their anticipated wage increase or other types of direct benefits, and not all workers like this. 49 However, Belcher has concluded that workers want a guaranteed wage above everything else and are willing to accept it in lieu of other improvements in wages or working conditions. 50

SUMMARY AND CONCLUSION

The impact of guaranteed annual wage plans on the philosophy of management is completely different from that of the unemployment benefits programs. The unemployment benefits programs relieved management from the responsibility of finding a job for unemployed workers. According to such program it is the responsibility of society rather than the responsibility of management to find jobs for those who are unemployed. On the other hand, guaranteed annual wage plans place on management an indirect responsibility for providing jobs to the working class for the period covered by such plans. Therefore, applying

48Ibid., p. 232.
49Allen, op. cit., p. 39.
guaranteed annual wage plans caused a fundamental change in the philosophy of management toward personnel administration problems. Management in organizations using such plans carry a new responsibility which was not assumed before. This new responsibility is to give a form of unemployment security to each worker covered by such plans.

However, all action toward making workers more secure must come from voluntary collective bargaining between management and labor without any legislative compulsion by the government. Management should assume more responsibility for employment security of workers and should make greater efforts to increase the stability of business. Moreover, unions should be more realistic in bargaining with management on this matter. Such cooperation will help management to provide workers with this desirable achievement.
CHAPTER VIII

FINANCIAL INCENTIVES IN INDUSTRY

Most significant among the desires workers seek from their work is a satisfactory rate of pay. Wages are considered as one of the most important ingredients in the employer-employee relationship; to wage earners, wages represent the principal source of their livelihood and of their prestige; to management, it is one of their principal costs. Prestige is not necessarily associated with wealth; yet the social structure has given money a high prestige value. In many industries wages are the largest single element in production costs. The worker's first reaction to wages is to want them increased, while the manager's first reaction is to desire to reduce wages. It is for this reason that wage policies are a matter of great concern to every manager and worker. These contrasting first reactions explain why wages represent one of the major issues in the collective bargaining procedure. The Bureau of Labor Statistics has reported that 287 collective bargaining contracts, each covering 5,000 workers or more and involving more than five and one half million workers, were in effect on January 1, 1959. These


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agreements probably represented all of the contracts of this size in the United States at that time. All of the agreements include wage clauses as a major provision. (See Table XVIII, page 179.)

EFFECTS OF FINANCIAL INCENTIVES ON OUTPUT

Emphasis from the side of management upon earnings as a source of motivation has led to the development and use of a large variety of wage incentive plans. Such plans are designed to encourage the fullest possible use of individual ability and thereby to increase individual productivity. They vary from the simple piece rate plan to the very complex systems such as the Bedaux plan.

Upon the belief that financial incentives lead to greater output per man and thus lower costs per unit of production, management has continued to press for more use of such plans in many industries. Several studies and reports from industry and government support the fact that using financial incentives helps increase output per man. A survey conducted in 1945 among 514 wage incentive plans in the United States showed an average increase of 37 per cent in output, an average decrease of 12 per cent in labor costs, and an average increase of 18 per cent in earnings. Similar results were obtained from a study conducted by Despain in the New York area among 48 companies.

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TABLE XVIII

AGREEMENTS COVERING 5000 OR MORE WORKERS IN EFFECT JANUARY 1, 1958 AND JANUARY 1, 1959, PROVIDING FOR TERMINATION, WAGE REOPENING, OR WAGE ADJUSTMENT IN ALL INDUSTRIES

<table>
<thead>
<tr>
<th>YEAR</th>
<th>CURRENT AGREEMENTS AVAILABLE</th>
<th>AGREEMENTS WITH PROVISION FOR</th>
<th>AGREEMENTS NOT AVAILABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AGREEMENTS AVAILABLE</td>
<td>AGREEMENTS WITH PROVISION FOR</td>
<td>AGREEMENTS NOT AVAILABLE</td>
</tr>
<tr>
<td></td>
<td>Termination</td>
<td>Specific Wage Reopening</td>
<td>Possible Wage Reopening</td>
</tr>
<tr>
<td></td>
<td>A</td>
<td>A</td>
<td>W</td>
</tr>
<tr>
<td></td>
<td>266</td>
<td>120</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>558.4</td>
<td>2075.5</td>
<td>155</td>
</tr>
</tbody>
</table>

Agreements in Effect
Jan. 1, 1958

*Agreements
**Workers

manufacturing a large variety of products and employing about 14,000 workers. On the other hand, Roy concluded that wage incentive plans may actually result in an increase in costs and less production resulting from the withholding of efforts by workers. However, it is difficult to evaluate the exact value of wage incentives themselves. The installation of such plans from a practical standpoint is usually accompanied by other improvements in working conditions, personnel policies, methods of production and the like. Thus, isolating the specific effect of wage incentives upon productivity under such conditions is almost impossible. But, in general, there is sufficient evidence to prove that wage incentive plans have served the purpose of raising output.

RELATION BETWEEN WAGES AND OUTPUT IN INDUSTRY

From the preceding discussion one can surmise that the installation of wage incentive plans is supposed to increase the output per man per hour in industry. However, statistics show that from 1947 to 1957 the industrial hourly earning index rose about 65 per cent while the

4 D. Despain, "Let Workers Write the Pay Checks," Nation's Business, XXXIII, No. 7 (1945), 96.
6 Viteles, op. cit., p. 29.
output per man per hour rose by only 32 per cent, (See Table XIX, page 182.) According to wage incentive studies, this output should rise by a higher percentage, or at least by a similar percentage, than the increase in the hourly earning index. While the average increase in productivity per man was about three per cent a year during this period, the average increase in hourly earnings was almost six per cent. If these official statistics are accepted as prima facie evidence, then one can conclude that the average hourly earnings rose twice as fast the average output per man per hour each year. Moreover, these hourly earnings indexes do not include fringe benefits. Certainly if the indexes included fringe benefits the percentage changes would be much higher. To the workers, many of these fringe items may not be considered as wages because they do not appear in the "take-home check," but to management they are a vital part of the wage bill.

Wage Rates Not Geared to Productivity

In general, it appears that wage rates in industry are not actually geared to productivity and that in most cases wage payments are for time spent on the job, rather than for production. Moreover, fringe

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Fringe benefits include items such as employer's contribution to insurance premiums, taxes paid by the employers for old age pensions and for employment compensation, payments for premium rates for overtime and holidays, compensation for paid vacations, rest and lunch periods, time spent in grievance settlement, board and room allowances, and night shift premiums.
<table>
<thead>
<tr>
<th>Year</th>
<th>Hourly Earning in Industry Index</th>
<th>Output Per-Man-Per-Hour in Industry Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>1947</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>1948</td>
<td>108.3</td>
<td>102.5</td>
</tr>
<tr>
<td>1949</td>
<td>109.9</td>
<td>104.7</td>
</tr>
<tr>
<td>1950</td>
<td>118.7</td>
<td>113.1</td>
</tr>
<tr>
<td>1951</td>
<td>129.5</td>
<td>114.6</td>
</tr>
<tr>
<td>1952</td>
<td>136.0</td>
<td>116.4</td>
</tr>
<tr>
<td>1953</td>
<td>143.5</td>
<td>120.3</td>
</tr>
<tr>
<td>1954</td>
<td>143.8</td>
<td>123.7</td>
</tr>
<tr>
<td>1955</td>
<td>153.1</td>
<td>130.9</td>
</tr>
<tr>
<td>1956</td>
<td>160.1</td>
<td>131.4</td>
</tr>
<tr>
<td>1957</td>
<td>164.9</td>
<td>132.4</td>
</tr>
</tbody>
</table>

benefits are not directly related to output but are based on attendance and on the accomplishment of a minimum standard of production.

If the fact that output per man per hour has not risen as fast as hourly earnings is accepted, then wage incentive systems are not sufficient within themselves to increase output per man per hour. This conclusion is based upon the assumption that financial incentive systems are widely used in industry. However, several factors should be discussed to determine whether they are widely used in the American industry or if they are declining in importance.

A survey conducted by the Bureau of Labor Statistics in 1945 and 1946 shows that only about 30 per cent of all industrial employees were working under incentive plans. This survey covered 56 manufacturing industries involving approximately 34,000 establishments with about five and one-half million workers and eight non-manufacturing industries of 21,000 establishments with about one and one-half million employees.

The National Industrial Conference Board reported that the percentage of companies using incentive payments for productive work declined from 51.7 in 1939 to 49.7 in 1946. The surveys from which


these results were obtained involved 2,700 and 3,498 cooperating companies, respectively.

Viteles stated that there was some reduction in the use of wage incentive plans during World War II. This fact was contrary to the assumption that during war periods financial incentives should be used in order to meet the increased demand for war production.

Unions, in general, favor payments on a time basis rather than on an output basis. In fact, the use of such plans has been continuously opposed by unions almost since the plans were first introduced. For example, after considerable experience with wage incentive systems, many of the largest units in the automobile industry returned to the hourly pay system so that by 1942 less than 20 per cent of the workers in this industry worked under such plans. Moreover, hourly pay systems have become more popular in this industry in recent years, especially after being affirmed by the latest collective bargaining agreements. On the other hand, some unions are highly in favor of such plans because of the nature of the industry itself as, for example, in the garment industry.

According to a study conducted by the Opinion Research Corporation in 1945, 61 per cent of the 919 manual workers sampled preferred

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10 Viteles, op. cit., p. 25.

to work under hourly rates, while only 36 per cent preferred piece-rate systems. These results were obtained in spite of the fact that the piece-rate system is considered to be the simplest type of a wage incentive plan. The same organization reported again in 1949 that 65 per cent of the 1,021 non-supervisory factory workers preferred hourly pay, while only 29 per cent preferred incentive payment. According to the results obtained from these two national surveys, the percentage of workers who were in favor of wage incentive plans declined from 36 per cent to 29 per cent, which was a reduction of 19 per cent during a four-year period.

Hourly earnings have exceeded gains in output per man per hour by an average of almost three per cent a year since 1947. (See Table XIX, page 182.)

The idea of extra pay for extra output is not practical in many branches of mass production industries where the volume of production depends primarily upon the speed and capacity of machines rather than upon the efforts of workers.

Considering all these factors, one can conclude that the use of wage incentive systems has declined in American industry since 1947. However, there is an important limitation to this conclusion. Neither incentives as stimuli to the workers nor the workers themselves can in

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12 Viteles, op. cit., p. 47.

13 Ibid.
reality increase output and lower costs by themselves. Both an increase in output and a decrease in costs depend to a great degree upon the effectiveness of management. Job evaluation as well as consultation and negotiation with the union are essential as complements to financial incentive plans in personnel administration procedures before an increase in productivity can be expected. Moreover, beside such financial incentives, other nonfinancial incentives are necessary to increase output.

A "Fair Day's Wage" Should Equal a "Fair Day's Work"

Theoretically, a "fair" wage is that which is offered by management and is accepted by workers in a free market. It is the wage which results from the competition of employers to get workers and the competition of workers to get jobs. However, in reality what management considers as a fair wage differs from what unions consider it to be. Disputes usually exist because of this disagreement as to the meaning of the term. Sheldon stated that a fair wage for management is that which is tied to the productivity of workers. On the other hand,


Gompers pointed out that a fair wage for workers is that which is tied primarily to the needs of workers. He did not mention anything about the weight of the workers' productivity in determining their fair wage. In this respect, Tootle stated that what workers want is not merely a fair subsistence wage but a wage that would provide them with all of their necessities and a reasonable quantity of luxuries.

Most writers agree that a fair wage should include the payment to wage earners on the basis of their contribution to industry. That means any increase in a day's pay should be accompanied by at least a corresponding increase in output. However, since the hourly earnings increase twice as fast as the output per man per hour in industry, then one can conclude that the principle that "a fair day's wage" should be equal to "a fair day's wage" should be equal to "a fair day's work" is not being maintained in industry. If this conclusion is true, the great differences between wages and output could be due to one of the two following causes, or to both of them. First, wages move higher than output because unions push them up to an unreasonable extent. Second, output goes up slower than wages because of the


poor planning, organizing, directing, and controlling on the part of management and the lack of technological improvements. These two factors will be discussed in detail. A brief study, however, of the union wage policies might clarify their underlying philosophy toward this problem.

UNION WAGE POLICIES

Union wage policies can be classified into four separate concepts. The first concept prevailed until the beginning of World War I. Under this concept, unions asked for what they called a "fair wage" for their members. The second concept became prominent shortly thereafter. Unions then started to demand a "living wage," that is, to tie wages to the rapid increase in the cost of living. It should be pointed out that there is no essential differences between the "fair wage" and the "living wage." The third concept started about 1925 when the A. F. of L. convention adopted the idea of the "social wage." Dunlop defines "social wage" as the wage that secures for wage earners a reasonable standard of living. Lindblom, stated that wages must be high enough to create the mass purchasing power necessary to buy back from industry its ever increasing product. During the time of

this concept the idea of minimum wages was enforced by law in some industries. The Bacon-Davis Act of 1931 set a lower limit to the wage levels of organizations engaged in Federal construction contracts in excess of $2,000. The Welsh-Healey Act of 1936 empowered the Secretary of Labor to determine minimum wages in many industries holding a government contract exceeding $10,000. The difficult experiences the labor forces faced during the depression of the 1930's was responsible for unions studying and asking for a stable income, i.e., the "guaranteed wage."

In general, unions have changed their wage policies concerning the financial ability of the company with which they negotiate. While Gompers stated several times that he did not care whether business could afford increases in wages or not, and that if a business could not afford such increases it should cease to exist. Labor leaders, at the present time, look first at the ability of the business to offer high wages without a decrease in the amount of business or working hours. Wishart, a union leader, stated in 1955 that unions believe that a "fair day's wage" should be based on a company's ability to pay and that this varies by company and by industry. If unions find

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that the company cannot afford the increase, they include in the collective bargaining agreements clauses for a wage reopening on the hope that things might be better later. In January, 1959, 22 per cent of the agreements, covering at least 5,000 workers, included wage reopening clauses. (See Table XVIII, page 179.)

Responsibility of Unions Toward Increased Wages

From the very beginning of organized activities, unions have maintained a policy that labor is not a commodity and that wages should not be subject to competition. This policy has led some economists to believe that unions are responsible for causing wages to increase much more rapidly than output. Probably this thinking results from the fact that unions at the present time dominate the vital mass production industries such as mining, construction, public utilities, communications, and rail and truck transportation.

Several economists have concluded that increases in wages without similar increases in output raise prices and make money less valuable. Delden stated that union attitudes and actions regarding wages can be expected to contribute to a slow inflation with possibly a gradual increase in the level of unemployment. President Eisenhower stated in 1957 that wage increases that outrun productivity

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are inflationary. However, inflation is the result of many factors, and it is difficult to determine whether a single factor can cause it. Therefore, a discussion of inflation is beyond the scope of this work.

While some economists claim that unions push wages up, others deny it. Waytinsky stated that the level and structure of money wage rates in the United States are unquestionably strongly influenced by union wage action. Similarly, Morton pointed out that it is incorrect to hold unions blameless of bushing wages up. Conversely, Kerr concluded that unions in the United States have no important effect on labor's total share in the national income. Kuhn also stressed the fact that there is considerable uncertainty as to whether unions have had any significant influence on the general level of real earnings in this country or even whether they have raised money wages.

At the present time wages appear to be determined through the

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balance of bargaining power between management and unions. In some industries the weight of the two sides is almost equal, especially in those industries where collective bargaining is usually between a national union and a few of the big employers representing practically the entire industry. (Examples are the automobile and steel industries.) However, it is true that in some industries, the weight of unions in the collective bargaining process is much greater than that of management. This fact is especially true in small industries where a large number of small employers have to bargain with one national union, (for example, in the garment industry.) On the other hand, management has a considerable influence in the bargaining process with some independent unions.

It would be a dangerous policy for unions to push wages up far more than output from the practical point of view. By doing so, prices might go up, resulting in a shift of demand to other substitute products. For instance, in the cotton textile industry unions sometimes accept a wage decrease for this reason. On the other hand, there is an argument that union wage policies in the coal mining industry caused a great decrease in the demand for coal. This argument could be true; however, the shift of demand from coal to gas and electricity could also be due to the characteristic of modern

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technology in industry, and that shift in demand would happen
whether prices of coal went up or not.

Comparison Between Union and Nonunion Wage Rates

Several writers have approached the problem from a different
point of view. Their approach has been to make a comparison be­
tween the wages of the organized and the nonorganized workers in
the same industry as a means of determining whether or not unions
push wages up. But most of them obtained different results from
those expected. Enke and Hoffman reported that annual earnings of
organized workers tend to increase more rapidly than that of the non­
organized workers, and that, although the wages of the latter have
also risen, the general increase has gone to those who are organized. 33
This is substantiated by Waytinsky who stated that on a nationwide
industry basis union members ordinarily do have higher average rates
than other workers in the same occupation. 34 On the other hand,
Douglas pointed out that several studies of the relative differences
between the wage rates of union and nonunion groups indicate little
wage advantage for union members in the long run. 35

33 S. Enke and F. S. Hoffman, "Labor Unions and Employees
Earnings," Personnel, XXVI (1950), 349.

34 Waytinsky, op. cit., p. 493.

35 P. H. Douglas, Real Wages in the United States 1890-1926,
concluded that for the paint, furniture, footwear, cotton textiles, hosiery, automotive parts, and dress industries, there are no significant differentials between the wage rates of those who belong or do not belong to unions. Ross indicated that since 1914 the wage rates of nonunion workers have risen at least as fast as those of the union workers in manufacturing industries. Again he and Goldner stressed the fact that unionization has been a necessity but not a sufficient condition for larger-than-average increases in earnings. Scherer, after a study of the hotel service industry, reported that the union sector has made somewhat greater gains than the nonunion sector. However, he concluded that it was not certain that this differential gain could be wholly attributed to union influences.

Therefore, regardless of the actual degree of union influence on wage rates, unions were not able to get higher wages for their members than those of the nonunion workers in the long run.

According to several studies conducted by the Bureau of Labor Statistics in different industries, a great difference is found in the

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hourly rates between those who are organized and those who are not organized. A study of the men's and boy's dress shirt industry in 1947 showed that the hourly rates of nonorganized workers were 25 per cent less than those who were organized. In a study of certain grain milling establishments in 1948 indicated a difference of 28 per cent in hourly wage rates in favor of organized workers. In another study of fertilizer establishments, hourly wage rates for organized workers were higher by 27 per cent. A fourth study in 1949 in clothing establishments showed a difference of 28 per cent in hourly wage rates in favor of organized workers.

However, the results of these surveys cannot be taken as conclusive evidence of the influence of unions on the structure of wages in industry. These variations could be due to the difference in wage rates in the different geographical areas. While the average hourly wage rate in industry in 1956 was $2.23 in both the East, North, Central, and Pacific areas, it was only $1.57 in South Atlantic areas (See Table XX, page 196.) It is true that the degree of unionism in the southern states is less than that in the eastern or western states.

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40 Percentage is calculated from data provided in Wage Structure series 2 No. 64 (1947).

41 Percentage is calculated from data provided in Wage Structure series 2 No. 65 (1948).

42 Percentage is calculated from data provided in Wage Structure series 2 No. 66 (1948).

43 Percentage is calculated from data provided in Wage Structure series 2 No. 75 (1949).
TABLE XX

EARNINGS-PER-HOUR IN INDUSTRY IN 1956 ACCORDING TO THE GEOGRAPHICAL AREAS

<table>
<thead>
<tr>
<th>Area</th>
<th>Wage-Per-Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>$ 1.99</td>
</tr>
<tr>
<td>New England States</td>
<td>1.83</td>
</tr>
<tr>
<td>Middle Atlantic</td>
<td>2.00</td>
</tr>
<tr>
<td>East North Central</td>
<td>2.23</td>
</tr>
<tr>
<td>West North Central</td>
<td>1.95</td>
</tr>
<tr>
<td>South Atlantic</td>
<td>1.57</td>
</tr>
<tr>
<td>East South Central</td>
<td>1.64</td>
</tr>
<tr>
<td>West South Central</td>
<td>1.84</td>
</tr>
<tr>
<td>Mountain</td>
<td>2.05</td>
</tr>
<tr>
<td>Pacific</td>
<td>2.23</td>
</tr>
</tbody>
</table>

Although this factor could be partially responsible for these differentials in hourly wage rates, the effect of the degree of industrialization between these areas on the wage structure should not be neglected. In fact, the influence of unions on wages cannot be measured adequately by a comparison between wage rates of union and nonunion workers for many reasons. First, wages are determined by a variety of factors, of which unionism is only one. Second, union action is likely to affect directly or indirectly the wage rates for nonorganized workers. Third, in some industries such as coal mining, railroad transportation, automobile, and basic steel industries, there are no nonunion wage rates because all the workers are unionized.

From the previous discussion there seems to be a doubt as to the influence of unions on relative wage rates. Some economists argue that wage gains which the unions appear to have won for the working class would have come to them anyway as a consequence of underlying economic forces. On the other hand, some argue that without union power wages would be at a lower standard. In summary, there is no definite evidence to support the statement that unions push wages up in industry. On the other hand, there is no exact evidence to conclude the opposite view. Regardless of which is true, the increase in wages which is greater than the increase in output could be due to the monopoly power of unions as well as to any other factor. Moreover, it is difficult to separate the increase in wage rates
because of the unions' influence on one side and because of the economic, social and political factors on the other side. In brief, the available data and information related to this problem are not definite enough to be conclusive.

RESPONSIBILITY OF MANAGEMENT FOR LOW OUTPUT

The level of output per man per hour is not due solely to the ability of workers and their willingness to cooperate because of an effective wage incentive plan, but it is also due to the efficient planning and organizing of management. Sheldon stressed the fact that efficient management can influence production far more than efficient workers and that the low productivity of workers could be due to reasons beyond their control. Moreover, output in many branches of the mass production industries depends mostly upon the improvement in technology rather than upon the ability and skill of workers. In fact, in some industries the capacity of the machines determines the volume of output.

Thus, hourly wage rates should not be tied entirely to output per man per hour as management thinks. It is true that the wage rates should not outrun the average output per man per hour in the economy as a whole. Yet, to measure the fairness of wages by physical output

44 Sheldon, op. cit., p. 156.
alone is erroneous. The lowness of output could be due to the inefficiency of workers, or management, or both. Furthermore, wage rates should not be tied completely to the needs of workers, as most unions want, since the primary purpose of business is to make the maximum possible profits. Profits are the primary motivational factor for capital to stay in business. Therefore, hourly wage rates should be tied to output per man per hour and to the needs of workers, such needs depending upon the standard of living.

**SUMMARY AND CONCLUSION**

The impact of worker's unions on management philosophy concerning the wage problem is remarkable. Although managerial personnel believe that wages should be tied to productivity, they could not maintain such a policy in most industries because of the great resistance of unions. In fact, the philosophy of management as to wages has changed completely at the present time from what it was several decades ago. The essence of financial incentive systems which were developed by industrial engineers was to tie wages to productivity of workers as much as possible. On the other hand, it is the philosophy of management at the present time to tie wages to the general attendance of workers; that is, to the time spent on the job regardless of the workers' productivity. Therefore, most managers of today do not accept and practice the wage philosophy of the classical school of
management. Probably this fundamental change in management approach toward wages is due to the changes in unions' wage policies during the last 50 years.
The field of personnel administration has been greatly influenced by two outstanding movements, that is, the development of scientific management and the development of industrial psychology. Both movements dealt with the problem of efficiency, and each movement's primary purpose was to develop and contribute new techniques and methods to increase the productivity of workers. However, different approaches to the problem were taken by the industrial engineers and industrial psychologists. The approach of the first group involved an attempt to increase the productivity of workers through improvements in working methods and to release the motivating force of workers by applying financial incentives. On the other hand, the psychologists attempted to solve the same problem on the assumption that productivity depends not only upon the capacity of machines, working methods, or high wages, but also depends, and to a large extent, on the efficiency and effective motivation of the worker himself.

Because many of the principles of industrial psychology are based upon scientific management premises, the author believes that these movements are supplemental to each other and that the industrial psychology movement was a natural expansion of the philosophy of scientific management.
THE IMPACT OF SCIENTIFIC MANAGEMENT ON
PERSONNEL ADMINISTRATION PHILOSOPHY

Personnel administration is indebted to the pioneer work of
industrial engineers for a body of techniques which includes time and
motion study, job evaluation, financial incentive systems, and many
others. This early school of management laid the foundation for
personnel administration by drawing attention to the scientific ap­
proach toward the solution of labor problems and by recognizing the
need for specialized personnel functions.

However, the direct purpose of industrial engineers in applying
scientific management methods to industry was not to raise the standard
of living of workers, as they claimed, but to increase profits for
capital. Because immediate profits were put first, the industrial
engineer's attention was drawn from recognizing the great importance
of intangible factors inherent in the productivity of workers. More­
over, they founded their systems to a substantial degree upon certain
questionable psychological principles. Also, they were concerned with
end results, that is, increased output and lowered costs. The most
important device for manipulation of worker behavior was higher wages
under piece-rate systems.

In general, the use of the term "scientific management" has been
discontinued, and it serves at the present time only as an historical
reference. Because of this fact, the author chooses to refer to the philosophy of scientific management with the term "classical school of management."

THE IMPACT OF INDUSTRIAL PSYCHOLOGY ON PERSONNEL ADMINISTRATION PHILOSOPHY

The philosophy of industrial psychology is that efficiency can be attained by giving consideration to the well being of the human element in industry. Industrial psychologists devoted most of their attention to giving workers greater mental and physical ease at their work. Their primary interest was the worker's satisfaction; productivity came second.

One of the most important recent contributions of psychology to personnel administration came as a result of extensive research into techniques of attitude and opinion measurement. These techniques are used in industrial relations to appraise the attitudes and morale of employees in order to discover the sources of workers' dissatisfactions. The knowledge of these sources enables management to take appropriate steps before dissatisfaction is built up to the point where it erupts into work stoppages, slowdowns, or other overt manifestations of unrest.

FINDINGS

Scientific management and industrial psychology movements have
caused fundamental changes in the philosophy of personnel administration. These changes have had a significant influence on management's attitudes concerning unions. Also, as a consequence, management's thoughts in regard to selection, fatigue, and financial and non-financial incentives have been modified.

Although scientific management promoters claimed that they recognized the existence of unions, they ignored their representatives by refusing to meet them at the collective bargaining table. Scientific managers believed that union interests should be confined only to activities and functions in the realm of the welfare of workers. They denied unions the right to bargain on wages or working conditions.

At the present time, the attitude of management toward unions has changed. Management agrees to meet union representatives, in some cases asking to bargain with them on all labor problems. This change in the attitude of management toward unions has been a direct result of the power which unions gained during the last few decades.

The essential element of the philosophy of scientific management lies in careful selection. However, neither Taylor nor any of his colleagues pointed out what were to be the scientific methods to be used in selecting workers. Their objective was to eliminate the waste of the human element in industry, yet through their selection procedures, which were not scientific but highly biased, they increased waste of efforts to society.

The scientific management group tried to find the best man for
the job. On the other hand, industrial psychologists help to find the best job for the man. Although the two approaches have the same purpose of putting the right man in the right job, there is a great difference in the approach used.

The application of interviews and tests to the personnel selection procedure is a major contribution of the industrial psychologists. While these techniques are of only limited help to the personnel administrator in performing his functions, they are considered an improvement over the selection process practiced by the scientific management group.

Industrial engineers thought that worker inefficiency was due primarily to physiological fatigue. On the contrary, it was found that psychological fatigue is of more effect than physiological fatigue on the productivity of workers in industry. It should be emphasized that the work of industrial psychologists in this field is still in its embryonic stage. Their work deals largely with the theoretical distinction between physiological and psychological fatigue. They have not yet developed a complete idea or an acceptable theory as to the nature of characteristic of psychological fatigue itself.

The promoters of scientific management techniques assumed that the worker's sole reward from work was high wages, and that payment by itself represented the worker's highest motive for working. Therefore, all their incentive wage payments were centered around
the idea that the only incentive needed to motivate workers was a higher income.

The scientific management promoters' philosophy concerning wages was of great success during their times. Their success was due to the fact that workers lacked both financial and non-financial incentives in the early 1900's. During that time applying financial incentives alone had considerable effect on workers' potentiality. However, the same philosophy proved to be inadequate to give the workers the greatest degree of satisfaction in their jobs, especially after World War I.

During the last 30 years, labor has come into its own; the dignity of the working man has at last been recognized and with this recognition has come an attempt on the part of management to consider the employees as individuals with feelings and problems of their own. Moreover, workers' attitudes have changed since Taylor's time. At the present time, workers need both financial and non-financial incentives. These two types of incentives are of equal importance as motivators of employees, in the long run. However, in the short run the relative importance of the different motivational factors differed from one time to another and depends upon the immediate needs of the individual as well as the general economic conditions of the industry and of the country.

At the top of the list of workers' wants are higher wages and greater employment security. Following these two motivational
factors are: recognition, interest, supervision, advancement, good working companions, good working conditions, good working hours, and benefits. It is not claimed that these findings represent the actual importance of the wants of workers. As a matter of fact, it is misleading to list incentives in the order of their importance. The particular incentive, or incentives, motivating an individual within a group are so different that only sweeping generalizations can be made.

On the other hand, management-level personnel still believe that workers want wages more than any other motivational factor. In this respect management philosophy has not changed from that of the classical school of management. Management arranged the motivational factors just mentioned in the following way: wages, interest, employment security, advancement, good working conditions, good working companions, supervision, recognition, benefits, and good working hours.

The lack of correlation between the opinions of management and workers concerning motivational factors indicates clearly that management-level personnel do not give adequate consideration or careful thought to the findings of workers attitude surveys. The result is continuous industrial unrest. In general, the gap of disagreement is wide, especially between the relative importance of wages and employment security. Because of this difference in opinion, considerable
emphasis has been given in this study to the importance of wages and employment security as motivational factors.

There is also considerable difference between industrial engineers and present day management concerning wages. While industrial engineers believed that wage payments should be tied to the productivity of workers, it is the philosophy of management at the present time to tie wages to the attendance of workers, regardless of their productivity. Therefore, management does not follow currently the philosophy of scientific management in this respect.

The philosophy of some management-level personnel has changed from what it was in the early years of this century. Guaranteed annual wage plans put an indirect responsibility on management to provide workers with steady employment. This responsibility was not voluntarily accepted by management before the advent of such programs. However, the number of firms maintaining a form of employment security to their employees is still small.

CONCLUSIONS

The problem of industrial unrest is of concern to management, workers, and society as a whole. Therefore, the function of personnel administration should be directed to develop techniques, procedures, and policies which are in agreement with the objectives of capital owners and at the same time reduce inefficiency arising from employee dissatisfaction. No problem is greater or more urgent than
that of establishing sound, cooperative relations between workers and management.

One area of personnel administration seeks to reduce labor-management tension through the use of morale surveys among workers. Morale has never been more important in industry than it is today. The use of morale surveys eliminates many causes of misunderstanding between workers and management.

Industrial psychologists and sociologists have made considerable contributions toward increasing productive efficiency. However, their progress in providing workers with high satisfaction with their work has been slow. As yet the social sciences contributions toward eliminating the causes of human inefficiency arising from employee dissatisfaction is small.

Of particular importance in the motivational problem is the role of both management and unions in predicting the significance and importance of the media through which workers' basic motives, wants, and needs are satisfied. Attitude surveys and studies discussed in earlier chapters support the view that management has better understanding of workers' motivational factors than unions have.

There are indications that workers look primarily to management for the satisfaction of their needs. This is due to the fact that levels of employee motivation are largely determined by the extent to which such needs are recognized by management in their policies
and practices. Probably the major difficulty facing management today is that of satisfying workers and at the same time meeting its responsibility to other groups of society—groups such as owners of capital, suppliers of raw materials, buyers of the products, and the community in which the organization exists. It is possible for management to satisfy all these groups because there is no inherent conflict between their wants. In fact when workers are satisfied with their jobs management finds it easier to satisfy the needs of other groups in society. A satisfied worker means high productivity and better quality of production, which means lower costs, lower prices, and at the same time higher profits.

Motivational factors must be given maximum attention when setting incentive plans. Since "fair" wages and high employment security are two of the most important motivational factors workers look for at the present time, management should direct its attention primarily to providing workers with those two factors. However, management should not neglect the other morale factors; management should give them adequate consideration in formulating personnel policies.

More intensive surveys should be conducted among workers to learn their opinions, and management should adjust its philosophy concerning personnel administration in keeping with these opinions, if possible. However, the managers must not abrogate their rights to manage the concern. Because workers' attitudes toward motivational
factors are changeable from one time to another, it is necessary to conduct periodic surveys to keep posted on their changing opinions.

Finally, neither financial nor non-financial incentives are sufficient within themselves to achieve optimum results in the way of bringing about high morale and harmonious labor relations. The problem is not one of supplying economic or non-economic incentives, but it is one of determining specifically how to fit incentives effectively into an over-all personnel program in order to produce the greatest degree of sustained effort on the part of employees. This, in turn, should lead to the greatest degree of satisfaction on the part of the workers, the greatest profits for the owner of the business, and the greatest good for the community and society.
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D. Miscellaneous


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Major Field: Management


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