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THESIS

"THE HUMAN FACTOR IN THE LUMBER INDUSTRY"

--Submitted by--

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# "Civilization of the present day is based largely upon industry. The survival of nations, the security of society, and the very lives of the people are dependent upon factors connected with production and distribution, with commerce and finance. The facts of industry are vital. Its problems none can with safety disregard. Its progress is so swift that only by constant attention can it be measured by the observer.

"Industry summons to its service the keenest minds and the most tireless energies, and rewards them with a lavishness beyond the dreams of the Arabian Nights: the qualities of leadership which in former centuries were reserved for war or for statecraft are today devoted in many instances to manufacture and trade. Business, once looked down upon as a vocation unworthy of the men of gentle blood, now rules the world. It not only rules the world, it feeds and clothes and houses the world, in a scale of comfort and plenty unknown in earlier ages".

In this progress of industrial civilization, the later decades of the 19th century saw a constant improvement of material things. Money and machines were mobilized for the service of mankind with a perfection never before attained.

Along with this progress there has come into increasing prominence an element; not material or financial; not apart of mechanics and the money with which the process of industries are carried on, although profoundly affected by every material development. This element is the Human Factor in Industry.

# (Personal Leadership in Industry--Craig and Charters).

Wise managers of business in recent years have come to give increasing attention to the man. Problems of human efficiency, of labor and wages, of health and safety, and of democratic control are being studied as never in the past.

Perhaps the slowest business to become adjusted to these changes is the lumbering business, and especially the logging division. The type of men that have in the past inhabited the camps is probably a partial explanation of this condition.

The operators, of the northern and eastern districts, the pioneers of logging were uneducated foreigners as a rule; consequently, they employed men of their own caliber, ignorant, carefree and irresponsible groups, who, working under the leash of the whip all day, and gambling their money away at night, were kept broke and could be made to live under any conditions no matter how poor.

The first sign of improvement came hand in hand with the decrease in quantity and increase in value of the timber supply. Under the slash and burn methods that had previously been used, the readily accessible bodies of merchantable timber were soon exhausted. The increase in population of the country caused a greater demand for lumber. Large corporations began to get hold of the remaining timbered areas. The common labor supply, which had for generations supplied our American industries, was no longer available. During the World War the source was cut off, and since the war congress has passed immigration acts which, have restricted the influx of foreigners. Immigration is limited to a mere fraction of what it was

Faced with a labor shortage in the first period of business activity following the war, the industry was forced to meet its necessities by development of local labor supplies, through increased efficiency and improved management and application of machinery.

On account of the actuality of labor shortage, increased operating costs, and keener competition, the problem of production has become the main essential to success of the industry. Upon human effort mainly is this maximum production dependent. It was once possible to increase output by installing more efficient machinery, but men of genius have devoted their lives to mechanical perfection, until machinery has nearly reached its peak of efficiency enough so that the changes due to mechanical perfection will not revolutionize industry as it has done in previous years..

Human efficiency has been developed to a very meager extent. It has not kept pace with that of machinery; therefore the vital problem of each and every operator is the development of human efficiency.

The leader is the man on whom all eyes are focused. To the men working under him, he seems their protector and representative. He is responsible to the operator for the acts of his own men and is responsible for their good. If the employer is not satisfied with the way the job is done he either demands an explanation from the boss or fires him. On the other hand, if the crew feels they are not being treated satisfactorily they take their troubles to their boss, and he must assume the responsibility of presenting a method of improvement to the operator, or else exercise his authority by explaining to the men how they themselves are at fault.

n To society the leader is responsible for the source of income or revenue that is necessary for the development of the country. For upon the ability of the leader to manage the resources of the nation depends the amount that can be turned into revenue for common use. There are many instances fresh in the memory of this generation that exemplify the extent to which society is dependent on national resources. Take the region around the Great Lakes for instance. Before that country was reduced from flourishing areas of growing timber to barren waste the towns were at the of development. Now, on account of unwise management and lack of foresight, the once prosperous towns are dilapidated crumpled wastes of scattered buildings. Such examples should bring home to the operator the fact that he is responsible for maintaining the economic development of the country.

To meet these responsibilities that are proved by bitter experience, the operator should have a plan of management that will protect the resources of the future. Thus, rather than a wasted ruin there will be the beginning of a new source of income. Instead, then of dilapidated ruins there will be a more highly developed country.

Society is the direct result of organized industry in the country. Organized industry is maintained only by the unselfish co-operation of the ones who do the work-- the laborers and the leaders. When capital and labor can cooperate to the best interests of each other, then both classes will prosper and society will proceed on its joyful path to maximum development.

In the logging industry, especially, there has been a lack of constructive policies. The logger of old thought only of the present and instead of trying to save what he could, destroyed all but the cream of the forest. His tracks were etched in our vast forests with fire brands leaving a crumpled mass of snags and ashes. It seemed as if he were competing with his brother timber-men, to see who could get the ground bare the most quickly. Naturally, men with such near-sighted policies would care very little about the welfare of the employees working under them, consequently, the laborers were shoved into crowded quarters, fed poor quality of food, and prodded along to work harder. These conditions led to a certain disloyalty among the men, and, instead of joining forces and striving for a common goal, the employee and employer rared and bucked against each other.

Gradually, as the timber supply decreased, the operators were forced to use more conservative methods of operating. At the same time the employers began an organization plan and gained a few important concessions from the operators. Better living conditions were demanded and received. A more equal standing on the job was demanded and received. The direct result of these changes was noticeable to the operator. The better conditions provided for the workingmen caused better health, and allowed greater mental activity. The old saying "A full belly makes a happy man" was proved to be true. Men in the logging camps became more contented with conditions and instead of working against they assumed a certain responsibility to their jobs.

The increased production that was so noticeable as a result has caused certain operators to give the subject detailed study. Instead of confining their research to the mechanics of the operation, they have expanded their study to Human Efficiency. My theme from now on will deal with the relation of the operators and leaders to the working-man or employee.

Not many years ago the logging industry was characterized by rough, hard-boiled, hardy men. In those days the boss or "bull of the woods" was a big square-shouldered, unshaven giant capable of licking any man in camp. In fact, his position of superiority depended upon his ability to surpass his fellow workmen in brawn and not in brain. Although the boss was always depended upon to take the initiative, it was not brains that counted primarily--it was physical strength to back the initiative. This attitude generally led to friction in the organization, because each man worked against the other, realizing that the greater handicap he could put on the other fellow, the better his own chance would be. Real co-operation was known only in particular instances where the boss was an exceptional leader or the men had a common interest in the particular job. The attitude of the men and their co-operation with each other is one of the governing factors in production.

A person standing on the side lines would have just cause to marvel at the difference in production at the middle of the week, and production the last day of the week. At the beginning of the week the men have nothing to look forward to but another day's labor, while on Friday and Saturday they are pepped up thinking of the trip to town or the visit with the family

During such times the cost accountant would observe that instead of hanging back and waiting for specific orders from the boss, the crew would be about two jumps ahead of him. The incentive to the men in this case is to get the job completed, knowing that the sooner they get it done the sooner they can get to camp and clean up. The wise employer will observe the emotions of his crew in such instances and try to prolong the flash of interest as long as possible. It takes the fullest executive ability of the boss on the job to get this desired increase of efficiency of the men on the job.

The primary object of any organization is to obtain the highest efficiency from the men. If this is obtainable by a study of human reactions then why would it not be profitable to consider efficiency from the standpoint of personnel? Instead of having an efficient crew a couple of days out of the week, why not perfect a system aiming to satisfy the crew at all times? Of course, no crew will be satisfied all the time. The laws of human nature do not permit such a thing, but there should be no reason why they cannot be satisfied most of the time; in which case it is the duty and interest of the leader or responsible executive to study the conditions and find an effective system to prolong such a situation.

Co-operation is the one great pre-requisite of harmonious and efficient workmanship. Strife caused more non-productive sweat than any other defect within the organization. In order there may be friendly understanding in a crew, each man must have a loyal interest in the work. One dissatisfied grumbling man in the crew may cause the whole force to become dissatisfied.

It is practically impossible for a crew to do good work if there is a man in their midst who will not do his share. The mere idea that he is being paid for doing nothing the same wages that they are getting for honest labor will create an attitude of disloyalty toward the organization. Even if the rest of the crew are willing to carry the extra load forced upon them by the laggard, is not advisable. Any extra load added to ordinary duties is not in accord with the working plan of the organization and efficiency will not be obtained. It is evident that there must be someone in charge of the crew who understands men and is capable of meeting these problems. He must, or should be, so well-informed that he can weed out those who will not co-operate to the best of their ability.

Co-ordinated effort, therefore, is the secret of the success of the working plan. With it there should be no overburdened units or misunderstandings between the men. But in order that the working plan function properly there must be strict obedience of the men to an efficient boss. The boss is the one who should know just how the plan can be worked most effectively, and the success depends upon the precision with which the orders are carried out.

Summarizing, the factors that make for the highest efficiency of the crew are:

1. Maximum co-operation.
2. Loyalty.
3. Obedience.

In order that the leader be best equipped to develop the characteristics in the crew, certain characteristics must be developed in him.

My solution of this problem would be to apply the system of group discussion for camp foremen and higher executives of the organization as it is now in use in this and other industries, to increase the general knowledge of personnel control in the industry as a whole, through extending the system to include meetings of camp foremen and higher executives of different organizations to exchange information gained through varying individual experience. I am certain that this would eliminate a great deal of the trouble that continually comes up between the employer and the employee.

The leader must be able to step in and work with the men--he should have enough practical experience to know when a job is being done correctly. The executive who has no knowledge of the conditions of the work is proved to be either dissatisfied with honest effort or be satisfied with dishonest effort. That is, unless he knows how much a man should do in a day he will not be able to judge the efficiency of the employee. In other words, he must know the aims and working policies of the business as well as or better than the working men. Not only should he be able to perform any of the tasks but he should be well enough acquainted with the men to sympathize with them. There are times on every job when the sacrifice of independence and other intangible things caused by his position as a laborer will seem of more importance than the advantages gained from belonging to the organization. On such occasions the individual will appear to lose interest and slack up in his efforts, and the leader must be able to combat these difficulties by showing a deep interest and regard for his feelings.

But since he is the presiding officer of the crew he must avoid favoritism. If he does not show exact fairness to every man, the other members will resent and probably disrupt the organization.

If the leader is keenly sensitive to the thoughts and feelings of the men, and is capable of expressing them, he will gain their respect and loyalty.

The leader must be qualified to act as a teacher or a trainer. The men should be shown better methods of doing their work; taking short cuts and cutting down the effort required to perform the job, for only as the efficiency of the individuals is increased does the efficiency of the crew advance.

The leader, therefore, must be a very alert, wide-awake person, and to withstand the bending strain he must have a greater store of nervous energy and good health than most men.

As a leader he must know how to give orders, and, more important yet, he must be persistent in seeing that they are carried out. The weak boss will have a self-pitying group of men under his supervision. They will not do their best work, because they see that they can get away with doing less. It seems to be a trait of human nature to slide along with the least exertion possible. This is not as bad as it seems, though. Although every man is lazy to a certain extent, men are not naturally lazy, although in order to put forth the maximum effort of which they are capable without over-exertion, the majority of men need someone or something to bring pressure upon them.

If they are working for a forceful boss they will work harder and actually have a deeper regard for their leader. They will subconsciously realize that he expects them to do his bidding and they will have the satisfaction of knowing that he knows his job.

On the other hand, a boss may be too harsh. Instead of instilling the spirit of comradeship in the men, he establishes a feeling of fear in them. They are afraid to disobey his orders. The result is a loss of interest in the work and a decrease in the efficiency of the individual worker.

The method of giving orders has a great deal to do with the manner in which they are carried out. An order poorly given is naturally poorly carried out. The most important factor in giving orders is to explain them clearly. They should be given in such a manner that they will be clearly understood the first time given. The best way to do this is to explain the reason for the job. If the men know the reason back of an order they are in a position to use their heads and to exercise their own initiative. The writer was working on a railroad location crew as head chainman one time, and the transitman was used to handling negroes or Italians. Everyman on a survey crew is responsible for certain equipment, and he knows which is necessary for a certain job. This transitman would never tell us when we were going or what we were to do. Instead he would tell us to take certain things, that we would need them. The crew, instead of having their mind on what was to be done during the day, would probably be thinking about a baseball game, or how long it would be until they could go to town again. This in itself was a distinct disadvantage and surely decreased efficiency. But the most noticeable drawback was that one day the transitman forgot to tell one of the fellows to take the cloth tape for cross-section with him.

About one o'clock we were to take section and we didn't have the necessary equipment. As a consequence, one of the best men quit because of the harsh words that boss used, and two of us had to do the work of three for a couple of weeks until another man was found. If the work had been described before we left camp, all of us would have been thinking about what we needed and the tape would probably have been taken along.

There are a number of ways of giving orders, good and bad. The most common are the military system and the appeal system.

The old military system is still used by a few operators, but as a rule it has been supplemented by better methods. As I have pointed out, a man will not be interested in his work unless he knows the object and can see the goal toward which the job heads. The old time leaders were satisfied to believe that the men working for them should not know anything about the company and that they were too ignorant to comprehend a reason if pointed out. With the increase of prices and better conditions, the management began to realize how vitally important the factor of personality was in the efficiency program. They cut out the old notion that a worker was the level of a hound and gave the employee more respect.

The system that is now generally used is to appeal to the man's sense of duty, to tell what is to be done and with a little help let him use his own initiative and ability.

There are, however, a few human characteristics which never change. Every one of us, regardless of intelligence, social standing, or breed, have the same fundamental characteristics. These things which govern, from the humblest worker to the life of a financier, are: home, family, prestige, and security.

To a certain extent every man has an egotistical personality. The ultimate aim of the individual is to gain things for himself personally. First in importance is the love for a family. The man will stay with a mean job and endure trying hardships not because the company needs a man to do the work, but because he must have a job to keep his home and family. His family must be supported, his children must be sent to school. A man then will sell himself for the love of his family.

There is a desire for prestige that the human being is forever striving for. To be able to claim a proprietorship over something--if it be only a tin lizzie-- is a real satisfaction. The most common source of prestige is that gained by cash value, because it is more conspicuous in the eyes of the public.

The desire for self-prestige or the egotism in personality is reflected more noticeably than all other characteristics in the desire for approval in the eyes of other people. This factor is important in studying leadership and efficiency. The normal human being strives to gain approval for his accomplishments in the eyes of others. Promotion is the largest factor that appeals to the individual worker, because it shows that his efforts are recognized by his superiors. A little encouragement of this kind will make a man of higher efficiency. He will take the interest of the company to heart and work harder. Many executives have the idea that once a person perfects himself in a particular job, he should be kept there forever, instead of being allowed to work for higher achievements. This will tend to deaden enthusiasm, especially in a young man who is striving for a future.

Therefore, a leader who understands human nature can get the whole-hearted efforts of his men by appealing to their ego-tistical sides.

There has always been a certain dissatisfaction between the labor classes and the employers in regard to wages. The fundamental object of payment is to get the greatest amount of work done with the least wage. That is a natural result of competition in business. In order to increase production in the logging business, many efficiency systems are tried. The most commonly used systems are: bonus, piece work, and time studies.

Time studies are a method of cost accounting. The actual cost of any unit of production at any place in the operation is recorded and the defects looked into. When production is low for any camp or any side of a camp, costs of logs per thousand are naturally high. In order to reduce the cost per thousand, the cost of producing the same amount must be reduced or the production increased without additional cost.

Time studies will reveal the cause of such trouble whether it be with the men or equipment, or a combination of both. When such defects have properly located the question then arises; Can they be eliminated to any advantage? In this determination the present cost, plus probable future accumulation in cost, is balanced against the cost of replacement. If it is in the machinery the cure is simple, but if the delay is on account of the men themselves it is a more difficult problem. A man may be changed around on the job or he may be removed from the organization entirely. This is the beginning of the field for human efficiency.

A man cannot always be replaced by a standard make of desirable quality, like a machine; his successor may even be worse than he. It may be that he has ability but not the incentive to do the work.

Bonus systems are especially efficient if they are carefully handled. If you guarantee a day's wages and put a bonus on top of that you have not accomplished anything. There must be an incentive to produce and when the men do produce, give them fair pay. Wherever they are applied, bonus systems will cause an increase in production on an average of 45% per cent. Bonus systems are usually applied to certain phases of the work such as falling, bucking, loading, etc., although some companies base their system on an incentive to the men to stay with the job.

Mr. Kelly McGuire, who is making time studies for Hammond Lumber company at Casper, California, has given me the system used in the Casper woods. There is a bonus on felling and bucking and barking. The company's purpose is to get maximum production without breakage or waste. The men work nine hours, the pay being based on an eight hour day with time and one half for the ninth hour or all time over eight hours. A second faller gets 52 cents an hour for eight hours and 78 cents for all time over eight hours. In addition the men get a bonus of 60 cents per thousand for all over nine thousand feet that they fall. Working strictly on a piece basis, the buckers get nine cents per square foot for all they saw. The barkers get 48 cents an hour for eight hours and 72 cents for all time over eight hours, plus an additional bonus of 60 cents per thousand for all they peel over nine thousand feet. In order to keep the men, Casper pays the superintendent straight time all the year, \$7.60 per day.

Another inducement to ~~make~~ the men work hard is by <sup>paying</sup> on a piece basis. Piece work probably is the easiest way to get men to work hard and make an increase in production, but the type of work turned out is usually very poor. Destruction is high and the men get careless in their mad rush to get more units, and therefore more pay. This is a good system if the company can keep a check on the group. The method will reap wonderful results by properly governing the crew. The T. P. L. company have put one crew on a piece basis of production of logs and they have noticed these results: the men are making more money and the logs are coming in at \$1.50 cheaper per M. This is a very marked increase, and I doubt whether there are many conditions which would be affected as noticeable. These results show that time spent studying efficiency systems is worth while. Every operation has different problems to meet, and a system that will solve one problem will not entirely solve another similar problem. It is a big problem and there is a larger fertile field for research and investigation in Human Efficiency.

Mr. Stamm, logging engineer for the Pacific lumber company of Scotia, California, sent me figures on the bonus system that they used. The only one they have had in use is for long time service. They intend to give the men an incentive to stay on the job after they are broken in, and save the company large labor turnover; they pay three per cent bonus on a man's wages if he stays in continuous service for one year. If a man earns \$1500 the first year he will get 3 per cent of \$1500 or \$45 as a bonus.

Second year he will get 4 per cent of \$1500 or \$60 bonus.

Third " " " " 5 " " " " " \$75 "

Fourth " " " " 6 " " " " " \$90 "

Fifth " " " " 7 " " " " " \$105 "

This continues as long as a man does not lay off over three days without a leave of absence. As a consequence, this company has a very slight labor turnover, and this naturally increased the efficiency of the operation.

From the foregoing discussion and figures it should be evident that the operator cannot afford to overlook the human element in his efficiency program. My conclusions are that the problems of human efficiency are the most vital in the logging industry at present. My solution to the problems are; first, to get closer co-operation between the employer and employee; second, to instill into the laborer a feeling of responsibility toward the organization. This I think, can be done by giving the men favorable living conditions, satisfactory returns for their efforts, and an interest in the success of the company by entering them as stock holders.

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