

TRAINING WORKERS FOR WAR PRODUCTION

18 January 1949

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TRAINING WORKERS FOR WAR PRODUCTION

3047

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COLONEL GREER: General Vanaman, gentlemen: Our speaker this morning is Mr. Arthur C. Croft, President of the National Foremen's Institute Inc. His subject is "Training Workers for War Production."

To Mr. Croft, this is not just a problem of recalling the wartime experience of training, although he has been through the problems of training in two World Wars. To him, it is a problem that he deals with every day. He has had thirty-six years' experience in supervisory training. His job as President of the Foremen's Institute takes him to all parts of the United States, to all industries, advising and assisting both management and labor in their problems of training methods and techniques.

It is a pleasure to welcome Mr. Croft to our lecture platform this morning. Mr. Croft.

MR. CROFT: General Vanaman, General Holman, Colonel Baish, Colonel Greer, and members of the Class: I am not going to say that I am happy to be here. As a matter of fact, judging from my conversation with some of the members of the staff, this is a very tough, sophisticated audience and I will probably have a very bad hour. But I am going to ask you to bear with me and not to become frightened by my notes. There are a number of statistics involved in this discussion that I think we should have.

I would like to present the problem from three different viewpoints: First, what is the situation, the climate, in which we will find ourselves? Secondly, what is the training load which we will have to carry? Thirdly, what methods are we going to use when we face the problem?

I have been asked to touch only briefly on the history of training programs used in World War II, mainly to evaluate their effectiveness, and to give you some idea of our situation today in comparison with that which existed at the beginning of 1940.

Past lessons are important. This is as true with respect to training as it is with respect to anything else. But past lessons are misleading if they are not evaluated in the light of the problems one faces today, or the problems one expects to face in the future.

What we can learn from our training programs in the last war depends, in part, on the view one takes of what those problems will be in the next war--if there is to be one. There is no question that things will be quite different with respect to manpower. There will be no large pool of unemployed available, as there was in early 1940. Nor will there be several years in which to train that pool of manpower.

The problems of the next war will involve the possibility of our country's being exposed to considerable damage and destruction. This is a fact we were able to leave entirely out of our calculations in the last war. No one can foresee the extent of such possible physical damage. No one is able to say how the American temperament will bear up under the impact of this novel experience. However, everyone in this room, I believe will agree with me that in the next war the demand on civilian morale and discipline will be much higher than it was in the last one.

There is another problem to consider: In the last war we had the advantage of the fact that people and resources all over the world, particularly in Europe, were on our side. It is not difficult to imagine that things will be different next time.

So far as manpower is concerned, I think we can assume that every single person in our adult population will count for much more than ever before.

If the problem of morale and discipline becomes great—which I believe it will—we have to face the need for training many people, as many as we can, in leadership qualifications. If the demands on manpower are as great as I anticipate they will be, we shall have to use that manpower in as economic and rational a way as we possibly can devise.

In connection with this problem, we can learn a great deal from the last war. Let me give you a few facts. While I do not want to bore you with too many details, I would like to mention the agencies that were used in the last war as a framework for training. They were the Office of Education, Division of Vocational Education, which had close contact with state vocational-training activities and had been working with the States under the Smith-Hughes and George-Barden Acts.

In early 1940, there were available 1,053 public trade schools, with 22,000 teachers in those trade schools, of which about 70 percent had worked in the trades which they were teaching. We had a thousand state and local supervisors of trade and industrial education.

This framework was expanded so quickly that in six months' time these trade schools were taking on 75,000 new enrollees per month as against 20,000 prior to this time. During the four succeeding years (1940 to 1944), the original number of trade schools and training centers was more than doubled. At the finish of the war we had something like 2,600 training centers and trade schools. Through this framework—that is, through the Office of Education setup—we trained 7.5 million workers. That, in a sense, was the job-training load we carried in the last war. It took about six months to develop a training pattern, to set up curricula laboratories to get under way with pre-employment training.

Now let's see what we did with those 7.5 million trainees. Twenty-four percent of them went to aircraft plants and 20 percent of them to shipbuilding plants. That was 44 percent of the total. Fifteen percent,

or 1.1 million, were women. Among the trainees there were 403,000 civilians assigned to the Army and Navy; 60,000 inspectors to Ordnance; 100,000 mechanic learners to the Air Corps.

On the supervisory side of the picture, 936,000 people—foremen, leadermen, and supervisors—were given pre-employment and conference training through this vocational setup.

I want to ask you to remember that in a training load the ratio of supervisors, leadermen, and so on the ratio should be about one to twenty. Through this vocational setup they trained 936,000 foremen. They were given pre-employment and conference training.

In 1941 it became evident that as the load of pre-employment training dropped off, we would need more on-the-job training. It became evident that we would have to have vestibule training. Many instructors were transferred from vocational schools to in-plant training. Industry expanded its training, developing training techniques, setting up training quarters, and preparing visual aids.

Out of industry there came to Government at that time a group of practical training men who set up a government department called the Training-within-Industry group which, undoubtedly, all of you know about. This staff of experts immediately set about to develop a quick package training setup. They developed three 10-hour programs, which, I presume, many of you have undertaken. They were Job Instructor Training, Job Relations Training, and Job Methods Training. They put on an aggressive drive. They used modern sales techniques, plenty of persuasion, and, in some cases, compulsion to get manufacturers to use this package on-the-job training for their supervisory working force.

They were very successful in breaking down resistance among the old-time, hard-shell manufacturers, the kind of people who used to tell me 15 years ago, "Croft, the less training I do and the less my supervisors know about the details of this job, the better I like it."

These JIT, JRT, and JMT programs were put on in Canada and in England, as well as in the United States. There were 836,000 supervisors in the United States who received this package training. Undoubtedly it duplicated a great deal of the original training done by the vocational schools and there were brought into the TWI group many men who were really not leaders in the sense that they were in the local areas.

In addition to the government activities, through the public trade schools, the Apprenticeship Section of the Department of Labor, and the TWI, there were many private training schools and organizations which trained large numbers of men in the skills and in foremanship. My own organization trained 90,000 foremen in the United States, 7,000 in Canada, and 3,000 in England. A conservative estimate is that about 750,000 foremen and other workers were trained in skills by private schools.

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Most of the people in training that I have talked with throughout the country are pretty well satisfied with the job we did during that period. I think our production record speaks for itself.

Here are some of the lessons that were learned: There was, of course, a tremendous waste of manpower through the vestibule training because of the lack of methods of screening and selection for jobs. People were not always trained according to their natural abilities. Skills were not always used to the best advantage. Some of the third shifts weren't producing enough to pay for the power used in keeping plants lighted during the night. Skills were dissipating very rapidly through poor supervision. We had problems in handling minority groups. There were racial conflicts; union pressure. In some cases it took longer to assemble and train a working force than it did to build an entirely new plant and equip it.

Now what is the problem that we face today in training a working force to meet an emergency? We know that if we had a training load of 7.5 million in the last war, that that load was largely a pre-employment load. There were 10 million unemployed, many of whom had no skills; many of whom were illiterate.

In the next emergency we face, we will probably have a fully employed working force. We have about two million ex-GI's in colleges and schools and who are receiving on-the-job training. We can estimate, I think, that we will have about 1.75 million women available for training. This is the group that would receive the pre-employment training. Let us say that the pre-employment group as a whole will consist of four million today instead of 7.5 million last time. The balance of our working force will have to come out of industry, essential and nonessential, many of whom will have to be retrained because of the new materiel of war that will be used.

How are we going to solve this problem? There are probably, out of our 60 million working force, 30 million who are going to be affected by an emergency. In all probability half of those, or 15 million, will have to undergo some sort of training. Let us say that 20 percent of those are administrative jobs, involving paper work, and do not need any training. How are we going to face that problem?

Well, I would say that we can, as before, use the Office of Education and its setup of state and local trade schools for pre-employment training. We can use some of their instructors for on-the-job training as well. Through the Office of Education we can set up the curricula laboratories where we will develop quick training techniques. We will develop visual aids, which will now be used on a larger scale than ever before.

We know now that when jobs are broken down, 65 percent of them can be learned in 30 days. That is a figure to conjure.

The Department of Labor Apprentice Training Service and state apprentice committees will contribute their share of apprentices. Right here let me say that there are now in training about 250,000 or 300,000

apprentices. About 24 percent of those apprentices are in the wood trades. What we need at this moment is at least a million apprentices because most of our journeymen in the trades are very old, 40 to 60 years old.

We have had no apprentice training for 10 to 15 years. We had no apprentice training during the depression. We had no apprentice training during the war years because men of the apprentice age were used in the Armed Services.

We need sheet-metal workers. We need instrument makers. We need model makers. We need machinists. We need electric technicians. Our colleges and universities can train the engineers, physicists, and technical experts. We may have ready by then a National Science Foundation to assist in this connection.

I ask you to remember that for every professional we are going to need about five subprofessionals. Our supervisory and management groups should have pre-employment training from a special department of the Office of Education, which will have close contact with the industrial leaders; will have some knowledge of the attitudes and problems that they will face in dealing with their workers. On-the-job training of this sort can be handled largely by private industry and by private training organizations, too.

In the next conflict, trained supervisors are going to be of tremendous importance. If we are going to have problems in morale and discipline, resulting from devastation, we need lots of leaders to cope with this situation. We need leaders who can influence attitudes, minimize worker friction, reduce grievances.

I ask you gentlemen to remember that 78 percent of a supervisor's job involves human relations and management problems. Only 22 percent of his time is spent on things pertaining to technical skill.

I think the Armed Forces have a tremendous stake in what one might call shaping the attitudes of the rank-and-file; developing safe work habits in compliance with the rules; tolerance toward women workers and minority groups. We will have to make the best possible use of all of our working force.

Let me tell you a little story about how important leadership training can be in industry. In the last war, our organization was training a group of foremen for a textile plant in Coventry, England. The program was nearly completed when the Germans just about blasted Coventry off the map. I cabled this organization at that time to know whether we should continue supplying them with additional training setups. I got a cable back saying, "Yes; by all means." In the letter that followed, they said that when that situation came about, they sent all of their supervisors out into the city to reorganize utilities and facilities. The leadership training that those men had had was a tremendous help in

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putting things in order again. They were able to reorganize community services and facilities. They were able to handle people much better, they said, in some cases, than the military was able to cope with the situation.

Now what part can industry play in the training and retraining of this working force? Prior to the last war, about 25 percent of the plants (exclusive of the needle trades) employing 250 or more people had training, educational and personnel departments. Today, more than 50 percent of these same plants are equipped with personnel staffs well versed in training. In many cases they have trained conference leaders, instructors, and teachers. Most all of them are equipped to use visual aids, such as slide films and motion pictures. More important, they have conference rooms and classrooms at their disposal. In the last war, one of the bottlenecks in training was this: We had no place to assemble people to train them. In California we used to take them out in the yard and hold classes in tents.

Further than that, these personnel and educational departments are experienced now in testing skills and aptitudes, and also in interpreting the result. They are skilled in determining working attitudes and selecting men for leadership.

So that industry today, with the aid of private training organization and part-time use of school plant and equipment, can do a great deal of its on-the-job training. In the last war, in many cases, we never used the plant facilities and equipment of our public-school system, which provided areas for on-the-job training. Induction, orientation, and all of those things could have been handled outside of the plant by the simple use of our public-school facilities. A great deal of time would have been saved. Today, I think, industry knows the value of training, the importance of selection, and the importance of placement more than ever before.

During the last war, in connection with the TWI training program, as I told you, it was necessary to use considerable persuasion, even compulsion, to get many of our contractors to put into effect TWI training programs. Many of the educational and training departments in industry now are a holdover from the last war. If we were to run into a period of recession, or depression, or whatever you choose to call it, I greatly fear that many of these training departments will go by the board.

There is still some antipathy on the part of management to completely and totally embrace this matter of training. In aircraft plants, which took 24 percent of our trainees, and shipbuilding, which took 20 percent of our trainees in the last war, there are skeleton forces of trained personnel people, with equipment, to expand very rapidly and handle their on-the-job trainees.

As I said to you earlier, prior to the last war very little, relative, has been done in training. We were unprepared. But now with a large part of the 15 billion dollar defense budget being spent for military orders

to keep industry in preparation, we are better prepared for an emergency than ever before in the history of our country.

Now what can the Armed Forces do at this time in connection with the placing of defense orders to help keep our training activities in a state of preparedness?

First, I think it can ask that procurement agencies require contractors who are fabricating war material to supply a list of skills required to fabricate a unit, along with the number of man-hours required of each skill, so that when we expand those orders we will have some idea of the load, by skills. There are many new products being manufactured—guided missiles and other things—which may now call for many new skills. We need to know what that load will be so that it can be quickly projected and the activities of our training for those skills directed in the right channels.

Another thing that can be asked is that visual aids be prepared by these contractors; visual aids which will assist in teaching these skills. These visual aids then can be lodged with the training curricula laboratories.

The contractors should also be asked to put into effect an apprentice-training program. There should be at least five apprentices for each journeyman. That is a thing that has to be handled at the local level by industry in cooperation with the unions.

Second, the Office of Education can be instrumental in seeing that trade schools do pilot work now on the training of special skills that will be needed. We should know now what some of those skills will be. A certain amount of pilot training and curriculum should be set up so that we will be prepared.

But most important is the problem of leadership training. It must go on now because considerable time is needed to develop the right sort of leadership.

To give you some idea of the trend along that line, I should tell you that during the war years we, who are the largest private training organization for supervisors, trained about 30,000 supervisors and foremen a year. Those were not quick training programs. Those were programs where we took the foreman's job and broke it down into its various parts. Then we had a series of conferences and an open-conference discussion that went on over a period of about eight or nine months, at a frequency of about an hour and a half to two hours a week training time.

Now, remember we were training around 30,000. We are now training 60,000 to 75,000 in the United States. We were training about 1,500 in Canada. We are now training about 6,000 in Canada. We were training about 1,500 to 2,000 in England; but with no dollar shortage, we probably would be training 8,000 or 10,000.

I estimate that industry will spend this year about 18 million dollars in training foremen and supervisors.

I think that procurement agencies should insist upon leadership training on the part of all war contractors. If we have learned anything from our industrial-relations experience of the last 10 years, it is that there is no substitute for close personal contact between leaders and the workers, and that employers, as such, are a dying race. Employers and plant owners in the old days have been supplanted by a group of workers (so-called management), which is nothing more than a group of workers with special prerogatives and special problems.

This so-called management group and its leadership is being challenged today to develop greater effectiveness and to develop a working force of men and women who believe in private enterprise; who have a respect for property, both public and private; who are willing to give an honest day's work for the wages they demand; who believe down in their hearts in the democratic way of life. One of the greatest problems we have today is that of worker attitude. It is, indeed, a very rugged problem.

I know that you gentlemen have heard many stories. I understand you have been in class since September, so by the time you leave here you should have a very good fund of stories. But a foreman told me a story the other day you may want to hear. He was trying to demonstrate the attitude of the people he was struggling with. I said to him, "Well, I guess you're getting along pretty well." "No, no," he said, "you're misimpressed. You're misimpressed." I said to him, "What do you mean by that?" "Well," he said, "I've got to tell you a little story. This is about a family that had two boys. These boys were twins. But as they grew up, they were quite opposite. One fellow was quite religious. He went to Sunday School all the time. The other fellow was a kind of devil. Apparently, he didn't amount to much. That situation continued all through life.

"Finally, the mother died. The boy who was pretty much a man of the world went out to make his living. The religious boy stayed at home with his father. Finally, there came the time when the father died, early one morning. The religious boy went down to the Western Union office to send his brother a telegram. He didn't know exactly what to say. He thought for a long time, then sent this message, 'Jesus has taken father.'

"Well, he waited all day to hear from his brother. He didn't hear from him that day. He got a bit worried on the second day because he didn't know what he was going to do. Along about nine o'clock that night he got a reply from his brother. It was a telegram which read, 'Who is Jesus and how much did he take him for?'"

Well, that is the sophisticated attitude that we have in our working force today. They know all the answers. I say to these supervisors-- and we try to develop this theory--"You have technical and production problems, but the answers to most all of your problems are found within your own group. Many times those answers can be secured much quicker

out of the working areas than they can from a drawing board or from a staff of engineering experts. If you can get this group to work as a team, and if your human relations is such that you get concerted effort and enthusiasm on the part of these workers, you will have ever-increasing productivity."

Let us be specific about what I mean by "supervisory training." Let me relate it to our problem. We know that in the last war we had absenteeism; we had tardiness; we had spoilage; we had turnover; we had everything that you could think of. But most of those problems come about through poor leadership. If you have a production crew that is set up to work as a group each day and you have absenteeism, you break up your production crew. You hurt your production for the day. The workers all know that, too. You say, "What are we going to do? How are we going to get him to come along? Are we going to penalize him?"

You can say to a group of foremen, "All right, you have 20 percent absenteeism, or 10 percent absenteeism. What percentage of the absenteeism do we have on the part of the foremen?" The answer is, "None." Every supervisor knows that his superintendent, his works manager, is going to be on the spot if he isn't there, so he makes it his job to be there. The superintendent has set up a human relations situation between himself and his supervisors that he can depend on. But that supervisor has not set up a relationship between his workers and himself. He has not impressed them with the importance of their being there on the job that day. As a matter of fact, if a worker doesn't like the cut of the foreman's hair, or something he may have said yesterday, it is very easy for him to decide not to come to work today.

Tardiness or absenteeism is a problem that rests entirely with the supervisors. Works spoilage, poor quality, tool damage, accidents—all those things are under the control of the supervisor. So he must be trained how to cope with those problems, how to work with his working force and develop them to the point where they do assume an attitude of responsibility.

There are some other things that can be done to improve the situation. In the last war, most of the production from trade schools was unused by war contractors. It was scrapped. It was not put in the regular channels of production. Next time, I think the unions should be brought into the trade-school picture so that the trade schools which are teaching skills can produce actual parts that can be used by the war contractors. You can do a much better job if you are making a part to a tolerance required by the contractor. So I suggest that trade schools, in a sense, be sub-contractors.

The next time we are going to make more use of our handicapped workers. There is a great deal of training going on among the handicapped workers. I think in many instances they will be more dependable workers.

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If I may say it, I think that the public relations program of the Armed Forces in the last war was sort of lousy, if I may use the word. Take my own little town with about 2,000 people. We had there a glider plant in which there were 3,000 employees. I don't need to tell you if you have a plant in which there are 3,000 employees located in a town of 2,500 people (and they get some of those from some of the neighboring villages), there are no secrets. All the great hush-hush business is of no avail. Yet the secrets were withheld, more or less, from the community leaders who could have contributed a tremendous amount to the success of the transfer of workers from nonessential to essential industries; who could have done a great deal to reduce turnover if the Armed Forces in the smaller communities would have let them in on some of their secrets.

Inasmuch as we are going to disperse our manufacturing facilities between now and the time we need them, we are going to find ourselves in a lot of small towns and communities. If we have a public-relations program that makes the community leaders a part of our team--in other words, if we could say, "We want the workers to be a part of our team; we want the community leaders to be a part of our team"; if they could know something of our problems and objectives; if they could know the number of workers we need--it would soften the impact within that area, at least, of the transfer of workers from nonessential to essential industries. There was a lot of sniping on that problem in the last war. It was difficult to get people. You will, through this public-relations program, soften the impact of the transfer.

Now there is one other problem that comes about in connection with the expansion of a working force. If we are going to involve, say, 20 million workers in this program (which could be a possibility), we will need a million supervisors, or somewhere near that number.

More important, we need about a million instructor teachers. To expand a working force, the supervisor needs a job instructor because high turnover is one of his great problems. A man cannot be teaching, manufacturing, and solving his technical problems in a shop where he has 25 or 40 people working. So he must train instructor teachers.

They probably will have to be upgraded out of the working force, but they will carry the on-the-job training load for the supervisor. Let us say the supervisor is going to be the quarterback. Well, he must have a center to pass the ball. So we are going to need these old job instructors. They must be upgraded. They are the ones who should also now be familiarized with the needed skills we are going to require to meet this situation.

Thank you very much.

COLONEL GREER: Mr. Croft is ready for your questions.

QUESTION: Mr. Croft, I am going to air a little personal grudge here that I have been holding for a long time. At a tender age I was, against my will, exposed to numerous courses in musical appreciation. At the age of 13, I spent 150 hours in a course in which I learned how to dissect an earthworm. The local carpenter shop wasn't big enough for all the boys to have manual training.

Do you believe that this basic problem of a shortage of technical workers would be helped by greater concentration upon handicrafts or manual arts in our primary schools and less concentration on the cultural education?

MR. CROFT: I believe—and you are right—that there should be a better understanding on the part of our educational institutions of the need for skills in industry. I think industry is as much to blame for that as our scholastic group. Let me give you that problem quickly. About 50 percent of the tax money in a small community is spent for schools. About 50 percent of the taxpayers are the industries. But industry today doesn't do very much about acquainting primary schools, even, with its need for skills and trades. I think we can help this apprentice problem tremendously by developing more preliminary skills and handicrafts in the schools.

I am the director of a foundry and I want to tell you right now it is a pretty tough proposition to get apprentices in our foundry. A foundry is a pretty dirty place to work. A lot of kids don't like to work with hot metals. Industry has the job of making these trades glamorous and interesting to the boys in these trades. I think one of our problems there is that in our colleges we are making a lot of poor electrical engineers out of fellows who might be pretty fine electricians. I don't know whether that answers your problem, or not. That is one of the problems. Along with that, we need to do greater screening at the college level. We are making a lot of maybe surgeons out of fellows who should be carpenters. I don't know.

QUESTION: Sir, you mentioned the problem of working attitude. Don't the labor unions really have more control over the working attitude than any other agency? If so, doesn't that make quite a problem for the labor unions to change that attitude?

MR. CROFT: It does. Let me answer that this way. You must understand—and most people in industry don't yet understand it—that a union is a body politic. Every business manager in the labor union is running for office every year. In so doing, he makes his campaign promises not from street corners or from rostrums, but by making exaggerated claims in the plants. Unfortunately, the worker's thinking about the union leader's attitude is somewhat different from what it is towards the average statement of a political leader. Most everybody knows that either political party has a platform, but I think many of the voters don't expect them to stick too closely to their platform. But our

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problem right now with the worker is that he believes every statement made by this union leader. If the union leader, for instance, says a company is making too much money, the worker believes it religiously. That is what he wants to believe.

Now I am talking about the union leaders down at the local level. I am not talking about the national leaders. I think the national leaders, as a whole are cognizant of the problem we have. But the local leader does have a great deal to do with these attitudes.

But, gentlemen, we must remember this: We say that labor and management is a team. Actually, they aren't a team. They have only one common interest and that is to preserve the enterprise they are in. But there the interest stops. They have opposite interests in the division of the dollar income. Labor wants all it can get, management wants all it can get, and the poor stockholder gets what is left. So how in the world can their interests be common? They are really opposed. Labor always wants more and more. In the shuffle, somebody gets the feeling that management gets all the money and the unions get nothing.

But there isn't yet an attitude or a spirit. That has to come; it has to come very soon. With this clamoring for reduced prices—and it is becoming very evident that everyone wants goods at less cost; labor wants higher wages—it will be necessary to have greater productivity. The union leaders are going to face that problem pretty quickly. We have to have team spirit. We must produce more. Otherwise, the whole thing is going to fall down on our ears.

Does that answer your question?

QUESTIONER: I was thinking particularly in time of war or an emergency whether the labor unions could improve the attitude of the workers.

MR. CROFT: In time of war the labor leaders can do a great deal. If the Armed Forces have a public-relations program that will bring into the picture the labor leaders at the local level, they can do a great deal. It doesn't do any good to go to Bill Green, Phil Murray, or somebody else like that. But if the labor leaders at the local level can be brought in with your community leaders—and when I say "community leaders," I mean labor leaders, doctors, lawyers, preachers, and teachers—to help build up morale, and they know that unless they do something worth-while they will find themselves on the community hot seat, you will get something out of them.

QUESTIONER: Getting down to a specific point, take the matter of absenteeism, which you mentioned: Could you bring that down to the local level and make it the responsibility of the labor union to see that the people don't have a high degree of absenteeism? The labor union, which is representative of the people working in the plant, is responsible for performing the right kind of job, isn't it?

MR. CROFT: To some extent. I don't believe it can influence absenteeism. I don't think it wants to get down that far into the problem.

There are many things that industry can do to influence the situation. I think we are learning some tricks now. Let me tell you about one. We have a cotton mill down south. A cotton mill is a pretty dirty place in which to work. Absenteeism is high. So we devised the scheme of giving the workers in that cotton mill free health insurance (Blue Cross). The way they work it is this: If a worker has no more than one unexcused absence in the month of January, the company pays his insurance for February. And so it goes all through the year. He earns it by being there on the job.

An excused absence is one in which the man is sick and the doctor, or someone, gives him an excuse. He is allowed one absence without an excuse.

I think you are thinking we might exert compulsion or pressure; I don't think so. I think this is all a problem of self-interest. It is a part of the leader's problem, enlisting the voluntary aid of the labor unions and putting a little pressure on the people to take the responsibility. I think the labor leader's greatest influence is in convincing the workers that they can earn more for doing less, if I may say it. Any way, that is the thing the worker would like to believe.

QUESTION: I have two questions, sir: In your system of training, can you, within certain limitations, train anyone to be a supervisor, or must they first possess certain definite leadership qualities?

The other question is, What is your attitude towards the so-called Labor-Management Committee?

MR. CROFT: Your first question is, Are leaders born or are they made?

Well, I think we have tests for leadership. They must, of course, have certain inherent qualities. For instance, a pianist, in order to be a successful pianist, must have the right hands. To be a successful surgeon you must have the right hands.

I think that if they can pass certain tests for leadership, which are very simple ones, we can do something with them. The most basic test for leadership is, Do you like people? You would be amazed how many leaders there are who don't like people. That is the most basic thing. If a man doesn't like people, if he isn't interested in people, he never will be a good leader.

Then, you see, the situation in foremanship and leadership is this: Industry has followed a pretty general practice for years. You have a department here. Maybe it is a rolling mill, or maybe they are fabricating something. The foreman dies, or he moves to California, or something else happens. They go down into the department and look the

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fellows over. They say, "There's Joe. He's one of the best workers we have. He knows how to do this job. He gets along pretty well with the boys. We'll make Joe the foreman."

So Joe goes home that night and hangs up his coat. He has been just a worker for years and he has the worker's attitude. Tomorrow morning he puts on the same coat, but instead of being a worker he is a boss. He has had no leadership training. He has the worker's attitude toward bosses, which he has to overcome. He is our greatest problem in the leadership group because it takes us a year before we change his attitude before we get him to see the management side of the picture; before we can begin to make what I would call a good leader out of him.

But we can train him on certain basic leadership qualifications. There are leadership skills that you learn just the same as you learn any other skill. You learn them with varying degrees of success. You learn certain basic qualities. There are six or seven of them. You must be honest. You must be fair. You must be courteous. Every one of these things are the very simple, obvious things that Dale Carnegie and other people have gone all over the country for 20 years talking about. In fact, they are so simple nobody wants to bother about learning them. But these are the basic qualities and the most important ones.

People like to be complimented on the things they do. People like to know you have interest projected beyond their immediate work-shop problems. You see, most of the leaders don't realize the workers have problems. A worker is doing a repetitive job. He is sitting there at the drill press or lathe and operating that same tool every day. He has an awful lot of time to think about what the leader said to him yesterday. He keeps turning it over in his mind.

Gentlemen, it is the little things that are important. I don't have to tell you how important the little things are in leadership. Those of you who are married know you can do almost anything in the world. You can flirt with another woman, or do anything else; but forget your wife's anniversary and you will be in the doghouse.

Now we had a problem in connection with the Labor-Management Committee. It all stems from this problem of union agitation. The first impression the workers had of the Labor-Management Committee was that they were going to manage the business; they were going to put in a group of people and they were going to participate in the management of the business.

Well, it took a little bit of figuring and some manipulation to restrict the activities to within certain areas. "Workers' areas" were set up which helped considerably. It gave the worker the feeling that he had a participation in this whole job. It provided a further grievance outlet. Generally, I would say that they did a very great deal of good. Next time they will do a lot of good, too, provided, when you start to form these committees, you set up the areas in which they will function.

QUESTION: What do you think will be the effect of unionization of foremen and supervisors on their capabilities to do the job as you have outlined it here?

MR. CROFT: I don't think you will ever unionize foremen and supervisors on a large scale. I am talking now about the production jobs. The Foreman's Association of America was organized early in the war by a group of foremen from the Ford Motor Company. When they first got the idea, they went to the CIO with it. The CIO looked it over and, for some reason not known to me, decided they wouldn't have anything to do with it.

I think at the peak of their activities they had about 40,000 members. Most of those members were in the production plants--Ford, Packard, and places where the foremen for years had had very little participation in management activities. There were some other plants that had a Foreman's Union. I once went to such a group of foremen, and after a couple of beers together, I said, "Tell me why you joined the Foreman's Union." "Well," they said, "since we have been getting bonuses on a tonnage basis, we never could find anyone around here who could tell us how they computed the thing. We didn't know whether we were getting a square deal or not. So we thought we would join the Union."

Now there is a problem which so many of our people don't realize exists, and that is that leaders have grievances. There was no grievance outlet. I think the Foreman's Union has been an expression of the fact that there is no grievance outlet for leaders. I think foremen in almost all cases feel they are definitely part of management when they decide to take their job and make up their minds they have moved out of the working level.

I don't think we need to fear, ever, about the morale of our foremen group.

QUESTION: I have a very simple question, Mr. Croft. Where are we to get the trainees and who is going to pay for their training? For example, the aircraft industry, which employs very nearly three million men, is down to under a half million. The workers in these industrial centers are migratory, or brought in from other places. Now the state or locality is certainly not going to pay for the training of citizens from other states. You do not have in the industrial areas a sufficient reserve to train. We must train people from other localities. So who is going to pay for it? And how are you going to get them to come in when there are no jobs for them?

MR. CROFT: First of all, I think I should tell you that we spent about 376 million dollars in training workers in the last war. It costs between \$45 and \$55 for each trainee.

I think that in the next war, or the next emergency, the Government, through the Office of Education, will have to train the migratory workers where they are and then transport them. But I think, also, that contracts

that are let in time of emergency should carry with them a certain appropriation for training in the skills.

As I said to you earlier, if we are going to expand this thing, we need to have a bill of particulars insofar as it relates to skills. We need to have an appropriation to do that training. Industry has to consider that as a separate part of its function.

Now I do think this: To assist in the transition from nonessentials to essentials, maybe in the next emergency we will make so-called training contracts with the nonessential industries to retrain the personnel which they are going to be separated from in the skills they are going to be required to possess where they go. But I don't think there is an answer to this particular problem except a Federal appropriation to the States based on an estimate of those available.

Remember that we have a different problem. We do not have 10 million unemployed, and it is safe to assume we are not going to have that many. This shift is going to take place within industry. We are not going out to get a group of workers who are on some make-work job. We are going to take all of these people out of industry, out of distribution and marketing. Many of them have skills which we need and they will require very little refresher training.

I think the real answer to that problem is to set up training centers in which we train for skills and then shift them.

It is very interesting to note, however, that as a result of the tremendous number of workers we brought, for instance, to the Pacific Coast area, large numbers of them are moving there rapidly. If there is a period of unemployment, you will have large numbers to draw from there and in the Middle Western States, or in the states west of the Mississippi River where, in the Air Force, you will probably carry on a great share of your productive activity.

It doesn't answer your question, I know, but it is as near to it as I can come.

QUESTIONER: The answer, I gather, so far as the money angle is concerned, is that it will have to come from Federal funds.

MR. CROFT: That's right.

QUESTIONER: But I still don't know where you are going to get the people to train, except that you will have to carry on a training program after the emergency occurs. There will be no pretraining program.

MR. CROFT: There can't be because you are going to take them out of the nonessential industries in areas where there are a great number of those industries. You are going to take them out of trades, services, and distribution, too.

QUESTION: I would like to know, Mr. Croft, have they developed aptitude tests whereby it can be determined whether a man should be trained at all; to what degree he might be trained, whether as a journeyman, a leaderman, or, say, an engineer, and on into scientific training; and whether they could be used in mass application.

MR. CROFT: In the last war we used in some of the aircraft plants such psychological tests as the Humm-Wadsworth test. Then we used many tests as to skills. There, of course, are thousands of tests. Some of them are not very valid. But I do think all of our experience in testing has developed a pattern that will make us at least 20 percent more efficient in selection and placement than we were before.

Now we should apply mass testing. There is no question about it. I think that the Armed Services are also cognizant of that fact because they are beginning to realize that their placement programs were a little bit off and that they wasted a great many skills. They themselves are developing for the enlisted personnel a better plan of placement and selection.

But I would say that there are tests that will at least determine a trainee's aptitude for a skill. What his success will be in that skill depends a great deal on the sort of training he receives.

QUESTION: Isn't it going to be necessary to put on some sort of campaign to change the national thinking in order to get people to enter apprenticeships in the skilled trades instead of trying to get white-collar jobs? Perhaps we will have to raise the age limit for apprenticeship training.

MR. CROFT: When you talk about this apprenticeship, it is a thing I am in contact with to some extent but not very close to because I am more concerned with leadership. But I have investigated it at some length because it is a problem that comes back to leadership.

Everybody wants a white-collar job. As I just mentioned to you, that is a tremendous problem in the foundry today. No one wants to do dirty work. We have got to glamorize the craftsmanship that comes from a journeyman. The thing that we did that tears that down a little bit was in the last emergency we broke the skills down so much that half the people who worked on a piece never knew what the completed part looked like.

We will have to glamorize the skills. In our colleges and universities there are fellows who should be able journeymen and mechanics, who may earn just as much in their future life as a skilled journeyman as a very poor engineer. I think we will have to glamorize the trade. We may have to change the age limits. We will have to soften the union's thinking about the percentage of apprentices we should have.

But I think there is one thing you forget about in all this; that is, in prior years immigration supplied a tremendous number of Old World skilled, very fine craftsmen. They have been shut off, to a large extent thus we have depended upon our modern machines and our mechanism to perform many of the so-called "hand jobs." But you can help this situation tremendously by requiring that the contractors do arrange at a local level for apprentices.

QUESTION: In connection with the training of supervisors, both the Army and the Air Force run management courses. But in the process of promotion, they have to stay in the same job for a long time. What can we do, after we run these courses in training supervisors and get them up, to keep them satisfied in their job before they go up to the next level? There isn't that much expansion in peacetime. Probably in your plant you may have foremen who have been foremen for 15 or 20 years. How can you keep the trainees satisfied until there is an opening?

MR. CROFT: You are talking about trainees for the foreman's job, or who have been trained for leadership and are on the job.

QUESTIONER: Training them for the next level of leadership or supervisory position.

MR. CROFT: We are doing now very little pretraining of foremen and supervisors. Most of the training we are doing now is for foremen and supervisors who are on the job. Pretraining of foremen and supervisors for those jobs should really be undertaken only among those fellows who are now acting as assistant foreman; men who have a reasonable sense of promotion.

I think many people think leadership training is a sort of vague thing, like we had with TWI, in which you give three 10-hour programs and then a man is always a leader. It isn't true. Leadership training is a constant process because of technical advances, sociological changes, Federal labor restrictions and labor laws. You have to keep on with this training continuously.

It is said that when you get to the foreman level the possibility of further advancement is limited. But that is not true. The greatest need we have today is for skilled people in the higher echelons of management. There are organizations today that are what we call "personnel finders," through which companies are spending as much as \$5,000 to find a man to fill a \$15,000 job simply because they are without any available trainees.

The supervisory level is the level out of which Management must now take its top group. There are plenty of opportunities because there are no men to fill the top jobs. It seems ridiculous to stand here and say there is a shortage of men who can fill jobs with salaries of \$10,000, or \$11,000, or \$35,000, but that is true. There is a serious shortage because there has been not enough upgrading of the management group.

You have an hourglass picture in that your bottleneck is not your supervisory group, which is a comparatively large group (1 to 25 workers), but your bottleneck is your works manager or your superintendent.

I don't think, as a rule, that that is a serious problem. I think the supervisor, when he gets to that point, realizes the multiplicity of problems and, likewise opportunities.

That is not a very good answer, but it is the best one I can give you. Remember, I told you I don't know all.

QUESTION: Mr. Croft, what is your Institute's definition of "foreman"? When a supervisor becomes a foreman that causes a great deal of discussion in lots of plants.

MR. CROFT: A foreman is the manager of a job within a business. He takes a certain amount of raw material, a certain amount of equipment, and a certain amount of personnel and fabricates a product. He is the one who makes all the profit for industry. The brass hats don't make a dime; neither does the sales department. If they go out and sell a motor to operate the flaps on an airplane for five hundred dollars, assuming that profit is the motive of our system of enterprise—it is, not one cent is made until that foreman can fabricate that motor in his department for maybe \$350. He must manipulate his men, materials, and equipment to get a maximum amount on quality-acceptable merchandise.

In the process of industrial organization, most of the special engineering and other functions which were originally handled by the foreman are now handled by specialists. So the foreman becomes a sort of manipulator. He schedules, plans, and develops the spirit of teamwork. He is a leader of that whole group, and out of that comes the finished part.

Now what are some of his qualifications? He needs to have pretty good knowledge of the job to be performed. But, remember, I said that that is only 22 percent of his job. About 78 percent of his job is just human relations with his people—day-to-day contacts. The balance of it is planning. In many cases, given the right sort of setup, with very little technical experience he can be a very successful manager of a department because within his department, as I told you before, are always those who know the answers to most of his technical problems; if not, he has an engineering department on which to fall back. He is the one who has to maintain a satisfied working force. He has to fit them into their jobs, the jobs for which they are best suited. He also must get good workmanship at a low cost.

QUESTION: Is a "guy-pusher" considered a foreman?

MR. CROFT: We have many breakdowns of supervision in plants. In some production lines we have what you call "pushers." That, however, is not very common in the higher skills.

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The general setup in a production plant is that we have a foreman and then we have an assistant foreman, or job setter. The assistant foreman is the on-the-job teacher. He sets up the job. Maybe he makes the first pie. He trains the new workers on the job, or he trains an old worker on a new job. He works with the foreman in organizing for the new job. He is an assistant in the department. You might call him--in some plants they do-- a "pusher." But that is generally the setup in most plants. We take him for training the same as we do the foreman. When we talk about leadership training, we take in the assistant foreman, the general foreman, the assistant superintendent, the superintendents, and, we hope, we can get the works manager and the general manager because they need it worse than the foreman.

COLONEL GREER: I am afraid we won't have time for any further questions.

Mr. Croft, on behalf of the Commandant, the faculty and staff, and the students, I want to thank you for a very interesting lecture and particularly the discussion period, which has proved most helpful.

MR. CROFT: Thank you.

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