

creased probably without exception during the last three years, it has noticeably been kept within bounds, comparatively, in plants of this type. Upon the introduction of labor-saving devices and methods where increase in sales has been insufficient to enable the retention of the whole previous force, the policy has been adopted of securing an eventual net reduction in personnel, through filling the places of those who voluntarily leave, from the ranks of the resultant force trained, as before mentioned, to perform several different operations.

H. A SPIRIT OF COÖPERATION AND CONFIDENCE, AND A FEELING OF SECURITY

As a result of all of the positive products of advanced management enumerated above come the last and most important of them all. Indeed so important is the spirit of coöperation and confidence and the feeling of security on the part of the whole personnel that nothing should be allowed to undermine them; for without them, although a certain *efficiency* may be obtained, true *scientific management* is impossible.

Coöperation may be obtained only by securing the confidence of those with whom we deal, and this confidence in turn results only when each man feels secure in the belief that he is in the best possible place for him and that he need have no fear for the future as long as he fully plays his own part.

Needless to say a feeling of security is not engendered by rate cutting, by low wages, by long hours and poor working conditions; it does not spring from paternalism nor from leaving in the hands of the foreman—the most directly interested party—the arbitrary power of promotion, reprimand, demotion or discharge with the often resulting nepotism and favoritism, not to say despotism. A sense of security is not furthered through a feeling on the part of the operative that not only is his training, development and guidance neglected by the management, but that even though he may try hard himself, there is yet little chance for him to secure just recognition. An overemphasis of the profit motive does not lead him to feel that he will not some day be forced to choose between the employer and his own self respect or his own best interests. Security does not accompany such conditions.

Confidence and an open mind is not established through haphazard methods of manufacture (for which the capable workman at heart has a profound if respectful disgust); low wages and high costs, which he knows are unnecessary, do not impel respect for the management, when he knows they are caused by the nonuse or the misuse of equipment, of labor and of materials which he sees about him and which he knows it is the management's responsibility to remedy. Industrial strife does not inspire in the workman confidence in a management which, as he knows, usually brings it on through shortsighted or selfish dealings. No great respect for the ability of his leaders is awakened when he realizes that they know less about what constitutes a proper day's work and how to bring it to pass than he does—when, in other words, the leader knows less in this respect than the led. Only when the management really assumes its full share of the work and the responsibility may his confidence be secured.

And only through making this security and this confidence an actual fact has scientific management been able to produce what it so highly prizes and what it has so remarkably obtained—true coöperation.

We may thus distinguish several marked characteristics and accomplishments of Scientific Management. The first is its stability—the fact that it has progressed through the stages of novelty and exploitation to that of permanence. The second is its marked contributions to purely economic factors such as increased production and decreased cost, improvement in quality, a more rapid capital turnover and the stimulus to industry in general resulting from the sound foundation of knowledge on which it is based. The third is its equally striking but far more important contributions to the field of human industrial relations in the success with which it has maintained industrial peace, increased wages, improved working conditions, established proper employment and training facilities, stimulated and provided for a larger individual opportunity, reduced labor turnover and secured true coöperation between management and men.

Such are some of the notable constructive accomplishments of the science of management in the field of industry during the thirty years or less of its development.

COST OF LIVING IN RELATION TO WAGE ADJUSTMENTS

A RESEARCH MADE AT THE HOLT MANUFACTURING COMPANY, INC., PEORIA, ILL.

Under the Direction of Ray M. Hudson¹

BY LEROY D. WILLIAMS AND ALFRED B. HOLT

FOREWORD

THE increased cost of living has had more discussion recently than almost any other subject. Numerous articles, comments, editorials, "reports" and cartoons have appeared on this subject; yet in reviewing these it becomes a difficult matter, due to the widely varying statements made and figures given, to draw definite conclusions on which to base wage adjustments for a particular industry operating in a certain community. Analysis of the information collected from these many sources shows wide variation in the data and in the conclusions, because of:

- (a) Investigations made in one locality, and therefore neither truly representative of general conditions nor directly applicable to any other locality;
- (b) Investigations covering the increase on only one, or two, perhaps three, of the essential factors in the cost of living;
- (c) Investigations considering the increase on several of the essential factors of living costs, but in which each factor has not been weighted with respect to the relative importance which each bears to the total cost of living;
- (d) Investigations considering the several essential factors, each weighted with due regard for its relative importance in the total schedule, yet failing to consider the various articles in that factor by their relative weights or values with respect to the true importance of the particular article or item in the total cost of living;
- (e) A marked tendency to base conclusions, as to the actual degree or value of the increase in living costs, on a review of the "price-changes," etc., over a period of time which

does not permit of a fair and proper comparison.

For example, in the swing of a pendulum from one extreme to the other of its travel, there are two points, each of which is on the opposite side of the mean vertical position of the pendulum, and yet equidistant from that central position. Therefore in the swing from peace-time to war-time conditions, and back again, effort should be made to find the mean vertical position from which to measure the relative increase, or decrease, in living cost, using that central point as the base from which to make measurements and computations.

In the investigation as conducted at the Holt Manufacturing Company, while we have confined our study to local conditions, and have made an exhaustive study for the purpose of finding a period of time when conditions were normal, or balanced, for use as a base year; and while we have further considered all the essential factors entering into the basic cost of living, and have weighted these with due regard for their relative importance in the total schedule; we have gone still further, and considered the relative weight of each particular article or item with respect to the extent that article or item enters into the specific factor of which it is a part or component.

Yet this report does not cover—and it is not intended that it should—the real causes for the increase in living cost, nor does it present any suggestion as to how that increase can be reduced. Our whole object, as brought out by the statements and data presented, is primarily:

- (a) To determine that period of time or base year on which our comparisons may be established;

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