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Work simplification in the dairy industry.

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Thesis

Work Simplification in the Dairy Industry

by

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Chapter I

"Where can I use this technique called - work simplification - in my work?" "How can I use it"? "Of what value is it"? "These questions are still being asked in every part of the country today. The doubts are particularly strong in the dairy industry. Probably the greatest argument presented in answering their own questions is that you cannot improve or change the acts of nature. However, with the growth and expansion which has taken place within the dairy industry during the last twenty years, management techniques for improving efficiency have been accepted, even "down on the farm."

Work simplification is not new. It is not a speed-up program. It does not ask anyone to work any harder or faster. What is work simplification? The program presented by H.P. Hood & Sons, one of the leading dairy concerns in New England describes work simplification as "the organized application of common sense to find easier and better ways of doing work." Frank Gilbreth has described it as the "quest for the one best way of doing work." The programs now in force at the H.P. Hood & Son's Inc., the Abbott Dairies and the Bowman Dairy reflect the teachings of Mr. Allen H. Mogensen. While in other locations, we find no such organized program but rather, an organization of "experts". Here the approach to this problem of finding a better way, is to assign the job to an "expert" - one trained in methods work, or time study, and have him arrive at a solution, and put the solution into effect.
The greatest obstacle to cost reduction and methods improvement is not created by engineering difficulties, rather, it is set up by the mental attitude of the people doing the work who feel that they are already using the best method. The answer is to get everyone into the habit of looking for better methods. To sell things cheaper means that those who now have jobs must do those jobs better. It means they must work with all the brain and all the body they have, to put their products up in quality and down in price. Increasing productivity is not an arbitrary speed-up program. Old style "Efficiency" methods failed because they ignored the necessity of gaining voluntary cooperation and because no distinction was made between work done in a hurry and simplified work methods performed at a high rate of speed. An instance of this occurred during the early day's of Work Simplification at the Abbott Dairy. Management, without consulting the operators or the union steward, decided to invite an outside group in to take pictures and make a study of a particular operation. The reasons for this study or the need for it were not made known to the employees. As a result, the union steward stood before management the following morning and refused to permit the pictures to be taken. After many minutes of embarrassed silence, management officials afraid to make a move, the invited participant stepped up to the steward, introduced himself, and explained why he was there and what it was they wanted to accomplish by taking the pictures. The immediate reaction on the part of the steward was enthusiastic, "Why this is what I have been telling them all along.....we have needed something like this for years."
The one thing needed in this case was to make the group a part of the problem - participation.

In the program conducted by H.P. Hood & Sons of Boston, Mass., motion pictures are taken, many times to create interest in a particular operation on the part of the operators. They have a feeling of belonging, of participating, of being part of the act. It has proven very successful. As a result of group meetings held in conjunction with the showing of these files, many worthwhile suggestions and improvements have been conceived and presented. These suggestions are outside of the suggestion system.

The best suggestions invariably come from the people doing the job once they have been given the incentive and taught the habit of looking for better methods. Because production costs are dependent on the productivity of each worker, management must find ways of increasing individual productivity.

Work Simplification, as developed by Allen H. Mogensen, is a means of getting everyone in an organization to think about better methods, and to suggest workable ideas for improvement. It is a training program carried on by and through a company's supervisory organization. It can certainly qualify under Taylor's Principles of Scientific Management as being an effective tool for management to use. To repeat again, Work Simplification, in the Mogensen vein, "is the organized application of common sense to find easier and better ways of doing every job."

* 13
The goal of scientific management is the elimination of waste motion in minor hand operations to complete rearrangement of plant layout. Every employee is taught and encouraged to use initiative in further savings of time, energy and material. Particular attention is paid to the problem of increasing production without making additions to present plant and equipment.

Mr. Mogensen's first work in this field began in 1931 at the Massachusetts Institute of Technology. He was assisted in his early studies by John Gillon of the West Lynn Works of the General Electric Company, and by Dr. Lillian Gilbreth. In 1932, he compiled a considerable amount of the material which had appeared in an earlier booklet of his and in Factory and Industrial Management, and wrote a book entitled "Motion and Time Study". He developed Work Simplification Conferences which are held at Lake Placid, New York. These conferences, begun in 1937, have developed into laboratories of practical working operations. The conference is staffed by an outstanding faculty led by Dr. Lillian Gilbreth. The list of firms that have sent people to Lake Placid is impressive.

Mr. Harold Dunlap of H.P.Hood & Sons became interested in Work Simplification in 1940 while serving as a Plant Superintendent. He began to apply the principles and techniques of Work Simplification in his own plant at that time. In 1942, he was sent by the company to Lake Placid to attend one of Mogensen's Conference courses.
The Bowman Dairy Company of Chicago, Illinois has been represented at one of his conferences by Mr. Ray Baer. Abbott Dairy of Philadelphia, Penn. sent Mr. Bill Reichert in 1947. Prior to this Mr. Reichert came to Boston to inspect the Hood program and participate in the Basic Course conducted by the Hood organization under the direction of Mr. Dunlap.

The program and work simplification thinking was first introduced to the Management of Abbott Dairies in 1942 by Mr. R.P. Norton, an Executive Board member of the Hood Company. At this time Abbott's had in it's employ, methods people whose sole job consisted of developing equipment to mechanize and eliminate manual labor involved on jobs in the plant. The idea of introducing the principles of work simplification was not received with complete enthusiasm by top management. As a result, it was not until 1946 that the idea of work simplification revived and steps taken to train people in its use and application.

The program of work simplification or the idea of it is not restricted to the manufacturing plant within the dairy industry. It has not progressed as far nor as fast as it has in other industries, however, great strides are being made on the farm. A study made by Max E. Brunk of the Florida Agricultural Experiment Station, located at Gainesville, Florida, indicated that the farmers were interested in the results obtained from his studies but many other felt that, based on their own experience, they were doing the job either the best way or only way it could be done. In speaking of new ideas, the statements, "It won't work," "You'll never be able to make my workers do it that way," were commonly heard.

* 29, P.230
We have heard the same statements made in industry and still hear them made each day. Mr. Brunk's idea of Work Simplification relates more not to making the workers do a job a particular way but rather to show them that they can do the job a simpler, easier way.

One of the effective tools used by Mogensen and adopted by H.P. Hood & Sons is the use of cartoons. They become apart of the Basic Course Notebook and thus can be used in the individual plants by people presenting a work simplification program to plant people. An example of one follows. Mogensen believes that one phase of scientific management which has been muddled and misunderstood is that of time study and motion economy. "Taylor, the father of scientific management, once said; 'Time Study is by far the most important element in scientific management'. This statement is perfectly logical because scientific management is simply management that is based upon actual measurements, and of course Taylor realized at the very beginning that time study was one of the most important tools of management. He saw that time study afforded an opportunity - first, to measure work and, second, to measure elementary times which could be used over and over again in building up times for variable operations."

Because of the now famous "efficiency expert", we are familiar with many of the early mistakes. "Time studies were started without giving any consideration to standardization of methods and equipment, or providing any of the services to the operators which we know are essential."

* 4, P.1  
*** 4, P.1
According to the theory of aerodynamics, and as may be readily demonstrated through experiments, the Bumble Bee is unable to fly—This is because the size, the weight, and the shape of his body, in relation to his wingspread, make flying impossible. BUT the Bumble Bee, being ignorant of these scientific truths, goes ahead and flies anyway—and makes a little honey every day.
By applying the principles of motion and time study, methods engineers are today achieving remarkable results in the form of increased output per worker. Careful study of all motion going into an operation - many times with the aid of motion pictures - enables analysts to determine the most efficient way of doing a job. Examples of this might be: insuring that the operators hands share equally in the work, constructing jigs and fixtures to hold the work thus releasing the hands for more effective work, prepositioning tools to avoid delays, arranging supply areas to eliminate unnecessary reaching. We find here the common-sense approach to the principles of motion and time study. Taylor and Gilbreth, although they differed in their technique and definitions, had one common goal - the elimination of waste in industry - in view.

"Improving the job is necessary because competition is the spirit of the free enterprise system, and the cost and quality of the job or product determines whether the job will be repeated or the product will be used. It is a function of all levels of management. It is part of the job of managing and no one is better qualified to improve a job than the supervisor who is on the job.

Does each supervisor have a complete knowledge of how much 'back-tracking' there is in his department in all the jobs? How much 'lifting' and 'picking up and putting down' there is in each operation? Does top management see the advantages of having each manager, no matter how small his department, aware of these same conditions and able to do something about them?.............
Improving the method is not a speed-up nor should it make people work harder or hurry them. Rather it should be aimed at making the job easier and safer, along with more output, less cost, and better quality."

The way in which this methods improvement is accomplished is the most important thing and it is in this field of what to do and how to do it that we find the theme of work simplification. Let the people on the job do it. Have supervision direct a planned attack upon the job that is to be improved. Every job needs attention, there is always room for improvement.

"Excessive turnover and absenteeism increase costs and also affect relations and department teamwork. Some jobs are heavy or unpleasant so that people won't stay on them. Some jobs call for continual instruction because they are unsafe. Looking for an improvement only to increase production or to lower costs may bring about additional relations problems, but the making or an operation or job less tiresome should be part of every methods improvement."

"Instilling job interest and elimination of awkward or unpleasant parts of a job are intimate parts of management and, when brought about through the efforts of a supervisor, pay in increased teamwork, and enhance his standing among the people he supervises." * This is true only to the degree in which the supervisor has permitted his people to participate. If the supervisor alone has developed an improved method without consulting the people on the job and attempts to impose the improved
methods on the job in question, he will find a definite resistance on the part of his people to accept the improved method. There was no attempt at teamwork.

Dr. Williford I. King, Professor of Economics at New York University, in his article "Raising the Working Man's Scale of Living," says:

"In every nation in which the people rule, the dominant economic philosophy is almost certainly expressed by the slogan - 'The greatest good to the greatest number.' Since in the modern industrial area, the majority of the gainfully occupied receive most of their income in the form of wages, the slogan is equivalent to demanding the highest possible average annual pay for wage workers."

Allan Rucker in "Labor's Road to Plenty," says "The only way actually to increase the average income and purchasing power of the worker is to find the means to increase his productivity. There is no theory about this, although few people seem able or willing to understand it. Whenever we do increase a worker's productivity, nothing has ever prevented the worker from benefiting in proportion to his individual contribution to the increase. Neither depression nor boom, politicians or profiteers have ever prevented the average income per worker remaining proportional to productivity." The need for teamwork is well illustrated in the following cartoon. (Figure 2)

H.P. Hood & Sons have in their possession a film which is shown at the various locations of the organization. It is a very pointed film, entitled-"Productivity, Key To Plenty".
Productivity is the key to plenty. Without it, all the material things we desire in life would be unobtainable. Since the normal individual desires these material things, he seeks out and obtains the means to gain these material things we speak of. It can be said that the individual does this only because he wishes to avoid losing something. Whether or not, he feels that he will gain his ends through increased productivity depends upon his point of view and what he believes.

In primitive times, the individual had to supply his own needs in order to live. His prosperity was measured alone by his effort, and ability. However, as time passed, it became apparent that certain individuals had certain specific capabilities - something in which they excelled. And that also, by specializing in the task for which he was best suited - others doing the same thing - he was able to have more than he had before. This he did by disposing of his surpluses in exchange for the other material things he desired.

In order to have more, it is very obvious we must produce more. We can have only what we produce. Money, our medium of exchange today, means absolutely nothing, if we are unable to obtain the material things we desire with it. Goods and services must be produced in ever increasing quantities in order to satisfy the wants of all. It has been said that the only way actually to increase the average income and purchasing power of the individual is to find the means to increase his productivity. One of the tools available to aid in industry today is Work Simplification. It is the use made of this tool by the dairy industry which is the subject of this study.
Today's profits will not come from lower material costs. They will not come from lower labor costs. They will come from increased operating efficiencies....The objective of every plant today must be a better product produced at a lower cost - and at the right time. Years ago Frank Gilbreth said: "There is no waste of any kind in the world that equals the waste from needless, ill-directed, and ineffective motions, and the result of unnecessary fatigue. ...Motion Economy... subjects every function of management to a searching inquiry in order to find the one best way: A Motion Economy Program sets out to discover practical methods of eliminating these wastes." *

Management personnel are expected to produce ideas as part of their function. Production employees are usually required only to perform a prescribed routine. In the first place, the problem, is one of getting a normal source of ideas to yield the best ideas of which it is capable. In the second, it is one of creating situations favorable to an expression of ideas from a relatively untapped source.

A number of specific tools for use on various levels in the organization have been evolved as a result of recognition of these problems. The interplay of minds in a carefully planned and skillfully directed conference stimulates constructive thinking. A properly designed and well administered suggestion system makes for an articulate employee group in the matter of improvements in many areas of the enterprise. An intelligently conceived and vigorously prosecuted program of work simplification focuses the attention of all employees on improvements relating to their own job.

* 4
To find a better way of doing things and the methods used to find this better way employed by the Dairy Industry is the topic at hand.
Which Light

CONTROLS YOUR MIND?

A. H. MOGENSEN - WORK SIMPLIFICATION PROGRAMS
Chapter II

Which light controls your mind? If it were possible to label all men's minds accurately, we would find some that would accept the green light, - come in. While others would have a habit of dozing off while waiting for the red light to change. It seems he always misses the green light because he dozes too long thus red is always in front of him. It is important to know who is who in an organization - who are the "Go Ahead" minds and who are the "Stop" minds. The "Welcome" fellow is the type of individual who keeps an organization from going to seed. New ideas are the thing he has been waiting for, he want's to try out anything and everything to see if it will work.

The other fellow - "Stop" - is too busy doing very little to be bothered with new ideas or suggestions.

It cannot be stressed too strongly the need and value of an open mind in approaching motion and methods work. The greatest opportunity for the elimination of waste - waste of time energy and material - will only be realized when full cooperation is secured between management, supervision, the workers, and the men performing the staff function. A very worthwhile endeavor can be directed along the lines of obtaining a motion - minded organization. In this way, we eliminate the feeling or conclusion among the people, that the engineers or motion economy staff will do all the thinking. As we get our organization thinking more and more along the lines of motion economy and have them become motion - minded, we will find many more suggestions coming into supervision.
In cooperation, lies the secret to success in the whole field of motion study. It is for this single factor - cooperation - that Work Simplification indicates the importance of consulting all concerned with a methods change.

It is safer to speak of the "best method yet devised" rather than the "best" method. For in this way, it is indicated to the people that further improvement is possible until there is no labor required at all to do the job. We have insured an open mind. These mental blocks, such as, "it won't work", or "it can't be done", are disposed of in the beginning. An open mind paves the way for successful analytical work, but it is not sufficient.

As was noted before regarding the 'Red' and 'Green' light, one can be open-minded in the passive sense of being receptive to suggestions but will not lead to accomplishment. The greatest amount of originality is brought about by those who have an inquiring mind. The one who constantly asks questions and takes nothing for granted is the one who originates new things. Improvements come from first examining what is with an open mind and then inquiring into what might be.

"The questioning attitude is a tool of demonstrated practical value in securing progress and advancement. Applied to manufacturing methods, it is particularly valuable for bringing out suggestions for improvement. The usefulness of the questioning attitude has long been realized by methods engineers who adopt it toward every job they study. Because it is an attitude rather than a technical procedure, it may be developed with success by anyone who recognizes its value."
"In seeking to improve any existing method, it should be approached with an open mind and the sincere conviction that the job can be improved. Experience justifies this approach. It has been demonstrated repeatedly that methods can be improved again and again as human ingenuity and a fresh viewpoint are brought to bear upon them."

"An open mind is not in itself sufficient, however. One can be open-minded for example, in the passive sense of being receptive to suggestions but this will not lead to improvement. Those who are seeking methods improvements must take the initiative in originating suggestions if results are to be accomplished." *

It has been said that Mr. C. F. Kettering's, retired Vice President of General Motors, primary joy in living was the fun he obtained in trying to find a way to make something better. How many people in a plant secure their fun in this way? It seems today that in a great many plants people derive a great deal of pleasure out of showing some one else that an idea was no good. This feeling has been responsible for much of the slow progress made in a great many industries today. For that reason, it would seem better if an attitude of cooperation - working the problem out together with the plant people - were fostered rather than having an atmosphere of experts knowing all there is to know about a job. The job needing the greatest amount of attention today in industry is that of assembling the intelligence of the plant.

"...Just a Minute" by Channing Pollock is an excellent illustration of how well a few minutes can be useful or of no value depending upon one's point of view.

* 3, P.7-8
"Just as a lady recently in the news put her spare coppers into a box and, after a while exchanged them for defense bonds, so minutes grow amazingly. A mathematical friend of mine calculated that a considerable number of additional army trucks could be produced daily if every man in the huge plants worked until the whistle stopped blowing, instead of quitting when it began. My friend was merely amusing himself, of course, but the figures become significant in relation to our present war effort. Five minutes a day wasted at every machine turning out cartridges means millions less rounds of ammunition in a year."

"This, however, is somewhat apart from what I started to say, which is, 'What can you and I do for ourselves in a minute?' And the answer to that is quite big enough without bringing in the much greater problem of the nation as a whole. So big that I can't help believing the realization of it's importance might alter a very great many lives. When I find that the lad who devotes a few hours a week to my gardening is employed in a factory all day, and is working for me to earn extra money for college, or that a youth in the near-by shipyard studies navigation at night, it isn't difficult to envision them going farther than a lot of the more prosperous kids in my neighborhood who spend their spare time in the corner drug store.

"Not long ago, I had a letter from a former bell boy in a hotel where I lived when I first came to New York. One day I had found him shooting craps with another boy at the end of the hall. As he recalls it, I asked, 'Is that the best thing you can find to do with your time?' And he replied, 'I only do it for half an hour when I come on duty, and for another after I quit.' "You suggested," he writes, that I compromise and try craps after I quit, and you lent me a book to read in the other half hour."
The book was Dicken's 'Tale of Two Cities', and before long I was reading every moment I could snatch. That explains the heading on this letter paper. The heading gave the writer's name as chief of one of the most important public offices in New Jersey.

"There are two things in this world that are only as big as the man who possesses them: one of those things is a dollar - and the other is a minutel" *

In the program conducted by H.P. Hood and Sons, many visual aids have been developed in the course of the work to assist the director and line supervisors in presenting the program to the plant people. Two of these are helpful in pointing out to a group the necessity for realizing and understanding one's point of view. The first one is entitled the XX Demonstration. It follows:

XX

What does it look like to you? (Ask several people in the group). (It could be a "W" over an "M"; a "W" over and inverted "W"; two "V"s over two inverted "V"s", two "V"s over "M"; or various other combinations). You have named several things this might represent. I wrote it as two XX's.

If I was to send this out to you (meaning it for two XX's), asking you what it was, you could have many interpretations. In each particular case you would be right in your interpretation. When I received your answer, I might say, "What is the matter with him? Why doesn't he see that it is two XX's?"
It all depends on your point of view. This little demonstration is given as an aid to get the point over to you, to be sure you give a good explanation of what you want the other person to understand.

We have another little demonstration we would like to put on. (At this point remove cover from ball which is located on table directly in front of group and select someone from the center of the room.) The object is a round wooden ball with one half of the surface painted black and the other white. When it is placed on the table it should be positioned in such a way that a person sitting directly in front of the ball will see the black surface only. Then proceed with the experiment asking questions, "Bill, what color is this ball?" (Black) "Right". (Next select someone from the side who can observe a portion of the white). "Mary what color is this ball?" Black and White) "Right". From my point of view the ball is white. If you both insist what you see is right, and I insist what I see is right, we will get nowhere. (Next turn the ball so that all can see the black and white.) As we can all now see the ball is both black and white. Again it is the point of view of each of us here, and each of us is right in what we could observe. What does this mean in terms of human relations? The tragedy is that we cannot turn our various view points around for each other as readily as we can a black and white ball. This is one of the reasons that many problems are created and remain unsolved because each one of us hesitates to go to the other side of the table to get the other fellow's view point. You are bound by your environment and habits of thinking, and I am bound by the same limitations. The only way for us to settle our differences and arrive at
sensible conclusions is by honest discussion.

These are very simple demonstrations yet they have proved very successful when presented to operating people. It so often holds true that we spend a great deal of our time trying to find something big while we could be more successful if we spent this time picking up and developing the small things. In the long run, our productive effort would have more to offer.

More and more concerns in industry today are finding it necessary as part of their point of view to become interested in their people. It has been clearly demonstrated many many times that the individual should be treated in the same way that a machine would be treated. That is as a capital investment.

A very interesting survey was published recently by the University of Michigan. Although the material was not gathered from one of the nations major dairy concerns, it deals with problems with which they are faced and certainly indicates a normal reaction on the part of individual workers to given situations. People in the Dairy Industry are no different from these people of Prudential Insurance Company.

"If you boss people and you want to get production, don't just harp on more work in less time - be genuinely interested in the people who are working for you.

This is one of the lessons that psychologists learned in an investigation by Dr. Likert at the University of Michigan Survey Research Center at Ann Arbor."
The supervisor whose employees turned out the greatest amount of work the scientist found, is himself concerned primarily with the people working under him.

Pressuring for production may work to some degree. But the best results are achieved when a worker's internal motivations are tapped - his self expression, self determination, and sense of personal worth. A person works better when he is treated as a personality, given some degree of freedom in the way he does his work, and allowed to make his own decisions.

"The capacity of a nation or a society to survive," Dr. Likert explained, "depends in no small part upon its skill in organizing industrial, governmental and military activity". *

"The effectiveness of the political, economy and military activity of any society is determined in large measure by the nature of that society's social organization and by its knowledge and skill in organizing human activity." 

Some of the difficulties encountered in attempting to make international organizations function smoothly may be due to the lack of knowledge of fundamental principles that could be applied to their organization.

"We need", Dr. Likert pointed out, "to know the answers to such questions as: Why groups act the way they do; why some are effective and others are not; Why certain groups become belligerent and even pathologically aggressive and destructive and what makes leadership effective."

* 23
** 23
This first study is a 10-year program of the effect of group organization on human action was made in the home office of the Prudential Insurance Company. Studies of other kinds of groups in business, government, and the armed forces as well as voluntary groups such as business and professional societies, woman's clubs and the "Against Groups" such as the anti-vivisectionists are planned.

Comparison was made between the highest producing section in the Prudential Insurance Company and the lowest producing section of employees performing the same duties. A total of 742 non-supervisory personnel were interviewed and 73 supervisors and managers.

Supervisors of lower production groups are so immediately concerned with the goal of production that they try to reach it by what seems to be the most direct route, often spending a considerable portion of their own time on straight production work. High producing supervisors, on the other hand, assume that the best way of attaining high-production is to motivate their employees by enlisting their identification with the work to be done by giving them a feeling of responsibility."
Table I

Pressure for Production does not Characterize the high-producing sections...

<table>
<thead>
<tr>
<th></th>
<th>Number of First-line Supervisors</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Exerting High</td>
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<tr>
<td></td>
<td>Pressure</td>
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<tr>
<td>High Sections</td>
<td>3</td>
</tr>
<tr>
<td>Low Sections</td>
<td>6</td>
</tr>
<tr>
<td>High Divisions</td>
<td>4</td>
</tr>
<tr>
<td>Low Divisions</td>
<td>7</td>
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Number of First-line Supervisors

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<thead>
<tr>
<th></th>
<th>Working under</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Strong Pressure</td>
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<tr>
<td>High Sections</td>
<td>0</td>
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<tr>
<td>Low Sections</td>
<td>5</td>
</tr>
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<td>High Divisions</td>
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<tr>
<td>Low Divisions</td>
<td>5</td>
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Though it is possible that close supervision and pressure from above is the result of low productivity, it is more than likely that low productivity is both a cause and an effect. As the low producer is made more production conscious, he tends to emphasize ineffective means of achieving production. *

* 12, P.8
"Employee-Centered" Supervisors are higher producers than "Production-Centered Supervisors..."

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<thead>
<tr>
<th></th>
<th>Employee Centered</th>
<th>Production Centered</th>
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<tbody>
<tr>
<td>High Sections</td>
<td>6</td>
<td>1</td>
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<tr>
<td>Low Sections</td>
<td>3</td>
<td>7</td>
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<tr>
<td>High Division</td>
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<tr>
<td>Low Division</td>
<td>4</td>
<td>7</td>
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Compared to the low-production sections, supervisors of the high-production sections are more likely to consider interest in their employees rather than production of primary importance in their jobs. And these more effective supervisors are also more likely to regard their employees as human beings than as part of a machine for getting a job done.

Examples of attitudes of "employee-centered" high-producers:

"I've tried to help them in getting better jobs and to get advanced but...there's so few positions for them to go to. That's why I teach them how to supervise. A lot of my girls are assistant section heads today."

"I study girls work, find out who works together and put them together. The main thing is to keep the girls happy. I talk with them and learn what their peculiarities are so that if a girl gets excited I know whether it is important or not...Your girls have to feel you are..."
one of them, not the Boss...Some girls get sort of cranky and you can't just say "Do it", It is much better to ask them to do work in other ways. That's human nature.

"I try to understand each girl. I remember I was one once, and I liked to be kind of known by the supervisor. Knowing the girls helps with the handling of the work here - you have to know what happens outside too to help them inside here at Prudential.

Even though high-production supervisors are more employee-centered, they are less like their employees than are heads of low-producing sections. Section heads in divisions with poorer production records are more like their employee in what they like about working for the company than are high-production division supervisors. This is consistent with the finding that, comparatively speaking, supervisors in the poorer producing groups seem to play more of the role of employee than of leader. *

* 12, P.10
Table III

High-Production supervisors encourage group participation and discussion...

Rating of supervisory interviews on degrees of democracy in supervision by interviewers and coders favored the high-performance leaders. Democracy in supervision was defined as the degree to which the supervisor utilized the staff in the decision making process. Significantly more of the heads of high-production sections were rated as democratic than of low-production sections. No such differences was found between section heads and low-production division.

Excerpt from an interview with supervisor from high-production section using democratic procedures: "I also try to discuss everything with the whole back row. They work directly with the girls and they can tell you things that you can't observe...When changes are to be made I call them all together, and I usually decide on exactly how it's to be done and then ask them what they think. They have ideas. They're close to the girls and know how the work has to be done...We discuss it and I would change my ideas if theirs seems to be better. That's why we have discussions so that we can find out what would be the best thing."

Excerpt from an interview with supervisor from low-production section using non-democratic procedures:

Girls want to and do express themselves more today than when we came in. In the past girls were more cringing and pliable - not now.
They tell us we get a great many girls who have had no restraints at home— and we have to do the teaching." *
Table IV

Assistant managers of high-producing divisions are more effective in human relations than those of low-divisions...

Interviews lasting between two and three hours were conducted with all assistant managers of the highest and lowest divisions in the DPD's and OPD's. Top staff members of the Survey Research Center rated these interviews on 14 characteristics without knowledge of the production records of these divisions.

1) Effectiveness in getting across to the staff the principal things they need to know to do their jobs well.

An assistant manager in a high-production division:

"You have to have the cooperation of each clerk... by being sure they understand any new function to be performed. Not only to know what to do but WHY. Let them know the why of things. Have them understand why things have to be done a certain way."

2) Overall effectiveness in human relations

An assistant manager in a high-production division:

"You have to think of the possible reaction. Anything that you may do or say will cause a reaction. You may knowingly be bawling them out. If they think you're not treating them as humans but as machines, they are not going to work very well for you."

3) Understanding of the motives, aspirations, and problems of the people of his division

An assistant manager of a high-production division:
"I have done everything I can to cultivate the feeling that the girls can come and talk with me as individuals, openly and freely, about any problem."

(4) Instilling confidence and security in his staff

Two assistant managers of high-production divisions:

"You have to remove the feeling that someone is working for someone else. There must be a sense of working with."

"If you have, and you have to have, the confidence of your own people, you can rely on their support. You have to be above board with them and be honest with them. To get that confidence you yourself have got to show willingness to assist—to get in and lend a hand if necessary."

(5) Time and energy given to human problems rather than work problems

An assistant manager of a high-production division:

"Our present manager has been leaving things up to his staff much more than the former manager ever did. This has allowed him to devote most of his time to personal matters."

(6) Refraining from exerting direct pressure on staff to get work out

An assistant manager of a high-production division:

"Pushing will upset the girls. If you have to rush and rush all the time to meet closing times, morale goes down."

* 12, P.17
Table V

Certain attitudes of employees are related to productivity...

Thus far, the differences reported have come from an analysis of interviews with supervisory personnel. The attitudes of rank and file employees in the high and low producing sections, however, do not show the expected differences on many of the dimensions of morale. Thus, the employees in the high sections were similar to employees in the low sections in their job satisfaction, in their identification with the company and in their satisfaction with job status. This similarity may have been due in part, to the fact that they were all under the same wage policy, the same promotional policy, the same employee benefits and the same working conditions.

In spite of this general commonality of attitudes, some significant differences were found on a number of questions. Namely, among high producers there was:

greater pride in work group
more identification with division
greater liking for the manager
more thoughtful criticism of certain company practices.

These differences are presented in the following pages. *

* 12, P.18
Table VI

Pride in work group is related to productivity...

Employees in high-producing work groups have greater pride in their sections and divisions than employees in lower-producing groups...

Question: "How well do you think your section compares with other sections in the Prudential in getting the job done?" Employee saying "very good—one of the best in the company"

...in high-producing sections ................. 41%
...in low-producing sections ................. 19%

An employee in a high-producing section answers this question as follows:

"I think we are 100% tops. We all work together—we are a good bunch and we have good bosses who cooperate all the time. We're tops"

Pride in division:

Question: "How well do you think your division compares with other divisions in the Prudential in getting the job done?"

Employee saying "very good—one of the best in the company"

...in high-producing sections in OPD's .......... 43%
...in low-producing sections in OPD's .......... 30%

But there were no such differences among DPD employees.

Employee identification with division:

...32% in high-producing sections and
...17% in low-producing sections
have very high identification with their divisions.

An employee in a high-producing section says: "In our division we are always on time with our work, we work together." *
Managers and assistant managers are more popular with employees in higher-production divisions...

Question: "How do you feel about the manager or assistant manager of your division?"

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<th>Strong liking</th>
<th>Mild Liking</th>
<th>Neutral or Dislike</th>
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<tbody>
<tr>
<td>HIGH divisions</td>
<td>54%</td>
<td>37%</td>
<td>9%</td>
</tr>
<tr>
<td>LOW divisions</td>
<td>25%</td>
<td>37%</td>
<td>38%</td>
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</table>

An employee from a high-producing division comments on her manager:
"I think he's very nice. He is nice to talk to. I heard the girls didn't like it there when they first came because the work is pretty complicating, but he talks to you and tells you not to worry. I think it's nice."

Two employees from a low-producing division comment on their manager:
"He's not so good--He calls girls down in public--lets his personal feelings get the best of him. He holds grudges." "He is not friendly or as liberal as the previous one and I don't trust him."

But this finding is not duplicated at the level of immediate supervisor. There is no significant difference in the esteem with which the section head or immediate boss is held among sections varying
in productivity. Among individual employee, however, liking for immediate supervisor is definitely related to job satisfaction, to pride in work groups, and to identification with company. *

* I2, P. 20
Table VIII

High producers are more critical of certain personnel policies...

Attitudes of employees towards employee rating system

...of high-producing sections

...14% were favorable and 31% unfavorable toward rating system

...of low-producing sections

...25% were favorable and 24% unfavorable toward rating system

An employee from a high-producing section who is critical of the rating system:

"I don't know why they rate anybody...They tell you you have an excellent rating, but you just don't get anywhere. You might as well get a poor rating. It all depends on who you know."

The assumption is often made that criticism of company policy is a sign of low moral and worker disaffection. This assumption must be qualified, however, to take into account both the nature of the criticism and it's source. The rating system which drew fire from employees had already been recognized by the company as a problem meriting thorough examination. It is significant, therefore, that the higher producers were more critical than the low producers.

The source of criticism is also an important factor to consider. When criticism comes from the better motivated, higher producing employees, it cannot be dismissed as the general negativism of disaffected people.
Further evidence on this point comes from the interviews with first-line supervisors concerning the placement policy.

Among Supervisors

... of high-producing sections

... 7 out of 9 were critical of company policy placement

... of low-producing sections

... only 3 out of 12 were critical of company policy placement

A supervisor who is critical of company placement policy:

"I have frequently seen men placed in jobs they don't like and can't do. They could probably do well if placed at something else."

* 12, P. 21
Table IX

Participation in employee suggestion system...

When employees are encouraged to make suggestions just to make showing on the number of suggestions made by the division or department, and without regard to quality, more employees in low-producing divisions than in high ones make suggestions.

In the OPD's where the volume of suggestion is low, and where management has not been conducting a vigorous campaign for suggestions--

Employees making suggestions:

...in high-producing division..........................31%
...in low-producing division..........................33%

However, in the DPD's where the volume of suggestions is high and where the management has been conducting a vigorous campaign for more suggestions--

Employees making suggestions:

...in high-producing divisions..........................60%
...in low-producing divisions..........................87%

The total number of suggestions made by employees was much higher in the DPD's than in OPD's, but the average dollar value of an approved suggestion was much higher in the OPD's (approximately $33 to $11 for DPD's).

Evidently, vigorous promotion of suggestions emphasizing sheer number:
(1) Does not encourage suggestions as much from work-oriented employees as from employees who are less work-oriented, and
(2) Does not improve the quality of employee's suggestions. *

In summarizing, the report concludes that production differences between sections and divisions in the Debit Policy Department and the Ordinary Policy Department are primarily a function of supervision and management.

First line supervisors in high production work-groups differ from those in low production groups in that they:
(1) Are under less close supervision from their supervisors
(2) Place less direct emphasis upon production as the goal
(3) Encourage employee participation in the making of decisions
(4) Are more employee centered
(5) Spend more of their time in supervision and less in straight production work
(6) Have a greater feeling of confidence in their supervisory roles
(7) Feel that they know where they stand with the company

Evidently, lower production supervisors are so immediately concerned with the goal of production that they try to reach it by what seems to be the most direct route. They appear to lack understanding of the best means of achieving high production through the use of their own time in effectively motivating their own employees.

* 12, P.22
High producing supervisors, on the other hand, assume that the best way of attaining high production is to motivate their employees by enlisting their identification with the work to be done and by giving them a feeling of responsibility.

Though morale was relatively high in all units the groups with higher production showed greater pride in their own work groups. In addition to pride in the immediate work group, there was more identification with division among the poorer producers. Other dimensions of morale, such as identification with the company intrinsic job satisfaction and satisfaction with job status were not found significantly related to productivity.

These findings further suggest the following psychological interpretations:

People are more effectively motivated when they are given some degree of freedom in the way in which they do their work, than when every action is prescribed in advance. They do better work when some degree of decision making about their jobs is possible than when all decisions are made for them. They respond more adequately when they are treated as personalities than as cogs in a machine. In short, if the ego motivations of self-determination, of self-expression, of a sense of personal worth can be tapped, the individual can be more effectively energized. The use of externalized sanctions or pressuring for production may work to some degree, but not to the extent that the more internalized motives do. When the individual comes to identify himself with his job and with
the work of his group, human resources are much more fully utilized in the production process.

These results are not presented as generalizations which apply to all types of production-situations. They are the findings of the first of a series of studies and their generalizations will have to wait upon the outcome of these studies. For example, they may be limited by the type of production-situation in the Prudential Company where work-methods are very well standardized. Where work methods are not so thoroughly institutionalized, the findings reported here might not be duplicated. On the other hand it is possible that even in situations where supervisors have considerable freedom with respect to work-methods, emphasis upon employee motivation can improve productivity."

* 12, P.3
Chapter III

Work Simplification is continually proving itself within our industrial enterprises as a means, a tool or instrument in furthering progress. Progress is achieved through the use of work simplification because the goal or objective of it is to eliminate waste, to make more satisfied customers, and to grant everyone better job security. The important element here is the individual. Whose job are we interested in when dealing with waste - waste of product, waste of motion, and waste of time? It is the individual.

H.P. Hood & Sons, in its application of work simplification, have proven to themselves the distinct advantage of applying the principles of work simplification through their people rather than through an "expert". Although there are other accepted management techniques in force today which industry finds useful in gaining the ends mentioned, in view of the proven success of the Hood company program, it seems necessary to focus our attention on the methods adopted by them. Many group meetings are held with the operators in an effort to have them develop a solution to a problem. It has been found that once the people have agreed to a particular solution or method as being the correct one, they do everything possible to insure success of the project.

The need on the part of management is to see that they have qualified people in a Work Simplification Program. In turn these qualified people should present work simplification in some form to all people of the organization. The focus of attention should be on these
people in the lower levels. They must be equipped with the many and varied tools of Work Simplification and then encouraged to use them. If top management is not sold on the program, 100% or do not believe in it enough to see the value of a continual follow-thru program, then the initial cost of the program and the material presented is completely wasted.

It might be well to illustrate the importance of using all the tools and techniques of work simplification we have been taught in solving problems. This example is of a visual aid in use by the Work Simplification Department of H.P. Hood and Sons at their annual refreshers.

"Every day we are all faced with many problems. For a moment we'd like to think of these two pieces of wood as two problems. They are the same mass, weight, and shape. (Show them) This is an inclined plane, pitched down in your direction. (Show) our problem is to get this block of wood to travel down the inclined plane of its own momentum. You may change the shape if you wish.

"If we reshape the block like this, we are certain it will travel down the inclined plane. We all recognize the answer to this problem because it's one of those obvious problems we solve every day.

"Our second problem is to reshape the other identical block to the same mass and weight, but in any desired shape, so that it will roll up the inclined plane of its own momentum. Many times we get the reaction, well that's nothing I can solve. That's something for the engineering department, my superior, or perhaps the experts. Before we too readily take this attitude, we should stop and analyze the situation to see if we have any tools available that may help us solve this problem.

"One of these is the tool of participation.
Many times, even though local management or the foreman do not know the answer to the problem, they may have someone working very close to them who, through some other experiences, knows the answer. By using the tool of participation — getting ideas from individuals we're working with — many times we solve this type of problem quite readily. As you can see, we have reshaped this block into a double cone which will travel up the inclined plane."

This is a very simple illustration yet it proved very effective when demonstrated to plant groups to prove the point of using all available aids or tools in solving problems. All techniques cannot be used, for the particular problem will not call for it. However, some one will apply and the field should be searched to find the most effective tool.

William J. Reilly, in his book, "The Law of Intelligent Action", says:

"When a person is confronted with a problem, the intelligence of his action is dependent upon three primary factors:

(1). His desire to solve the problem.

(2). His ability to solve it.

(3). His capacity for handling the human relations involved."

Because most individual's desires are personal and so close to individual interest, the desire to solve problems relating to work is not always present. Most everyone takes the selfish viewpoint when it comes to solving problems that confront them. It is evident that a full desire to find easier and better ways is not prominent in industry
today and it is shown by the difficulty in industry of raising pro-
ductivity. It is said that the reasons for someone wanting to do a
thing are to gain or to avoid losing something.

In order then to take advantage of this selfish viewpoint,
we must have an objective. In Work Simplification, the singular
objective is to eliminate all forms of waste, to make a better product
or render a better service, at a lower cost, and at the right time with
less effort.

By producing our product with less effort not only improves
working conditions but as an elimination of waste, it helps in attain-
ing the objective. Improving a product or introducing new ones is a
must in order to secure new customers. One cannot rely only on old
customers. Cost, of course, is the factor between success and failure.
Expressing it in a few words, this objective can be attained by the
use of waste energy, not by over-speeding the worker. Past history has
shown the tremendous amount of time and effort spent on improving and
controlling the mechanics of an operation. However, very little has
been done in developing the personal relations between employer and
employee. It is this phase which will be discussed in more detail later.

Let it suffice to say, for the present, it is human nature
to resist change and to resent criticism.
"To be productive and satisfied, and these are practical tests of adjustment, an individual must be able to do and want to do the work to which he is assigned. The "square peg in a round hole" is found at too many work stations." *

The most comfortable feeling for any of us to have is to accept things as they are. It is only in the exceptional case do we find people disturbed about things as they are. Generally we get disturbed and go into action when our routine is upset. Very few people fail to see the necessity for improving methods. As a result, few find fault with the objective of Work Simplification. However, when their complacency is upset or disturbed, they resort to action. We must not let this negative action stop progress, however, we will always have new ideas thrust upon us. If we fail to accept or consider them, we are "washed up". A concern must maintain its position in industry - costs must be held in line and new products introduced.

* 8, P.1
WE RESENT CRITICISM.

NO NO!
NOT THAT WAY!
Chapter IV

One of the most effective programs in the dairy industry is that conducted by H.P. Hood and Son's of Boston, Massachusetts. "Very definitely, work simplification has "paid off" at H.P. Hood."

"It has increased production and reduced costs by improving the methods and eliminating the unnecessary motions. What's more, it has boosted employee morale by making jobs easier." *

"Work simplification has paid dividends at H.P. Hood and Sons, Boston - by increasing output, cutting costs, bettering product quality and improving employee relations all along the line." "But - we hasten to say that these dividends didn't just happen: To win them it was necessary to draft a practical project, to get it off on the right foot, and to follow through." We will explain here how all this was done."

"First, our early experience with work simplification brought us to recognize two distinct ways of applying it."

"A professor can if he wishes, employ what may be called the "experting approach." That is, hunt out, somewhere, a specialist to put the program over - someone who can go through the plant, see all the opportunities for making workers more effective, develop a workable method for bringing this about, and then actually put the plan to work."

"On the other hand, there is the company approach - we mean a careful building up of the work simplification idea through the

* 18, p. 47
company's own personnel to mount a cooperative attack on the problem by the whole organization." **

It was the latter type of program followed at Hood's. The program received its beginning in 1941 "when we tried the idea of taking a movie of a job that we had been unsuccessful in reproducing in another plant...it did teach us the value of movies in industry. It also showed us what could be accomplished by bringing the employees concerned into the discussions and analyses of their jobs." *

This preliminary work simplification was done by Mr. Harold Dunlap while serving as a Plant Superintendent. In the fall of 1941, the company sent him to Massachusetts Institute of Technology for a short course in work simplification basic training. The year 1942 saw major development of a program. Experimentation was carried on at this superintendent's plant and the use of film was more extensive. In July of 1942, the superintendent attended and trained at Mogensen's work simplification conferences at Lake Placid. "Mogensen taught - and we learned through experience - that creation of a sound program demands adherence to these four major factors. -

1. The human factor must be given first consideration.

2. No individual should lose his employment due to improved methods resulting from work simplification.

** 19, P.50
* 18, P.47
3. Top management must thoroughly understand and actively participate in the program.

4. Several years are required for the development of a sound lasting program."

The company launched basic work simplification training in December 1942 but at this point the groups participating consisted of managers and superintendents. By May 1942, ninety-nine people had completed training. The same year another man was sent to Lake Placid - the milk division was represented this time. Following his return, the milk plants began to participate actively in work simplification training. The program began under Mr. Dunlap in the ice cream division. Basic training was continued in 1944 as thirty-nine completed basic training.

"One of the missing links in many attempted programs of this kind is lack of an organized follow-through. Too often no thought is given to this vital phase. We were fortunate in recognizing this need early in the program's development.

"Our original follow-through comprised a Work Simplification Conference Group formed late in 1943. The name has since been changed to Work Simplification Development Groups. This group is made up of supervisors from various departments in our different plants scattered throughout New England.

"Objectives of the meetings are to present problems for solution, trade ideas, and keep the members informed on latest techniques

** 19, P.50
Specifically the objectives of the group are:

1. To initiate and increase Work Simplification activities throughout the company by using existing proven methods.

2. To discuss and review present Work Simplification tools and techniques.

3. To keep abreast of new and revised Work Simplification Developments.

4. To carry out new and revised Work Simplification methods through discussion and practical application.

5. To develop leadership and broaden the ability of the group members by participation in and the conducting of group Work Simplification meetings.

6. To assist the Work Simplification Department.

This group has proven an excellent training ground for future executives and has witnessed the graduation of a number of supervisors to the executive level. Our whole theme in training is what we call a non-expert approach. This is where we furnish the tools and certain services to management, encouraging management to apply these to their various operations.

In 1944, another member of the company went to Lake Placid. And in the same year, a full time staff department was established.

* 19, P.51
It did not change the policy but rather intensified the program. The Work Simplification Department as such was now charged with the job of presenting basic training for supervisors, filming motion pictures film analysis, assisting management with special problems, and developing a long range work simplification objective for the company.

Additional members continued to receive the training program, it expanded into other departments and divisions of the company and at the present time (December 1951), a total of 845 people have been trained in basic work simplification.

In 1945, the Junior Board recommended to the Senior Board that a Waste Elimination program be developed in the company. The Senior Board accepted the recommendation and turned it over to the Work Simplification Department to carry out the program. It was at this point that the need for demonstrating to top management the value of such a program and how work simplification could effect a saving in time and energy was realized, and understood. As a result a special "peg board" demonstration was developed. This showed the immediate need for developing, establishing, and setting up standard methods. The peg board demonstration was so effective that it was carried into basic training the next winter with excellent results.

"A 24-hole "peg board" and two containers are placed before the "testee", who is seated at a table designed especially for the demonstration. An adjustable screen blanks off his face, making identification impossible. Told that the set-up represents a job he is then instructed
to do the task on his own - to think of the simplest and easiest way to insert the pegs in the holes; and then to remove them and return them to their original container." The demonstration is recorded on film with a movie camera.

"For the second stage, the instructor takes over and explains the accepted method of handling the pegs, and has the participant go through it once more, with another movie taken.

The third stage consists of the same method, but here the table top is sloped, the peg board is depressed, and a simple device has been introduced for removing the pegs. This illustrates the progress when a method is developed into a machine." *

This peg board demonstration was first used on the executive board and has continued to use with each successive group of basic trainees that have followed. The results have been excellent. In total, the demonstration, brings out the need or the value of having methods, giving proper instruction, and utilizing the space and equipment available. The third stage was actually developed by the work simplification staff, following an analysis of the results from basic trainee groups.

The peg board table was developed as a result, and with its use, an approximate 20% improvement was shown.

In November 1947, refresher groups were started in work simplification. As a result of remarks made by people who had completed basic training, that they did not learn anything new about work simplification

* 19, P.52
after completing their original training, it was felt that there was a
place for refresher material. There was a feeling by many basic trainees
that there was a lack of follow through on continuous training. At the
present time, all people who have completed basic work simplification are
given a one-day refresher.

The Hood company does not limit work simplification training to
top management and the supervisory level. Work simplification is a
philosophy with the organization and in the second place, is important
because it deals with people. It is felt that any successful program is
90% human relations. In addition, top management must thoroughly under­
stand and actively participate in the program. Mogensen likewise ad­
vocates that a company plan to put several years into the development of
a program. If not, the company should not start a program for it is his
feeling the program will fail and the company will waste its money. The
program at H.P. Hood was given complete support from the top levels of
management. In addition, all members of the board were given basic train­
ing, took part in the peg board development, and now receive annual re­
freshers. They understand, support, and participate in the work simpli­
ification program.

Having completed the training of supervisory people at a loca­
tion, the way was open, the need great, and the desire present to bring
work simplification to the employee and operating level. After a study
of the problem was made by the Development Group, a training program
consisting of three one-hour meetings, to be conducted by the line
CAN WE ELIMINATE?

SEE WHAT I MEAN?
-SHE CAN GET ALONG WITHOUT THEM!

J. D. WOODS & GORDON LIMITED
INDUSTRIAL ENGINEERS AND CONSULTANTS
TORONTO
organization, was developed. It was agreed that three hours was not sufficient time to fully prepare an operator in work simplification but it did permit the employee to participate in the program and thus contribute to the overall success of the program.

"During the first hour of this elementary training, we take 5 minutes to explain the background of the company's program and approximately 10 minutes to discuss the human relation involved, what work simplification is, and why it is important to all of us on our jobs. Then 35 minutes are given to films showing operations in our plants, and finally there are 10 minutes for a general discussion."

"In the second hour, we demonstrate the peg board technique, going through the first two stages but omitting the special table. We invite an individual from the group to participate, and after he works out and demonstrates his method, we show him the method that has been developed as the result of three years study..."

"We also emphasize the need for doing away with unnecessary motions, for developing skills, for eliminating twisting, turning, and excessive reaching. In this session, 25 minutes are devoted to moving pictures – films of some of their own jobs, showing different principles of motion. A ten minute general discussion completes this second session."

"In the third one hour session, we take up flow process charts. Not that these individuals are expected to make charts, but we want them to understand what a flow process chart is." *

* 19, P.52
It is a mistake in work simplification as in any other field, if some form of follow through with a continuing program is not followed. It is a mistake to teach methods development and improvement without a follow through. For this reason, the program at Hoods suggests a pattern to follow:

1. Management should discuss proposed changes with all of the employees involved, and give them an opportunity to discuss the changes and make suggestions.

2. Supervisors should be checked regularly to make sure they are applying work simplification on their jobs.

3. Employees who make suggestions should receive adequate answers as soon as possible.

4. Management should adopt a program calling for regular supervisory conferences to discuss work simplification activities. It is advised that supervisors be conference leaders, using a rotating system.

5. The work simplification program should be explained to all employees.

6. Work simplification meetings should be held for all employees annually. In this way, the Hood Company insures that all its people become familiar with Work Simplification, and, most important of all, insures that many of its people actually take part - participate - in the program. In addition to the above, other points are stressed.

7. Study one operation monthly, filming when necessary.
8. Assign all work simplification trained supervisors to the annual refresher.

9. Give three one hour sessions to all employees.

10. That supervision conduct a training briefing and Follow Through Procedure in advance of training.

It isn't quite as easy as the foregoing points might indicate. However, using these points as a guide along with the following tools and techniques, have proved highly successful at H.P. Hood and Sons.

The following tools and techniques are used and practiced in some form or other in the Hood Program.

- Before and After Films
- Basic Notes
- Films
- Peg Board
- Visual Aids
- Lick The Problem
- Flow Charts
- Daily Schedule
- Effective Layout
- Job Progress Chart
- Template Layout
- Flow Diagram
- Job Instruction
- Job Breakdown
- Motion Economy

- Procedures
- Orderliness
- Cleanliness
- Chart Analysis
- Role Playing
- Meetings
- Observation
- Follow Through
- Human Relations
- Learn By Doing
- Participation
- Imagination
- Planning
- Fact Finding
The program has continued to move ahead. In 1949, one hundred company employees and forty from outside companies received basic training. One hundred and thirty nine company people and seventeen from outside received the training in 1950. The number of people to receive basic training under the direction of the Work Simplification Department totals 1000. The film library contains 140,000 feet of film available to all locations in the system.

The program conducted by the Hood Company is outstanding in its field. It has received recognition from many quarters including six foreign countries. In fact, many companies have sent their representatives to the Hood location prior to their attendance at Mogensen's Clinic. Among these was the Abbott Dairy Company of Philadelphia, Pennsylvania.

A few examples of how work simplification was put to use at the operator level are worthy of mention. A very worthwhile suggestion, the result of the questioning attitude having been developed in each operator, was made by an operator at a group meeting in which all present were encouraged to participate. A bagging operation at one of the Hood Company locations required a girl to pick up three cups and position them in the bag. This was done by picking up three cups in the right and left hand, alternately placing them in the bag until the required number was attained. This method seemed to follow all the principles of Work Simplification - rhythm, right and left hand motions, no holding, and many others. However, one of the operators present asked the question - why pick the
cups up in the first place? After some consideration, it was decided that the quality of the product would not be affected and so the operator's suggestion of scooping twelve cups at a time into the bag was tried out. It proved very satisfactory for it made the work requirements of this job much easier. In fact, so much so, that the labor required was reduced one-third.

In another location, the problem of rearranging hardening room layout was turned over to one of the hardening room operators. He immediately considered the idea of using templates and a scale drawing of the chest area. By using this method, he was able to move his storage bins about the floor until the most suitable arrangement was obtained. Having done this, he sketched a proposed chest layout and presented his recommendations to the superintendent. This is a striking example of the work simplification attitude at work. For this man was not a trained layout or methods man, yet a solution to a problem was obtained. There might have been a better solution; however, this operator had a part in solving a problem which affected him. His every effort was directed towards a solution that would satisfy him.
Chapter V

Work simplification in the dairy industry is not limited solely to the industrial plant. Although we may not find any programs such as the Hood Company promotes, among the farms of the country, farmers are becoming more and more conscious of finding easier and better ways of doing work. It pays off for them too. Something we are prone to take for granted as being a fact - the universal use of electricity - comes to light in a story which appeared in the Electrical Review. The problem of finding easier and better ways is an individual problem, what proves easier and better in one case does not necessarily mean that someone else can and will be able to use the solution. Time is also an element to be considered in the method we adopt to solve our problems. We may be able to justify mechanizing our feeding chores tomorrow but today we might make the job easier by building some simple tool with the materials at hand.

The following example is merely to show what one farmer did in his own way following an investigation. Merely, brought electricity into his farm - yes to say that his work was made easier, the end result of Work Simplification attempts to do nothing more than this. It is of interest to note this example because it originated abroad.

"With the use of electricity, not only will their production costs be reduced but their work need not be such a task as it has been in the past. Hall Farm, Weatherook, eight miles south of the centre of Birmingham, has been rented by my family for the past 100 years. I took
over the farm in my own account in 1930 and succeeded in establishing a useful dairy business where I was able to dispose of my milk, eggs, and poultry at good prices. When the war came, my wife and I carried on the work alone, running both our farm and retail milk business. Hours were long and exhausting, all work being done by hand - milking, bottle washing, filling, pumping water. Then with faint hope I approached the Shorpshire Electric Power Company for a supply of electricity and with the support from the County Committee, I succeeded in obtaining a supply in 1944. All my original electrical equipment was purchased new and included a milking machine, sterilizer, water heater, pump, bottle washer, and cattle clipper.

Electricity has completely changed our life. The work is done better and quicker, we have leisure, a thing we never had before."*

* There are also many examples of our own to cite. The growing interest and need for finding easier and better ways of doing work. Many State Universities are conducting programs and research activities to help the farmer. The University of Minnesota has presented this summary. "Labor costs on many dairy farms are too high. Some farmers spend twice as much time on their cows as do others with herds of the same size and level of production. Labor records kept by a group of Nicollet County, Minnesota, farmers in 1943 show that one farmer with 21 cows averaged 90 hours of work per cow while another farmer, also with 21 cows and with the same level of production, spent 193 hours per cow.

* 15, P.487
In spite of the importance of labor as a factor of cost in dairy production, little progress has been made in reducing the time and effort required for chore work.

Saving time and effort in dairy farm work has made it possible to reduce the wage bill on many farms. On others it may be possible to increase income by expanding the volume of business or by doing more thorough work. On most farms it will be possible to shorten the work day and make the work less tiring.

A study was made during 1945 by the Minnesota Agricultural Experiment Station of chore work. There apparently is no one most efficient way of handling a dairy herd. Conditions differ from farm to farm and abilities differ among farmers. Methods efficient under one condition may be inefficient under another.

In general, the farmers who complete their chore work most efficiently watch all the details. The total savings in time are an accumulation of a large number of small savings. The factors that account for the differences in chore time can be classified in seven groups.

1. The efficient worker eliminates all unnecessary tasks.
2. The best methods or techniques are used.
3. Machines, carts, and other mechanized methods are used when possible.
4. The work is done in the most effective order.
5. The buildings are arranged for maximum convenience.
6. The efficient farmer plans ahead.
Changes in practices and arrangements of buildings may make a job unnecessary, but it may be continued through habit. Research and the experience of farmers are constantly revealing new methods. The new fast milking methods reduce the time needed for milking by machines. The saving of time and effort is greatest when these mechanical appliances are adapted to conditions on the farm. Labor records kept by farmers show that milking machines have saved from 25 to 40 hours per cow per year.

One farmer substituted a home made feed box with a shoulder strap in place of a 6 - peck basket for feeding his cows. He also made a hand scoop in place of the gallon pail that he had used. He can now feed without stooping to dip the feed out of the basket. The change saved some time but the farmer stresses the fact that the job was made easier.*

It would seem from this example that the important thing to gain is the emphasis placed on making the job easier.

In addition to that, we have seen the emphasis placed upon Waste Elimination by the Hood Company. It isn't a monopoly with them however. All industry and farm and enterprise are interested in eliminating all forms of waste. - waste of time, waste of method, waste of motion, and waste of product. In the Hood Company, the importance of the program was emphasized in that it was directed by the Junior Board of Executives. On the farm, it is directed by the farmer himself for who else is there to undertake any such activity. Farmers are becoming

* 28, P.71
more interested today in finding time saving methods. The hired man is no longer available and the migration of young farm people to the urban centers is increasing. In addition to being forced to search for more effective and efficient ways to do the farm labors, the advent of electricity has introduced new marvels to the farm—things which he never dreamed of possessing—and these the farmer seeks to enjoy. This can only be done by creating leisure time.

Information appearing in University of Minnesota Bulletins suggest ways in which Nicollet Dairy farmers are going about establishing the most effective use of their time. Based on the results shown in these reports, it would seem to indicate that these farmers could take the time to analyze their chore time. Work Simplification is nothing more than establishing the facts in a situation and asking the familiar questions—Why?, Where?, When?, What?, and How?

"The experience of a Nicollet county dairy farmer illustrates the savings in chore time and travel that could be made on many farms. The time he spent on dairy chores was reduced from 3 hours 39 minutes per day to 2 hours 45 minutes, without increasing his speed and without decreasing the quality of his work. This farmer was already more efficient than the average of his neighbors in doing his dairy chore work. Time and travel for each part of the dairy chore are presented in the accompanying table.

This saving was the result of systematic study and planning of the work. Details and time of the original chore work were recorded,
and these records were carefully studied to determine opportunities to

1. Eliminate unnecessary tasks,
2. Use new or better methods,
3. Combine tasks,
4. Rearrange the order in which jobs are to be done,
5. Use equipment suitable for the job, or
6. Rearrange the barn and other working areas.

Chore work shown in the table includes only those jobs which were performed regularly everyday, time and travel for both dates are for caring for 13 cows, 1 bull, 2 two year old heifers, 4 yearling heifers and 7 calves.

Saving in time on this farm, adjusting for seasonal variations in work, is almost 300 hours per year or one month of work. Travel was reduced by 138 miles per year or 37 percent. This saving is the total of a large number of small savings, many of only a few seconds a day. By themselves, some of these savings seem too small to be worthy of serious consideration but when added to a large number of similar savings, they accumulate to a substantial total.

The changes that effected the largest savings were:

1. Fast milking methods were adopted, eliminating hand stripping and other operations for most cows.
2. Whole milk instead of cream was sold, eliminating separating and washing of the separator. Availability of a profitable market for whole milk was the primary factor responsible for this change.
3. A slightly longer period of whole feeding and the use of calf meals were substituted for skim milk feeding for calves.

4. A homemade cart was substituted for a basket for feeding silage.

5. A homemade cart was substituted for two pails for feeding grain and supplement.

6. Drinking cups were installed, reducing the number of times the cattle were turned out. *

* 30, P.3
Table X

Time and Travel per day for Dairy Chores

<table>
<thead>
<tr>
<th>Date</th>
<th>March 31, 1944</th>
<th>March 7, 1945</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation</td>
<td>minutes</td>
<td>feet</td>
</tr>
<tr>
<td>Assemble milkers and separator</td>
<td>5.6</td>
<td></td>
</tr>
<tr>
<td>Milk cows</td>
<td>95.5</td>
<td>1,618</td>
</tr>
<tr>
<td>Separate, care for milk, wash milk utensils</td>
<td>22.4</td>
<td></td>
</tr>
<tr>
<td>Feed milk to calves</td>
<td>9.0</td>
<td>260</td>
</tr>
<tr>
<td>Feed hay to cows and heifers</td>
<td>15.2</td>
<td>536</td>
</tr>
<tr>
<td>Feed grain and supplement to cows and heifers</td>
<td>15.2</td>
<td>1,344</td>
</tr>
<tr>
<td>Feed silage to cows and heifers</td>
<td>24.6</td>
<td>1,374</td>
</tr>
<tr>
<td>Feed grain and meal to calves</td>
<td>2.2</td>
<td>160</td>
</tr>
<tr>
<td>Let cows and bull in and out</td>
<td>6.8</td>
<td>662</td>
</tr>
<tr>
<td>Let heifers in and out</td>
<td>1.5</td>
<td>169</td>
</tr>
<tr>
<td>Clean barn</td>
<td>16.4</td>
<td>813</td>
</tr>
<tr>
<td>Spread bedding</td>
<td>4.7</td>
<td>259</td>
</tr>
<tr>
<td>Total per day</td>
<td>219.1</td>
<td>7,395</td>
</tr>
<tr>
<td>Total per year</td>
<td>1,116</td>
<td>376</td>
</tr>
</tbody>
</table>

The following is a study made and reported by the University of Minnesota showing just what time is spent in the fields and how it is spent. The question immediately raised is - can non productive time

* 30, P.3
be eliminated, reduced, or converted into something that permits the farmer to know just what he is doing with his time and the places where improvement can be made.

"Records for a few Nicollet County farmers show how their time in the fields is spent. There are many jobs in the field that do not contribute to accomplishing the work to be done. Careful planning may make it possible to eliminate or shorten some of the field work.

The jobs performed in connection with four field operations, the time required for each, are shown in the following table. These are data for individual farms, not averages of groups of farms. Although there are wide differences among farmers in the time spent at these various jobs, these cases are quite typical.

As an average of these four observations, only two-thirds of the time was spent in effective work. Comparable results were obtained for other operations and other farmers.

Turning required considerable time for plowing and cultivating corn. In both of these operations the implements were run empty at the end of the furrows or rows. Less time was spent in turning for cutting grain and mowing hay, because cutting was done on all four sides of the fields.

The time required for travel to and from the fields varied with the distance traveled and the speed of travel. Tractors generally run at higher speed than horses."
In some cases considerable time was lost in repairing old machines kept in poor repair. Considerably more servicing time was spent on the more complicated machines such as the grain binder, than on simple machines such as the plow or corn cultivator."
Table XI

<table>
<thead>
<tr>
<th>Table of Operations and Time in Field Work</th>
<th>Minutes</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Plow with Tractor</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.4 acres in a 12.3 acre field</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plow</td>
<td>131</td>
<td>65</td>
</tr>
<tr>
<td>Turn (end of furrow)</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td>Clean Mold board</td>
<td>14</td>
<td>7</td>
</tr>
<tr>
<td>Delays due to wet spots</td>
<td>18</td>
<td>9</td>
</tr>
<tr>
<td>Pull put stone</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Talk to boss</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>To and from field</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Service Tractor and plow</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>202</td>
<td>100</td>
</tr>
<tr>
<td><strong>Cultivate Corn with Tractor</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All of 9.9 acre field</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cultivate</td>
<td>226</td>
<td>82</td>
</tr>
<tr>
<td>Turn</td>
<td>20</td>
<td>7</td>
</tr>
<tr>
<td>Uncover Corn</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>To and From Field</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Service tractor cultivator</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>15</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>276</td>
<td>100</td>
</tr>
<tr>
<td><strong>Cut Barley with Tractor</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All of 9.5 acre fields</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cut</td>
<td>151</td>
<td>52</td>
</tr>
<tr>
<td>Turn</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Travel empty</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>Throw bundles from each swath</td>
<td>46</td>
<td>16</td>
</tr>
<tr>
<td>To and From Field</td>
<td>18</td>
<td>6</td>
</tr>
<tr>
<td>Service binder and tractor</td>
<td>42</td>
<td>15</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>14</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>288</td>
<td>100</td>
</tr>
<tr>
<td><strong>Mow Hay with Horses</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All of 11.4 acre fields</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mow</td>
<td>448</td>
<td>68</td>
</tr>
<tr>
<td>Turn</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>Travel empty</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>Rest Horses</td>
<td>63</td>
<td>9</td>
</tr>
<tr>
<td>To and from field</td>
<td>20</td>
<td>3</td>
</tr>
<tr>
<td>Service Mower and make repairs in field</td>
<td>73</td>
<td>11</td>
</tr>
<tr>
<td>Harness and unharness horses,</td>
<td>34</td>
<td>50</td>
</tr>
<tr>
<td>hitch and unhitch</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>864</td>
<td>100</td>
</tr>
</tbody>
</table>

* 27
In the Dairy Industry as in others, success is determined in large measure by the sole factor of whether one is making a profit or not. The profit result is determined to a large extent by the number of minutes spent each day in doing the many tasks that have to be done in the enterprise. In a recent study made by the State College of Washington, it was found that some dairymen spent twice as many minutes per cow for milking, cleaning, and feeding as do others. In Clallam County, for example, one dairyman spent 13 minutes per cow while another spent 31 minutes. The size of the herd is closely associated with efficiency and that had a small bearing upon the time element in this case. However, there were other factors. A small saving of ten minutes per day in time required to perform the daily chores adds up to sixty hours in a year. Robert M. Carter of the Vermont Agricultural Experiment Station suggests to farmers in his program that they ask themselves these questions:

1. Do I need to feed silage twice a week?
2. Can I afford to store grain in an out building rather than right in the barn?
3. Should I feed hay before or after milking?
4. Can I use my time best by feeding the ensilage or should the hired man do this?
5. What is the proper way to open a grain bag? What new tools would help me in my work? Should I re-arrange my stable?

The answers to these questions should go a long way in saving work in feeding herds. Returning to the Washington State Report, it is interesting to note their findings.
"There are many other differences which account for longer time to do a particular job. Some are:

1. Number of units. The milker of the larger herds used two double units or a total of four sets of cups. The milker of the small herd used only one single unit.

2. All of the cows in the small herd were hand stripped, only those that would not adjust to no stripping were stripped in the large herd. With complete elimination of hand stripping, the dairyman with the large herd will spend increasingly less time.

3. The last important difference is the method of feeding grain. The grain was measured out to the large herd with a convenient scoop from a feed cart pushed along in front of the cows. Grain for the other herd was weighed from a grain bin and a trip from the bin was made to each cow.

The barn for the larger herd was hosed twice daily, while the small barn was cleaned and limed. Cows in the big barn were hosed off twice a day but because of no mud, cows in small herd did not need hosing. Both herds were turned out each day and each night, and both dairymen practiced a "quick-milking" procedure. The bacteria count for the small herd was very low, but for both herds it was satisfactory - less than 10,000 and usually less than 2,000.

What is systematic planning? First, a large number of cows in the herds usually reduces labor hours per cow. But records show much
difference in chore time of the same size herds. In some cases one of the important reasons for these differences is the number of workers around the barn. The amount of idle time usually increased as the number of workers increased. Most efficient dairy farms are those where each worker knows what he is going to do next, and the work is evenly distributed so one worker does not wait for another one to complete a job.

The number of milking machine units may also determine the length of time required to do a milking. For example, one dairyman had his cows numbered from one to sixty, when his operations were first observed he used four milking machine units. He washed the first four cows udders and the first units went on cow number one, the second cow number two, the third cow number three, and the fourth on four. Then the dairymen washed cow number five took the machine off number one poured the milk out, and put the machine on cow number five. This same procedure was followed throughout the milking - off two and six, off twenty two and on twenty three etc. It took about one and one half minutes from the time the machine was on cow number twenty two, until the next machine was on twenty three, by this system the machine was left on a cow for about six minutes. Later this dairyman tried using only three milking machine units and following the same system, but with three units the machine was on each cow only four instead of six minutes. It was found the cows gave down their milk in four instead of six minutes and the milking operation was more efficient.
It was also found the three units are the most one man can use efficiently and wash the udders and take care of the milk. A further check showed by using three machines instead of four, milking time was actually less because the units were on the cows four instead of six minutes. The milker has no idle time, and injury to the cows udders was less likely since the extra two minutes the machines were on the cows was not necessary. Stripping time was unchanged.

"It may be the weather, but our milk production increased since we changed to three units," the dairymen reported.

This survey showed adding additional milking units does not always increase efficiency. Some dairymen use only one unit and believe it is an advantage because they can give more individual care to the animals in milking. There is no evidence however, that such extreme care responds in a significant increase in production or decrease in udder complications.

Another important reason for variations in many hours required per cow is the type of barn used, no general recommendations can be made, however, because the type of barn will vary with changes in climate, studies do show though that if bedding is available, bedding sheds in which cows run loose during the night have proved successful, and are quite generally used in the Yakima and Kittitas valleys. Some are also used in Western Washington. Some of the most satisfactory loafing sheds were found in Yakima and Kittitas countries. These sheds were open to the south, hay was fed in sheltered racks, but were not necessarily an
integral part of the loafing shed. Each day the chore man picked up the most recent droppings and tossed them in piles in front of the shed to be hauled out when convenient. Clear straw was added as necessary. In the spring they loaded the manure from these sheds which probably accumulated two or three feet. They were able to use a manure loader since these sheds were open to the south. This is one kind of operation that saved time. At a dairy near Yakima, two brothers milked and handled ninety cows and a total of one hundred and thirty five animals. *

The very questions, mentioned earlier, presented by R.M. Carter, were put to very effective use in a study carried on by him in 1942 through the Vermont Agricultural Experiment Station. The study entitled "Labor Saving Through Farm Job Analysis" deals with dairy barn chores. Although it was a program in which the dairy industry as such, other than its representative, a Mr. Leonard Clark, farmer of Fletcher, Vermont, did not actively participate, the results of the program have been helpful in that they have shown the way. The farm is just as important in the dairy industry as the manufacturing plant.

In this particular study, a detailed record was made of the time taken, the distance walked, and the routes traveled by Mr. Clark in doing the barn chores for his twenty-two cow dairy.

After a careful study of the problem, a series of changes, designed to make the work easier and to save time, were made. These changes were of four general types:

* 32
1. Rearrangement of the stable.
2. Improvement of work routines.
3. Provision of adequate and suitable equipment.
4. Convenient location of tools and supplies.

As a result, the time spent on chores was reduced from five hours forty-four minutes, to three hours thirty nine minutes daily, and the travel time was reduced from three and one fourth to one and one fourth miles daily. Two hours a day is equivalent to a saving of more than sixty 12 hour days in a year; while two miles daily amounts to 730 miles in a year. An important point bears emphasis at this point. One need not wait before attempting to make improvements in a job merely because we can't accomplish a million dollar saving. An accumulation of two hours each day can very easily bring the same result over a period of time.

The money cost of the changes made was small. What Mr. Clark did could be done by any dairy farmer who will undertake the job of finding out what he does and how he does it and question the necessity of his action. Many of the ideas worked out on his farm could be applied in many other locations. In other cases, some modification would be necessary.

"The principal changes in the barn were:

1. Placing the cows in two nearly equal rows instead of in a long and short row;
2. Opening a cross alley at the north end of the stanchion line,
so that it was possible to pass completely around the cows in
the performance of a given chore job;

3. Cutting a new hole in the east wall of the barn;

4. Moving the horses from the west side of the barn to the northeas
corner, near the new exit door;

5. Removing the partition from around the sawdust bun and silage
chute.

The principal items of new equipment were a grain cart, silage
cart, specially designed wheelbarrows, teat cup rack, and rinse pail
carrier. Changes were also made in small tools, as the grain scoop,
silage fork, floor brush, shovel, and hoes.

The main changes in routines were the inauguration of a four
minute machine interval and the development of quick stripping habits in
cows and milker. Many small changes designed to hold unproductive travel
and work to a minimum, were made in the order of operations and jobs.

The matter of good work routines and that of positioning of
equipment and supplies are closely related. Two work centers were
established, one for general chores and the other for milking."

* :25, P.62
Table XII

Daily Time and Travel During Chores

<table>
<thead>
<tr>
<th></th>
<th>June 29, 1942</th>
<th>Oct. 21, 1942</th>
<th>Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Time min.</td>
<td>Travel feet</td>
<td>Time min.</td>
</tr>
<tr>
<td>Milking jobs</td>
<td>195</td>
<td>5699</td>
<td>118</td>
</tr>
<tr>
<td>Care of Milk Utensils</td>
<td>42</td>
<td>2362</td>
<td>23</td>
</tr>
<tr>
<td>Graining Cows</td>
<td>6</td>
<td>771</td>
<td>6</td>
</tr>
<tr>
<td>Feeding silage</td>
<td>26</td>
<td>2070</td>
<td>15</td>
</tr>
<tr>
<td>Feeding horses and</td>
<td>12</td>
<td>1112</td>
<td>7</td>
</tr>
<tr>
<td>cleaning stable</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tying and releasing cows</td>
<td>9</td>
<td>982</td>
<td>9</td>
</tr>
<tr>
<td>Spraying Cows</td>
<td>3</td>
<td>457</td>
<td>3</td>
</tr>
<tr>
<td>Cleaning alleys and walks</td>
<td>14</td>
<td>888</td>
<td>11</td>
</tr>
<tr>
<td>Cleaning Cow stable</td>
<td>19</td>
<td>1180</td>
<td>15</td>
</tr>
<tr>
<td>Spreading lime and sawdust</td>
<td></td>
<td>1670</td>
<td>12</td>
</tr>
<tr>
<td>Total</td>
<td>344</td>
<td>17200</td>
<td>219</td>
</tr>
</tbody>
</table>

Note:

The above table summarizes the savings in time and travel.
Another study closely related to this problem was conducted and published by Sheldon W. Williams of the Vermont Agricultural Experiment Station. It deals with labor usage in milking and very pointedly refers to the study of Mr. Carter.

"This study of milking machine operation on 79 farms shows that the length of time the machines are on the cows and the amount of stripping done very widely from farm to farm, and that averaged for both are higher than good milking practice would dictate. Among the herds visited the machine time averaged 6.5 minutes per cow; the stripping time, 1.6 minutes; and the weight of stripping 1.2 pounds."

"The length of time the machines were left on apparently did not affect the duration of stripping or the weight of the strippings, furthermore, neither the make or the age of the machine nor the average milk production per cow was appreciably related to either the speed or the completeness of the machine milking. Men who operated three or more single units, or their equivalent in double units, and did their own stripping and caring for milk, left the machines on longer, but less, than those handling two or fewer units per man."

There was wide variation among farms in time spent and in the distance walked in performing each of the separate jobs involved in milking. Among 14 herds milked by machine, total milking time ranged from 3.0 to 8.1 minutes, and walking from 78 to 209 feet, per cow. There was similar variation among hand-milked herds.
"These differences in labor requirements seem due to the main differences in the practices which individuals regard as necessary parts of their milking procedure, in building arrangement, in equipment, and in the care with which the work is planned. On the basis of experience on one Vermont farm, where changes in method, barn arrangement, and equipment were made and their effect on time and travel observed, it appeared that proper attention to these points makes possible important savings of labor." *

A summary drawn up in a study made by Purdue University points up the previous text. The following conclusions deal primarily with the farm; however, they can be applied in the processing plant. In view of what has been said, it is interesting to note the first one. They follow:

1. Plan work carefully well in advance.
2. Put off non-essential jobs.
3. Work done on time saves labor in the end.
4. Keep and post lists of jobs to be done in good and bad weather.
5. Shorten trips to field as much as possible.
6. High rates of crop and livestock production makes labor go further.
7. Make full use of machinery. Double up operation.
8. Large enterprises are more economical in the use of labor.
9. Adjust livestock enterprises to avoid labor peaks.

* 31
10. Use labor saving devises for feeding and caring for livestock.

11. Pool hauling to save time and cost.

12. Plan work so that inexperienced help can be used to save the time of experienced workers. *

On the surface these seem to be nothing more than the common sense thing to do. And they are. If you recall, Work Simplification was defined as the "organized application of Common Sense to find easier and better ways of doing work." So we see, it can be applied equally as well on the farm as well as in processing plant in the dairy industry. It's progress is slow however.
Chapter VI

Two other leading concerns of the country have gotten into the field of work simplification. However, all reports indicate that their programs have not been as effective or as thorough as the Hood Company program. During the early 1940's, the executives at the Abbott Dairies of Philadelphia were introduced to the idea of Work Simplification by members of the Hood organization. However, they did not accept the program and it was not until late 1947 that the idea was revived. At this time Mr. Bill Reichert, a methods engineer, was sent to Boston to survey the Hood program. He took part in the basic course. Upon his return from Hoods, it was decided to send him to Lake Placid for one of Mogensen's conferences. This was done in late 1947. As we shall see later, it appears to have been an ill-advised selection — both as to time and individual. Time was important in this case because top management had not been fully convinced of the value of work simplification nor was there any member of the senior group of executives available to act as a sponsor for work simplification in the company. It is very important in any undertaking that, before starting, you insure wholehearted support and sincere appreciation for and of the project by top management. This necessary enthusiasm and support and interest in work simplification was not present at Abbotts. In the second place, the man selected to initiate the program possessed an engineering background. In this case, it proved to be a hindrance.
Despite the training received at Lake Placid, the "expert" atmosphere could not be dissolved. It was not long before the staff department was receiving assignments "to expert" a solution to a particular problem.

The program began at Abbotts with all members of top management and supervision being exposed to the basic notes of the Mogensen pattern. Within a short period of time, all key people had been exposed to the principles of work simplification and sent back to their locations. Nothing further was planned to follow up this initial training nor has any been accomplished to date. There is no continuous refresher to rekindle interest in work simplification on the part of supervision.

At the present time, the Abbott people have seen fit to limit actual training and follow-through of those individuals trained previously. By so doing, they are attempting to use the engineering talents of the work simplification staff people by assigning projects. Although the program began and received initial support from the Ice Cream Division, the Milk Division has shown an increased interest. The Milk Division is now exerting pressure on the work simplification staff men in an effort to use them in solving their particular problems. There are at the present time, thirteen projects under consideration for the Milk Division alone. The difficulty experienced here is the "expert" approach.

Time may change the emphasis. The immediate plan of the Work
Simplification Division is to establish their own Physical location in the plant. One having obtained such a location, the director desires to begin immediately creating a film library. In addition, a program has been submitted to management whereby all those who have received basic training would be sent back, once each year, to attend an annual refresher. Having discarded, for the moment at least, the presentation of their basic course program, the emphasis is upon projects selected by the separate departments. This has resulted in immediate attention being given to the thirteen projects for the Milk Division. The emphasis seems to be primarily on cost, whereas, in most cases of work simplification if the work is made easier for the operator, operator efficiency rises - thus lowering costs.

An excellent example of what can be done in the way of reducing manpower and equipment overhead is illustrated in the following excerpt from the Electrical Review. I am not familiar with the dairy in question nor do I know whether or not they have a program of work simplification. However, the example illustrates one way that men down on the farm or men at the city processing plant could handle a similar problem, if they could justify the equipment expense. It is not necessary to go to the most expenditure and innovations very often achieve the same results. Having noted in an earlier chapter the average milking time suggested by R.M. Carter as a result of his study of chore time, it is interesting to note the average milking time in this mechanized example.

* 34
The improved method permitted, and installed because volume 218 cows — and justified its installation, — resulted in an average time of 42 seconds per cow. The suggested time of Mr. Carter was 3 minutes per cow. In both cases, machine milking was used. The saving, despite the addition of two extra men, is great.

"A cow milking conveyor system that substantially reduces manpower and equipment required to handle a large herd has been used for more than a year at the Hiett Crystal Dairy, Delance, California. By eliminating carrying of the containers back and forth, and time lost in moving cows in and out of stalls the system has speeded up production. Four men, — a yard man, washer, and one at each end of the line — milk 218 cows in 2½ hours. This is an average of 42 seconds per cow.

The system uses an endless conveyor to move the cows and 12 trolley — suspended milkers to do the milking. Power for the conveyor which moves the milking machines along with it is furnished by a 5 h/p-gear reduced motor.

As the cows enter the conveyor, they are washed and the milking machines attached and started. After an unhurried trip down the line, during which they can feed from a small trough before them, the cows are released by a gate that opens automatically as the milking machine is removed.

Milk is emptied automatically from the container and piped to the milk room. The milking machine returns to the end of the line and is ready to go again."

* * 16, P.112
A mechanized milking operation can be seen in the Boston area. At the Walker-Gordon Farms, located at Charles River Village, Massachusetts, a Walker-Gordon invention, which was featured at the New York World's Fair, rotates the cows thru every step of a scientific milking operation. Over twelve hundred milkings a day take place on the Walker-Gordon Rotolactor.

The herd, of over 400 cows, leave their barns three times daily and walk thru enclosed runways to the Rotolactor. It requires seven hours to milk the entire herd, leaving one hour available after each milking for washing and sterilizing the equipment. It requires ten minutes for a cow to be milked on the Rotolactor. However, with ten stations, a cow leaves the machine at the rate of one a minute. The ten minutes required here may seem to be out of line with the three or four minutes noted previously in Mr. Carter's study. However, hand stripping is not required either before or after the milking tubes are attached. By milking three times a day, the Walker-Gordon people found their yield to be 15% greater.

As the Rotolactor revolves, the sterilized automatic milking tubes are attached, the milk is taken from the cow, and thru these tubes drawn into sealed glass containers. From these containers, each cow's milk is automatically weighed and then goes into storage tanks. The entire operation requires but five men - one in the barn, one in the wash rack where each cow must be washed and dried before entering the Rotolactor, and three in the Rotolactor Room. This arrangement
provides for maximum utilization of men, time, and cows.

A subject under consideration by the Hood Company is the use of pallets to handle unit loads. The use of pallets has been given the green light in one plant to handle some stock items which lend themselves to such a method of handling. The question has arisen as to the advisability of pallets in the transportation of finished product in both the Milk and the Ice Cream Divisions. This would also mean that the finished product would be stored on pallets following processing. It is a revolutionary idea, particularly for Ice Cream people who are accustomed to storing the finished product in individual bins. A study should be made to determine the feasibility of such a practice. It has been proven, that with the use of pallets and electric fork lift trucks for handling loads, marked savings in time and energy can be realized.

"This has been demonstrated at Whiting Milk, a large Boston milk processor. Experience over nearly 2 years shows economies of 75 percent in time and men required to load trailers at the bottling plant, and a similar saving is made at the distributing centers.

Securing cases to pallets to prevent shifting or sideslips was overcome by engineers when they devised special cleats. Fastened to the middle piece of a 3-stringer single-faced pallet, they engage the underside of the milk cases.

In addition, a special clamp was developed to prevent the 5-layer piles of filled or empty cases from toppling. This clamp fastens together the case forming the top layer of the unit load.
Pallets have been standardized. This permits loading distribution trailers with pallets two abreast eight deep. Cases of square bottles are loaded six to a layer, while cases of round are placed four to a layer. Average weight of a unit load of thirty cases of filled square bottles is about 1500 pounds.

At the bottling plant, cases of filled bottles are conveyed from the filling room to the loading platform, where they are placed on pallets. Care is exercised to arrange the bottom layer of each load so that the cases engage the special cleats on the middle stringer of each pallet. When fully loaded, the top layer of cases is fitted with the holding clamp.

By using fork-lift trucks and pallets, a trailer can be loaded in 15 minutes, whereas when hand trucks were used, approximately 1 hour and two or three men were required.

In addition to the noticeable savings in time and labor electric fork-lift pallet handling of milk in cases is reported to have brought these extra advantages; It decreases bottle breakage and loss of products, it reduces traffic congestion on the loading dock, and it conserves space for storage and other essential uses." *

It is important to note that in all cases where the job has been simplified, the job has been made easier. Yes it is obvious that management profits from an improvement which increases productivity, reduces breakage, reduces loss of product, improves good housekeeping.

* 20, P.1786
However, we have seen in an earlier chapter how the employees profits from these very same things.

Another company which made an attempt to enter the work simplification field was the Bowman Dairy Company of Chicago, Illinois. It was not until 1947, however. At that time, they sent Mr. Ray Baer to attend the Lake Placid Conference. It was his first exposure to work simplification. A few months later, Mr. Baer gave the program to the department heads, supervisors, and managers. In furtherance of the program it was decided to send another representative to Lake Placid. Mr. Hopper was sent in 1949. However, by this time Mr. Baer had gotten into Labor Relations as a primary responsibility by this time.

The program, basic course, was presented to assistant managers and foremen upon the return from Lake Placid of Mr. Hopper. Shortly thereafter, Mr. Hopper, was needed for placing in a plant manager vacancy which occurred. This left the company with no one qualified to direct a program.

As a result they have given the training to a large segment of their supervisory personnel only but have not tied it into a direct continuing program as such. It is the feeling of Mr. Baer that the benefits of what has been done have been excellent.

At the moment the company is engaged in a program of effecting a Standard Cost System. There seems to be a desire on the part of management to integrate into it a Work Simplification Program.
Another program under consideration consists of setting up Plant Research teams at the "grass roots" level whose objective is "to find easier and better ways of doing work."
Chapter VII

The first step in any program of work simplification is to get the factory or work place in order. What is meant by order in this case? Order can be defined as the arrangement of time, energy, and materials so that work can be done. This definition fits in very easily with the definition of work simplification - that is, organized application of common sense to find easier and better ways of doing work. However, for any individual to be effective in the use of any of the many management tools, does not the individual have to have some arrangement of his time, energy, and material? The degree of effectiveness of the individual, as a result, can easily be measured by the quality of effort placed in this arrangement of time, we speak of. Certainly, disorder can only lead to waste and the misuse of time, energy, and material.

It has been said that the first law of good work is to be clean, and orderly. Do you agree with this conclusion? It would be very difficult for you not to, for it is very easy for you to think of the things done well and of the things done poorly. It is for this reason that the Hood Company of Boston, Massachusetts conduct Good Housekeeping Contests among their many plants. Each plant having the same characteristics, size, product, - are scored periodically. At the end of the contest period - every six months - the high scorer in each group receives a suitable award.
In the Good Housekeeping program of any plant, cleanliness goes hand in hand with orderliness. They are not the same as you may recognize. Cleanliness is a personal characteristic, whereas, orderliness is a managerial trait. It can be taken for granted that if you are orderly you are also clean, however, it cannot be admitted that the reverse will hold true.

Let us use a stockroom - any stockroom - as an example. We could send a janitor to the stockroom to clean it up, however he could not put it in order for he has no knowledge of the stockroom and anything misplaced would remain misplaced. Only the stockroom people could make order out of their own stock area. It is the same with a production room floor, a sales office, or superintendent's desk. It can be said that you have order when and only when there is a place for everything, and everything is in it's place.

We are all familiar with the popular saying relating to the attic. Something should not be saved for the sake of saving material. If we use a production area as an attic, the production area will cease to function as a production area. The inevitable result will show in costs. Another way of saying the same thing, if you save enough material to cause disorder, it will result in increased costs. All three factors - time, energy, and material - are important and go hand in hand. Order means that there are no unnecessary things about. If this is true, what keeps a place dirty? In the first place, the standard for cleanliness may be so low that we don't even see the dirt. However, if you see it
and don't clean it up, the only answer to be given is that you are too lazy to clean it up or that you don't care - are unconcerned. The two things which make this dirt or lack of order we speak of are ignorance and carelessness. If we don't know how to do a job, the inevitable result is lack of order. If however, we know how to do it yet still make a mess, carelessness is the only possible reason for a disorderly work station.

The late Henry Ford said that the first thing that he would do if called upon to take charge of a business that had failed would be to clean the business up. It was his contention that no business ever failed without, as he put it, "first accumulating a vast pile of dirt. The dirt and all that goes with it, untidy thinking and methods, helped to cause that failure."

We must:

1. Observe
2. Think
3. Decide
4. Act

to keep our places clean and orderly. By so doing, the individual becomes a much more effective element of the business.

Another simple device, but one too often ignored, for increasing our effectiveness is one of planning - personal planning. We can be too busy to be effective. But how busy are we? Are we running the job or is the job running us? We can again go back to orderliness and pick out the elements of time. We must have order to our time for time can
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be and usually is a major factor of waste. Everyone is faced with the problem of utilizing his time to the best advantage. Hurry is probably the greatest time killer today. Work simplification, as has been brought out earlier, is not a speed program, but rather, it is one of eliminating the unnecessary. By eliminating the unnecessary - waste, useless motions, incorrect use of time, - our effectiveness is increased and we become more productive.

The causes for lost time are:

1. Poor Planning
2. Poor Instruction
3. Poor Equipment
4. Procrastination

In planning, we should know our job. Know whether or not there is some activity-operation that either could or should be done by some other person. If the nature of some job is such that it could better be done by someone else, instruct the person in it and see that they do it. Our job should be analyzed in that light. Justify the need for what we are doing and eliminate the unnecessary parts of the job. Then sit down each day for a few minutes and layout a plan for the next day's work. It may not be possible to plan a complete day. If not plan - schedule - the part of the day that can be planned. What does it do? It provides a guide for more effective action.

It eliminates or reduces to a minimum the lost time or unnecessary labor. It insures that the must part of your job is provided for
within the span of time. As a result, you now have time – you have made the time – to do the job.

The next cause of loss of time is poor instruction. Any worker who is left to his own devices will attempt to find a way to do the job. However, the immediate and continuous result will be wasted motions and waste of time. Each worker should be thoroughly instructed before he starts any job. It has been said that if the worker has not learned, the instructor has not taught. For that reason, an accepted guide to follow is the Job Instruction Training developed during the last war.

The four steps listed in Job Instruction Training are:

1. Prepare the worker
2. Present the operation
3. Try out performance
4. Follow up

The importance of each step cannot be minimized. Each has its own place in the instruction process. Performance is the sole judge but it goes without saying that every individual is a more effective worker if he has been instructed properly. Having been instructed properly and knowing just what is expected of him, the worker, in most cases, has the desire to do a good job.

Of course, if management does not provide the tools and equipment of proper quality, and quantity, planning, and know-how become unimportant. The individual is prevented by management from functioning effectively. In the dairy industry shutdowns of continuously operating
processes represent a great expense. Breakdown prevention offers wide fields for cost saving. However, it should be a part of management to know what the "down time" actually is of its machines and equipment.

The last element contributing to time lost was procrastination. Isn't it a major factor a good many times? How often do we say to ourselves, "I'll do it tomorrow." If we put it off until tomorrow what we should do today, we haven't eased our burden. What merely happens is that we fill in the day with unnecessary actions and littered thinking which only tends to confuse us. We have merely added to the load which must be accomplished on the next day. This along with careless ways of the previous day can only result in a hurried job with the inevitable waste. The real answer to procrastination is to do today's work, today.

One of the important elements of work simplification which is so often forgotten is a program of follow thru. If we are going to make our people more effective, more productive, and we adopt the patterns of a work simplification program, we must have follow thru. One of the most effective tools for insuring a follow-thru is job standardization. There doesn't seem to be any reason for simplifying a job if the people revert to their old methods because of an established habit pattern. In addition we have the old problem of resistance to change. We must recognize the inevitable problem that all of our people are not concerned with being more effective, or more productive. Many are content to let management do their thinking for them when it comes to job performance.

Work simplification as it is practiced at the Hood Company attempts to overcome this attitude by holding participation meetings and
developing the simplified methods with their help. However, because human nature is what it is, and we all have our own failings, supervision must insure that the accepted method is standardized and accepted, supervision should see that the one best way is used.

From "Production Engineering", by Earle Buckingham, is found this definition: "Standardization is the establishing by authority, custom, or general consent, of a rule or model to be followed. In its broadest sense, it applies not only to such matters as weights and measures and material objects, but it permeates most fields of human activity. Folk ways, taboos, moral codes, ceremonies, educational procedure, social and business customs, industrial practices, even languages, are all forms of standardization. The main use of the term standardization is, however, in connection with technology, industry, and business, their products and processes."

"Every industrial plant is carrying on standardization of its products, and processes, and its competitive success depends largely upon how well it has studies and solved these problems. Standardization within the plant has been the essential factor in the development of mass production - which is the most important contribution which this country has made to the development of industry."

In all too many instances, the job has not been standardized after being simplified. There are too many cases in which the inefficiencies were eliminated from the job many months ago, yet because the method was
not standardized, the old method is still used. There are other cases where one operator will work out a "better" way to do the job, yet, when the job goes to a different operator, he is not instructed in this better way, and repeats the costly process of trial and error in finding the "one best way." The advantage of experience is lost, and the operator starts from scratch again.

Obviously, it would be sheer folly to set up and establish a standard method of performing a job without first applying the principles of work simplification. To do so would be to say "it can't be done." A wide-awake supervisor will not place himself in such a position. No, he is smarter than that, for he knows that American Industry has attained its present world supremacy through the application of work principles of work simplification and job standardization.

Briefly, what is to be done in arriving at the Standard Method?
The following five steps are necessary:

1. Locate the trouble.
2. Make a Breakdown of the PRESENT METHOD.
3. Analyze the Method.
4. Develop the ONE BEST WAY.
5. Record the method.

Many of the points covered will of necessity have to be done or accomplished by the individual. Others are in the field of management. Because of this and because we are in an era which requires both elements
of industry - management and their people - to be effective, it seems important that we recognize the theme of work simplification and its implied means of attaining the theme - participation in its rightful place. It should be at the top of the agenda. All of our Job Standardization, useful equipment, job instruction, and time planning can be accomplished if we establish an orderly process. If as individuals, we plan each 24 hour day in an orderly fashion, this orderly manner will be transmitted into our thinking and actions in everything we do in industry.

By having time standards and job standards, industry has been able to use them to instruct and guide the worker, to serve as a basis of payment for piece work, to aid in establishing cost of production and price, to plan and coordinate plant operations, to give management a standard against which to check output, and lastly, to permit forecasts in production.
Chapter VIII

We must recognize that the work method used is only one of the factors that determine the amount of work a properly qualified person will accomplish on a given job. Certain human factors such as skill in using a method, the effort exerted, and working conditions greatly influence the worker's rate of activity. The manual dexterity of some people may make them more productive than others in spite of the methods used. On the other hand, the attitude of a person toward his work may completely offset the advantages of a good work method. Farm work simplification directs attention to both the job and the worker. It places new and proper emphasis on the importance of the individual as a factor in production.

Helping a dairy farmer find easier and better ways to do his work is an important step in improving his business efficiency and in making for better dairy farmers worker relations. Improved methods alone will not raise farm profits or worker's earnings, unless they result in greater output per worker. For maximum value you must associate improved methods with the other factors favorable to business efficiency and good labor management.

One of the real contributions of work simplification is what it does for the individual. When a man becomes more conscious of the way in which he does his work, he begins to notice other things about his business. His interest in his job increases, his attitude toward his
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work changes, and he may find ways to improve the entire method of doing his work. These benefits from work simplification are important to the farmer and his family but are more difficult to measure than the direct savings in time, and cost.

In the broad sense, work simplification contributes to the welfare of society as a whole. The use of it helps to lower the real costs of producing dairy products on the farm. As a result society benefits through lowered costs.

Dr. S. A. Eugene, basing his opinion upon his studies of barn chore work in Minnesota, states that 15 to 25 percent of the working time on farms represent wasted effort. "We produce about 1192 million hundred weight of milk a year in the United States. Estimates place the average labor requirement per 100 pounds of milk at 2.9 hours." In the overall picture, labor requirements to handle dairy farms are tremendous. As a result, opportunities for improvement are great.

However, work — any work — should be made interesting and therefore rewarding in more than the monetary sense. One of the best ways to secure efficiency is by approaching the work force with imagination and understanding. In this vein — treating the people as human beings, we find a different approach than that of the so-called "efficiency expert." Boredom kills efficiency because a person who is bored with his job is dissatisfied with it also.

The three factors that were considered earlier:

* 7, P.20
1. Desire to solve a problem,
2. Ability to solve it, and
3. Capacity for handling the human relations involved - are just as important and apply equally well to top management as to each person in their employ. The last of these factors, however, seems to merit greatest consideration. The first can be attained through proper selection of people, the second through planned and efficient training. It would seem that the third one could be attained through a combination of selection and training. However, it is not that easy. It would seem that the lack of success at Bowman Dairy and the Abbott Dairy in presenting a work simplification program can be attributed to their failure to bring their people into the picture. Whereas the program presented by H.P. Hood and Sons met with immediate success and is continuing to experience acceptance on the part of everyone because everyone in the company has contributed to the program in some form.

The major emphasis has been placed on individual satisfaction, on making the job easier, on granting recognition for a job well done; rather than on shorter time, increased production, greater productivity. Management has certain goals and objectives it must reach. Of necessity, one of their major objectives is to produce a saleable product in the quantities desired, at the right time, in the right place, and realize a profit from the sale of their product. One of the most effective ways of doing this is to have a contented work force. Management must seek the attainment of its production objectives in ways which permit the
worker to satisfy normal human desires through work activities.

What are these human desires? People do want certain things from their work. Progress toward certain goals is a motivating force. These goals are:

1. The respect of their fellows.
2. Creative sufficiency.
3. Increasing control over their own affairs.
4. Understanding – know what the score is.

Each one of the goals listed above are emphasized in the Hood program. For it is realized that the easiest way to gain acceptance of a program by employees is to approach them along these lines. They are individual weak spots.

Actually, the primary purpose of the worker who seeks employment is to obtain sufficient monetary reward to satisfy his physical needs. And of course his employer seeks to make profit from the use of the worker's effort. However, a disregard on the part of either management or the worker of those things which contribute to the workers personal adjustment has contributed to the many work relations in which greed is rampant, and group conflicts are in daily evidence. To reach the heart of the problem of human relations in industry, employers and workers must find a basis for developing mutual respect for the desires

* 14, P.217
and needs of each other. One thing which seems to have gained attention in recent years is the realization that tasks performed are not the most important element in work experience. What transpires in the mind of the worker is likely to be of greater significance in determining the success of work simplification.

"As a human being every worker seeks a responsive social relationship with his employers and fellow employees. In this respect, the worker is favorably motivated by:

1. Leadership which he can like, respect, and admire.
2. Surroundings which promote physical well being.
3. Acceptance as a recognized member of a group.
4. Recognition as an individual, not as a servant.
5. Fair treatment in relation to others.
6. Reasonable sense of permanence.
7. Knowledge of the results of his efforts.
9. Approval for special effort or good results.
10. Respect for his religious, political, moral, and social beliefs.
11. Evidence that other workers are doing their share of total production.
12. A friendly social atmosphere in which he is considered with respect by his fellow workers and his supervisors."

* 24, P.17-24
We should deal with this problem of human relations in the same fashion we would approach any methods problem relating to our production work. It is a problem and we must find a solution. An individual is either influenced by or exerts influence upon any group he joins. Management, therefore, should determine the attitude each individual has towards his work and the company, and should then try to determine the probable effect on productivity.

There will be some grumbling, some dissatisfaction within an organization. Up to a point, this is a healthy situation, for it indicates that the people are thinking about their job. However, there is a point where this grumbling actually reaches the stage of being a grievance. If these grievances are not resolved in a satisfactory manner the inevitable result will show up in a lower work performance. It is better to settle each misunderstanding early in its growth so that it does not become a major conflict.

We have spoken of Point of View before, and it bears repeating again. In order to insure harmonious employee relations, it is necessary that management and employees understand each other's point of view. It is very easy to have misunderstanding arise from misinterpretation of facts.

One of the basic premises of work simplification - and it is meeting with great success at H.P. Hood - is the use of group participation and discussion. By so doing, it enables both parties to reach a
Mutual understanding. This technique of group discussion should be more widely used in industry today. The Work Simplification Development Group of the Hood organization is used as a vehicle for attaining skill in conference leadership. The greatest benefit comes from a well organized conference rather than a general meeting.

Needless to say, we must come down out of the clouds and plant our feet on the firm ground of reason. It is vitally necessary to consider spiritual values, to promote mutual understanding, and to adjust work conditions; however, the income provided from work must be adequate. Our whole economic system is based upon recognition of the worth of an individual and his labors. They are compensated accordingly. However, the largest field for conflict and misunderstanding is present in this area of compensation. How accurately has management made the distinction between individual employees and do they understand these differences and feel that they are just?

In total, the preservation of human dignity and the promotion of individual initiative are the cornerstones of good employee relations. Using these two factors as vehicles or medium of access, work simplification can be made to work. By its very definition, - to find easier and better ways - the individual gains immeasureably through the use of this tool of management.

An article appearing in Coronet Magazine could very well be said to summarize the previous remarks.
"Do you fight the whole world about everything? Is your personality so strong and true that no one else's amounts to a hill of beans? Is there a chip on your shoulder challenging each new person you meet? Well, stop being belligerent - there's no sense to it.

Remember: every individual is an individual. That means he had his own set of feelings, his own kind of training and education, his own peculiar habits, likes and dislikes. He is just as peculiar as you are. And no matter what you say or do, you can't always win him over to your point of view - so why not let him go his own way?

Give the other person a chance to open the conversation - let him pour out his ideas to you. Feed him a few encouraging questions, and let him do most of the talking. Listen. But don't listen with the idea of knocking him down as soon as he finishes. Listen for the purpose of sympathizing with his idea and feelings and seeing his side of the matter. You aren't the only expert in the world. If your listening is humble enough, you may find out a lot of things you never knew before.

Respectful attention, decent human interest are all it takes to open up any man. Only a handful of people love controversy, invite attack, or thrive on opposition. Most of us go into our shells to avoid a noisy, useless battle. So don't scare your friends or acquaintances with a slashing attack. Don't put them on the defensive. When you take the offensive you generally become offensive.
And don't make a specialty of scaring people like the office boy, the shipping clerk and others you may consider insignificant. They, too, can tell you something. They have many good ideas, and it is most important that they have a good idea of you." *
Work simplification has just scratched the surface in the dairy industry. Although it has a very secure foothold in one of the leading dairy concerns of the nation, other dairy concerns have not seen fit to undertake a work simplification program. Work simplification has paid off for the Hood Company. I think we can agree that the results of Mr. Carters study at the University of Vermont show that work simplification paid off for Leonard Clark and his 22-cow farm. Work simplification has served as a major instrument of industry in its continuous effort to make progress. Through its use and application, work simplification helps to eliminate waste. This we saw, in the waste elimination program established by the Junior Board of Executives of the Hood Company.

In addition, the major justification for its existence is the ability to make the job easier for our people through its use. With this in mind, the inevitable result, - human nature being what it is - is to improve the product. By bringing the people who do the job into consultation, you have gained their confidence and respect. People, having been granted recognition, are eager to insure the resulting success of their suggestions. This idea and appearance of participation has a very stimulating effect upon employee morale. Having been taken into the confidence of management with regard to some problem, gives position to the individual and grants that certain amount of
recognition that we all want and seek.

The average person dislikes laziness brought about through forced idleness. This forced idleness does not necessarily limit itself to physical laziness but also includes mental laziness. People like to be busy - especially creating something that will benefit themselves.

The inevitable result of a reduction in waste or improvement in the quality of our product, brought about through the common sense application of work simplification, is to have more satisfied customers. This in turn results in greater job security for all the people concerned. This last point is very important to the person on the job. Probably the greatest obstacle to methods improvement of a job by operators is their natural fear that they will put themselves out of a job.

One of the major goals industry should set for itself is an educational program to dispose of this fear. Although it is not an official policy of the Hood organization, they have found it practicable to follow a practice of never discharging anyone whose job was eliminated as a result of methods improvements. The knowledge of this by their employees has led to full acceptance of the work simplification program and large scale participation in the Suggestion System.

Today, as never before, there is a need for finding better ways of doing work. We must increase the productivity of our workers.
One important medium we have of accomplishing work is through human beings. Hence, some way must be found to encourage these human beings to accept this need for greater productivity. The philosophy of work simplification is a proven and accepted method for doing this.

We must bear in mind, industry is not the only place where work simplification can be applied. The greatest need of the farmer today is to know what he is doing and then for him to sit down and ask himself - Why? As was brought out in the cases cited in the text, what the farmer lacked was the specific information as to what he was doing and how he was doing it. Once he has gathered this information together, it could be analyzed with the objective of justifying each segment of the job.

Although we have given some space to these various aspects of work simplification - leadership, resistance to change, order, knowledge of facts, - none of these should be given precedence over the human factor. One of industry's greatest investments today is in the human factor. Needless to say, supervision is important. However, it seems obvious, in view of this investment, that industry devote as much time to the human factor as was devoted in the past to technological developments. A Fortune Survey indicated 30 percent of the business leaders of the country regard qualities of leadership more essential than technical skills.
WATCH THE PUT AWAY!
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V. Personal Interview
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**OBJECTIVE**

**USE REVERSE SIDE FOR COMMENTS, DIAGRAMS, ETC.**
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*Line No. 1 -- Date Received - Due Date*

*Line No. 2 -- Follow Through (actual performance)*
### Appendix B-3.

**FLOW CHART**

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**MEMBER**

 THERE IS ALWAYS A BETTER WAY
WE RESIST NEW IDEAS.

NO!!- WONT EVEN LOOK!

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