

CIVILIAN MANPOWER REQUIREMENTS

25 November 1957

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COLONEL AKERS: Gentlemen, in the course of our study of the human resources of this Nation we are endeavoring to assess the adequacy of these resources to meet both military requirements and civilian manpower requirements. We are trying to do this against the background of limited war; cold wars, such as we are in now; and general wars.

I think it is probably fair to say that in this auditorium there are quite a few who have a reasonable understanding of the intricate process of determining our military requirements. However, I doubt that there are very many who have the same degree of knowledge of the perhaps more involved and complicated factors which are considered in determining our civilian manpower requirements, remembering, of course, that our civilian requirements must do two things: They must take care of the war effort, and they must also maintain the minimum acceptable civilian economy.

We are fortunate in having with us this morning to broaden this phase of our knowledge an old friend of the College. I say an "old" because I think this is his seventh lecture. He has devoted a great deal of his life to a study which is very tersely summed up in the title of his talk to us this morning "Civilian Manpower Requirements."

It's a privilege to welcome back to this platform and to present to the Class of 1958 the Assistant Director of the Bureau of Employment Security, Department of Labor, Dr. Louis Levine.

DR. LEVINE: General Mundy, Admiral Clark, Colonel Akers, members of the Industrial College of the Armed Forces: It is not a mere courtesy when I say it's a distinct pleasure and really an honor to be with you once again. I feel that this group represents perhaps as strategically important a group as we are likely to run into anywhere in the country for a discussion of the subject of civilian manpower.

I am a little troubled that I have been presented to you as something of an expert in this field. I'm fearful of this term "expert." Recently I heard an expert defined as a fellow who was very similar to the bottom half of a double boiler. He got all steamed up but he didn't know what was cooking. I certainly don't want to be in that category.

I do think that if we are to discuss civilian manpower requirements and their implications for mobilization and various conditions of mobilization, it is rather important, particularly at this stage, that we do some reexamination of our thinking and perhaps reassess our values and our objectives.

When I talk about values, I am reminded of the story of the youngster that had a dog. He was very proud of the dog and regarded the dog very highly. One day a man came by and saw this youngster with the dog and said to him: "Sonny, how would you like to sell that dog?" The boy said: "No sir. That dog is a very, very valuable dog. I treasure him highly. I wouldn't sell him for anything." "Now, wouldn't you set a price on him?" "Well, I'll sell him for fifty thousand dollars."

This man went by several days later and saw this youngster with the dog there again and said: "Well, you haven't sold your dog, have you? Have you lowered your price?" He said: "No, sir. I still want fifty thousand dollars for that dog."

A few days later this man went by again and he found the youngster there without the dog and he said to him: "Well, what happened to your dog?" "Oh," he said, "I sold him." "Did you get fifty thousand dollars?" "Yes, sir." "You mean to say you got fifty thousand dollars?" "Yes sir. I got two twenty-five-thousand-dollar cats."

The value we attach to our human resources have an important bearing on our manpower potential and our effectiveness.

Before I get into some of the principles underlying human resources and their utilization, I think we might talk about a few general factors that are now coming more and more into focus. The events of the last couple of months, the sputnik, the muttnik, and so on, have caused us to reexamine and reappraise perhaps what is involved in our manpower resources. There are a few general considerations that require careful thinking. I'm sure I do not have the answers, but I think that they ought to stimulate you to think what the answers might be.

One, civilian manpower requirements and military manpower requirements in the world of today--in a world of uncertainty and considerable tension--which is likely to continue that way for years ahead--may not be as far apart as one may think. In other words, I am inclined to think that the line of demarcation between the so-called civilian economy and the military economy, if you will is rapidly disappearing. I believe this is true in

almost every field of endeavor you investigate. In research for example, I would say that basic research is equally important for military implications as it is for civilian. In fact, I cannot think of any basic research that hasn't had implications for both the civilian and the military. This is equally so with respect to applied research.

I would say, therefore, that our concern about our educational system is as much a concern for the military as it is for the civilian. What our youngsters are being taught in the elementary schools, the high schools, and the colleges has tremendous implications for both the military and the civilian. This line of division of manpower support for the military is perhaps not what we have thought of in the past. It may well be that the teacher of physics, or the teacher of chemistry, or the teacher of mathematics is as much a part of the support of the military forces in this country and its military strength as perhaps any other occupation we may have. Yet traditionally the military man does not think of the college teacher, certainly of the elementary school teacher, as being a part of the supporting forces required to meet the needs of the military.

Another consideration is that in assessing our manpower resources we have to rethink the significance of our population growth, the size of our population, and the question of sex and age characteristics of our population. In the main, military people, certainly up to World War II, were inclined to assess manpower feasibility for the Armed Forces in terms of the size of the male population pretty largely in certain age categories and certain conditions of physical fitness. It may well be that these qualifications are not anywhere near as significant for future mobilization requirements of the Armed Forces as they have been in the past. It may very well be that manpower must be assessed in terms of its quality, in technical capacity and competence, rather than in terms of numbers. Indeed, I am inclined to believe that if we think of our manpower strength only in terms of numbers--and statisticians are inclined to do that very often--we will be doing a real disservice to this Nation.

Actually we are outnumbered by the Soviets, we are outnumbered by Communist China, we are outnumbered by the satellite countries. It isn't numbers that hold the key to our competence and strength in manpower terms, but, rather, quality. The big question mark that confronts us today, and that has been brought forth so clearly in the last few months, is: Do we have, and can we maintain, manpower superiority in terms of technical competence? Can we outproduce,

outcreate, outthink, man for man those who might be our potential enemies? Can we work with a constantly changing and a constantly advancing technology? These are the crucial tests, and they are just as important for the military as for the civilian, it seems to me, in assessing civilian manpower requirements.

Another factor which requires reexamination when we are thinking of the military and civilian manpower requirements, is public awareness of the meaning of war. The military has been inclined to think that the civilian population never truly appreciates the horror of war. Military people also think that they rather than civilians bear the burden of war. Well, it is true that in this country we have never really had war brought home to us. The nearest we had that, of course, was our own internal war in the War Between the States--the Civil War. But apart from that, we have not known war at home.

Yet I am inclined to think that casualties--and that's one test by which you bring home the meaning of war--may be higher among the civilians than among the military in the wars of the future. Indeed, to be in uniform, may be the safest place to be in the wars of the future. You have heard that old gag about getting near the general for safety. Now it may be, "Get into uniform if you want to be safe." It's not inconceivable that thermonuclear war has ended the line of differentiation between the military and the civilian. Geography and space considerations must be reassessed. Of course, traditionally we have thought of ourselves as bounded by the oceans. We took to the air and discovered that oceans no longer afforded protection. We talk now about air cover and that kind of protection. The truth of the matter is that the world has shrunk tremendously. "It's not just the world any more that we are talking about now." We are talking about--and I hope we are doing something about--the conquest of space and its implications both for civilian and military considerations.

Well, what I am trying to say at the outset is that in our analysis of civilian manpower one cannot differentiate it from the military and what we do about it has an important effect in mobilization programing.

There are some fundamentals about the manpower resource that I think all of us must recognize. The manpower resource is different from almost all other resources for purposes of mobilization. We must start with the premise that in a democracy, where we value highly what we call our free way of living, our free-enterprise system, we also value highly our individual liberty and the opportunity to make individual economic decisions either as workers or as employers or operators of business enterprises. This has an important bearing on all mobilization plans.

When we talk about the human resource, we are talking about both an economic resource and a human being who places a high value on his liberty and his dignity. In a democracy this gives rise to a great many problems in dealing with human resources. Quite contrary to the notion that some Americans seem to hold, people cannot be shifted around as easily as other kinds of resources. It's true, we are regarded by the people of other parts of the world as being the most mobile people on the face of the earth. It is not true, however, that the American worker just picks up his hat and goes 2,000 miles to a job at the flip of a hat.

Manpower statistics for World War II show that we had tremendous geographic mobility. Well, I submit that we cannot go by these statistics of the past. Much has happened to our manpower resources. The economic setting, the economic climate, is quite different today than that which prevailed at the beginning of the defense period in 1940 or at the outbreak of World War II.

For one thing, we are not following a decade of surplus labor, widespread unemployment, involving millions of people and a serious economic depression. We are in a period of very high-level economic activity. We are in a period of practically full employment. There are even some people who say that in the last couple of years we've had excessive employment; that we may have brought into the labor market some marginal workers who haven't added much to the efficiency or productivity of the labor market. Job opportunities have exceeded job seekers. Wages have been good. Employment conditions have been good. Under those circumstances mobility of workers is considerably reduced, particularly where it involves moving at any considerable distance to another kind of job opportunity.

As a matter of fact, that economic setting, plus some other developments, have tended perhaps to restrict our geographic mobility. For example, take the matter of home ownership in the United States. If you look at home ownership figures, you will see that we increased enormously the amount of home ownership among our people. These people, therefore, have developed roots in communities and their mobility is more restricted.

The growth of organized labor and collective bargaining, with seniority privileges with respect to layoff, pension plans for retirement, and supplemental unemployment benefits--all of these are factors which

tend to place a high value on staying with the same industry in the same locality. We cannot assume that mobility of labor in itself will meet civilian manpower requirements under mobilization conditions.

There is a danger that our national manpower balance sheet can lead us to a misleading conclusion. You may find that manpowerwise nationally, our labor supply and our labor requirements are pretty well in balance. But if you examine the components of the labor supply and the components of the labor requirements, you may discover that there are tremendous imbalances. It is the components that really count, not the national balance sheet.

When you have a surplus of labor in New England and, say, a shortage of labor in the Southwest or on the west coast, you do not just wipe out those differences by simply showing the national manpower balance sheet. We may have a balance of the number of bodies as against number of workers required; but in terms of occupational qualifications there may be tremendous imbalances, particularly in our higher skills, in scientific and engineering fields, and in the category of the occupations that we have come to refer to as "technicians."

There are frequently industrial imbalances as well. While one industry may have some surplus workers, another industry may be developing shortages of workers. We can't look at national balance sheets alone. We have to think of manpower in terms of geography, in terms of occupations, and in terms of industry.

In the manpower field, it is important that we recognize the interweaving of the human being and the economic resource. There is a growing feeling, more so than perhaps at any time since the height of World War II, that our manpower resource may be the most crucial and limiting factor in our mobilization program. The problem is to assure an adequate manpower supply, adequate not only in numbers but more so in terms of quality, to meet mobilization requirements. At the same time how can individual liberties and individual rights in a democracy be protected? I want to get to that problem a little later, because I think it deserves careful consideration.

I would like to say a word or two more about our manpower resources. The distribution of skills and the occupational characteristics of our work force are more important than the numbers. But we must also recognize that there is enormous flexibility in our manpower resource. It's true that there is an outermost limit. After all, you don't have more manpower

than your population. In fact, we don't have as much manpower as population, because we deduct the sick and those in institutions and the infants and the various categories that can't contribute to the maintenance of the economy. The statistician generally talks about individuals who are 14 years of age and over and who are not institutionalized as representing the outermost limits of the work force. And when I use the term "work force," I am not differentiating between civilian and military.

The work force experiences many fluctuations. In fact, it's highly dynamic and flexible. It shifts with differing economic conditions. In the past year or two, not this year but the year before, the work force experienced a net growth of approximately 2 million. But our normal annual growth of the work force is about 750,000 workers. The normal growth of the work force each year is the number of individuals who are added to the work force by reason of becoming old enough to participate in the labor market and offset by deaths and retirements.

What brought 2 million people into the labor market at a time when the Nation was not at war? The answer lies in the abundance of economic opportunity, the increase in employment opportunities. When there are lots of jobs, and attractive jobs, at good wages, not too far away from where the labor supply or population is, we can have tremendous growth in the work force. Most of that labor force growth in recent years has been made up of middle-aged women, women who have by and large completed their childbearing and childbearing responsibilities and are now returning to the work force, perhaps after having been out of it for some 15 or more years. Some of them have never been in the labor market; came out of high school perhaps, got married, and carried on their family responsibilities, and then came into the labor market for the first time.

In other words there is shrinkage and growth of the work force in response to economic opportunity. Obviously, under mobilization conditions employment opportunity normally grows tremendously, and with it considerable numbers are attracted into the work force beyond normal growth. On the other hand, we are just in a period now where there seems to be some evidence of a slackening in the economy. A number of the indexes and gages of economic activity seem to indicate that we are not only slowing up, but that we are changing direction. Instead of an upward trend, our economy is actually heading downward. We don't know to what depth and for what duration, but we know that we've changed direction. Under those conditions the growth in the work force

will shrink very rapidly. It's highly likely that we will be down to the minimum number entering the labor force attributable to population growth rather than economic opportunity.

There are other ways in which our manpower resources are modified to meet mobilization requirements. Hours of work are one. For the economy as a whole--there are few elements that are not affected--in the last six or eight months the hours of work per week have been shrinking. Yet under the stress and strain of mobilization we will go in excess of the so-called normally scheduled 40-hour week. In 1945, during World War II, we held to 48 hours as our work week. We had some grave doubts whether if we went beyond 48 hours, we would do much to increase production. Actually, excessive hours of work bring about some decline of production, because there is a limit at which increased hours of work give rise to such things as turnover and absenteeism and other factors that tend to hold down production.

There is flexibility there in the hours of work, certainly between the 40 hours and even less that we may be working in the next few months as against the hours which we might work under mobilization conditions.

And there is some flexibility too in shifts of work. We were never able to man a third shift very well during World War II. We even had some difficulty with the second shift. Added shifts, you might say, do not increase manpower supply. They do, however, make it possible to better tap certain parts of the potential work force than if we had all work concentrated in one shift.

Much can be done with arrangements of work schedules. Part-time employment makes it possible to bring certain people into the work force who have household responsibilities. Sometimes you have to make arrangements to take care of children while the mother becomes available for work.

A major difficulty in any war of the future is that we certainly are not going to have the time element that we had in the wars of the past. Refresher training and development of skills may be more limited because the time element will not exist. Therefore one of the really crucial problems is the development of a skilled work force with all the potentialities that can be called into being to meet mobilization requirements quickly almost over night.

At the same time I want to raise some questions with you military people as to whether we might need people in the numbers that we have traditionally thought about when we think of thermonuclear warfare being brought home. If H-bombs are directed at our physical plant capacity, might we not have a situation where the work places are gone and the work force is actually surplus, at least temporarily? This is one of the problems that we must think about.

This indicates that by and large we are in a situation where we cannot think of manpower mobilization in just overall numbers. We must think in terms of the quality of our work force. We must assess it in terms of the degree of flexibility which may be required to adapt the size and character of the work force to meet particular needs of particular localities, particular plants, and particular occupations.

In the final analysis, manpower effectiveness in the civilian economy and as support for the military service lies in the local labor markets. The heart of the manpower resources and requirements problems is found in these local labor markets.

An important consideration, therefore, is whether the local labor markets have the kinds of work force in terms of occupational distribution and other qualifications related to the manpower requirements, current and potential, in those local labor markets.

Civilian manpower requirements cannot be analyzed as an overall national balance sheet alone. Such an analysis might be appropriate for a review of the size and net strength of the Armed Forces. In the latter case overall national totals are particularly meaningful. For civilian effectiveness in the economy we need to give special attention to local labor market considerations.

We know enough about local labor markets to know that they differ widely from one to another. They differ as to industrial structure. They differ as to occupational composition. They differ as to social attitudes. They differ as to the degree of male and female participation in the work force. They differ as to geographic mobility. There are some parts of the country, like New England, where if one goes just a few miles, 10, 15 or 20 miles, a person thinks he's in a foreign country. In the Southwest one can travel, 50 or 60 miles twice a week to go to a picture show of an evening. Mobility there is entirely different. Manpower effectiveness to be realistically assessed, it seems to me, requires an analysis of the local labor market and the industries that are located there and the degree to which those industries can be and are a part of our military effectiveness.

We need to give some thought to the institutions which contribute to our manpower effectiveness. One might say that the first institution that contributes to manpower effectiveness is the family itself. A youngster acquires a considerable skill and a certain amount of discipline--in the modern generation it's quite arguable whether they're getting enough of that discipline--right in the family. He learns how to live with others, and acquires a set of values, including spiritual and material considerations. The family and the church contribute significantly to manpower effectiveness.

The schools, as an institution, have an extremely important role in skill development. We know, of course, that the population explosion which we've been experiencing with World War II and in the post-World War II years has contributed greatly to the shortages in our educational capacity today. Lack of school facilities, teachers, and many other considerations have brought about an educational lag. We express considerable concern about the financial costs of needed school construction. It is interesting to note, however, that frequently there's more provision for a gymnasium than there is for classrooms. We need to reassess the values we place on education, on curricula content, on work assignments and on discipline.

I do not profess to be an educator, although I did have some little part of my life in the field of education. It does seem to me, however, that we need to think through, in the local communities particularly, what changes in the educational process are needed. These considerations must take account of a changing technology and of an expanding economy. We need to plan on the basis of the long-term trend of an expanding economy even if we do have an intermediate short-term downtrend. How best can schools contribute to the skill resources that the economy of today and the future requires? This matter is as much concern, it seems to me, to the military as to the civilian segments of the economy.

We need also to reassess the part which industry must play in skill development, in skill acquisition, and in bringing about a higher proportion of skilled personnel in our work force.

How many of us have thought about how most people acquire skills in the United States? I am not talking about the youngster who goes on to college and gets his degree in engineering or in medicine or in law. How do most of the people acquire skills in the United States. If you stop to think about it, it's almost a happy-go-lucky process, including an accidental set of circumstances that influences skill development. A

youngster comes out of high school, he gets a job, usually an entry job. It requires no skill. He works with some other people who have a little more skill than he does. They let him sometimes operate some of the machinery. Occasionally he breaks a piece of equipment. Sometimes he spoils some products. Three months later he's left that employer, frequently of his own will, and gone to another employer.

Now, for the second employer he's got more skill than he had the first time. He "fibs" a little bit about it. He experiments a little bit more. Then he goes on to another job.

If he's really lucky, at the end of six or eight job changes over a period of some years, assuming he's gone down the right occupational track, he may have acquired some semiskills or even a few skills. The odds are more often than not that he will have gone down some blind-alley jobs, wasted his time, spoiled equipment and products for many employers, and contributed to excessive turnover. By some lucky circumstances over a period of time he may have acquired some skill.

This is the way, all too frequently, that industry has been training its people. I know we have a lot of literature about personnel management techniques and the business of human relations and communications. Most of the ideas are in the books and not in practice.

I must in all fairness hasten to add that there's a growing awareness in industry that human resources and skill resources have a more important part to play in the maintenance of the economy, in the maintenance of the industry, and the establishment. I must add, however, that awareness is greater where the industry costs are met in some measure by the Federal Government through the procurement of defense products.

Formalized apprentice training has provided a very small part of the skill development in this country. Formalized training within industry has been relatively small. Our economic needs can no longer rely on such small-scale training for not just peacetime requirements, but for mobilization requirements as well.

There is another institution which has a tremendous part to play in the development of skills and you gentlemen are a part of it. That's the armed services. For a great many youngsters perhaps for a period of two years during the most important part of their lives, they will be part of the armed services. What are they acquiring there in technical

know-how and in skill development? What contribution are you making to increasing the skill competence of at least that segment of the population with which you deal and which becomes a part of our work force?

Now, I know there are some people in the Armed Forces who say that they already make too much of a contribution. They say that as soon as they have developed an electronic technician, he completes his period of service and industry grabs him up, with the result that industry has gotten a freely trained man from the armed services. I doubt whether this is entirely a loss if you think of it in terms of the economy as a whole. Much skill development and skill acquisition, including a careful determination of aptitudes and potentialities and proper motivations of people is taking place in the armed services. Perhaps more can be done to assure ourselves that we will have the manpower effectiveness needed for an expanding economy and to meet mobilization requirements. This, it seems to me, is a very real challenge to everyone in the armed services. I am glad to say that there's a growing awareness in the armed services of that problem.

Having all of these considerations in mind, what is involved in civilian manpower requirements for mobilization? Well, for one thing, it seems to me that manpower numbers will not be the problem that we have had in the past, either for civilian or military needs. It is no accident that the size of the Armed Forces is scheduled to shrink by some 200,000. I can't believe that there's not some relationship between advanced technology in the military and the need for just people in the military. That kind of change will undoubtedly continue.

At the same time those individuals who are working with the advanced military weapons must be of a far different caliber, of a higher quality caliber, than anything we've had in the past. They are precisely the same individuals, with the same kinds of skills, that the most crucial war-supporting industry will be demanding.

This point can't be stressed too much. When consideration is given to the questions of Reserves (Active Reserves, Ready Reserves, the Standby Reserves, and so on) and consideration is given to problems of occupational deferment, one of the most crucial problems that we will face will be the competition between the armed services and very critical civilian industry for precisely the same highly skilled occupations. I don't think we've licked that problem yet, although we are becoming increasingly aware of it.

I should also say to you that on the basis of the traditional physical specifications of the military, you will find that there is a higher concentration of individuals in those industries--electronics, guided missiles, aircraft and so on--who meet the military specifications and are in the Reserves than in other industries which are less essential to mobilization. It is even conceivable that if all those now employed in some of the critical industries who are on Active Reserve were to be called out immediately for military duty, we would almost have a stoppage of production of important military items.

Industry has not done enough to assess its own military vulnerability in terms of its manpower resources. It seems to me that this, too, is one of the crying needs. Industry cannot undertake manpower skill development and skill acquisition through training without having some notion of its requirements, its growth potential, its losses through turnover and death and retirement, and its changing occupational composition, as well as the military vulnerability that it might face under mobilization requirements. So while numbers may not be important, the few who are important will be exceedingly important.

Similar developments are taking place in the civilian economy. Less and less important is the element of brawn. Unskilled labor is increasingly becoming excess in the labor market. We are more dependent upon the higher semiskills and the skills. A whole new category of occupations which fall between the higher skilled crafts we have known in the past and the professions is emerging now. It is probably the most crucial for both the military and civilian needs. I refer to the technicians. The electronics technician is a good example.

We have technicians not only in the engineering fields, but also in the medical arts and many other fields. The technician must have not only the skill capacities of the highest skilled machinist, the pattern-maker, molder, shipwright, and so on, i. e., the manual dexterity; but in addition he must have technical know-how. This technical know-how doesn't require a graduate degree, as in engineering or in medicine. It requires technical know-how above high school and less than college graduation. It may be that the technical institute may emerge as one of the most important educational institutions in this country.

If we are to have the needed technicians for both the military and the civilian portions of the economy, we will have to give more and more attention to what is being done in our educational institutions. Is education properly structured to provide these technicians? Attention

must also be given to what takes place in industry. Training in industry with supplementation in the schools or other training facilities in the community, can help to supply the needed technicians.

Obviously, the scope and character of any future war will have a considerable bearing on manpower requirements. Is the threat one of all-out warfare or in a limited sphere? I hesitate very much to talk in this field. I don't know, and I don't profess to know, much about it. You people have much more knowledge of military capabilities and military potentialities, theaters of warfare, and the scope of warfare than I do, certainly.

It seems to me that we are up against the problem of being in a state of readiness for all varieties of warfare. Prayerfully, hopefully, we want it limited if it has to come at all. But nobody can guarantee that. I have heard the argument made, as undoubtedly you have, that the character of the warfare of the future--thermonuclear bombs and intercontinental missiles--involves potentialities so horrible that nobody will dare turn loose such destruction. It might mean literally the end of civilization for the enemy as well as for ourselves.

This may seem logical. It may be that responsible people will sit down and assess those possibilities. The character of the people involved may dictate what will happen in the final analysis. No one can say where or when some individual in the heat of the moment, with the power to act, may unleash warfare that cannot be contained to a particular section of the world or a particular type of armament. Therefore, it seems to me that you have to be prepared for all of the risks.

Under these circumstances it seems to me that we must think not only in terms of the limited situation, but thermonuclear warfare brought home. This raises some very real questions that affect every single institution in our life today.

It affects the matter of government itself, continuity of government. I don't suppose we can work out the answer here. It seems to me abundantly clear that continuity of government can't be assured by some group of individuals sitting in Washington under conditions of thermonuclear warfare. Increasingly we are driven to the situation where we may need to have self-contained and self-operating structures, institutions, governments, industry, manpower, supplies components for sections of the country. Whole sections of the country may be destroyed and unable to participate effectively and yet war must continue to be carried on both for retaliation and survival.

The questions of continuity of government, of dispersal of industry, the problem of maintenance of supplies and stockpiles, and the proper relationship between supplies, components, and end products need a great deal more attention. Difficult as the problem may be with respect to material resources it is even more difficult for manpower. Perhaps we can't stockpile aircraft parts because, as soon as we start producing them they become obsolete. What's the use of stockpiling obsolete material? How much more difficult is it to stockpile people? How does one accomplish it in a democracy?

Is it possible to create enough awareness of the manpower requirements skillwise to meet mobilization needs in a period when a country is not at war? Creating such awareness in time of war will not help much, because of the time element involved in any war of the future. This is one of the very real problems.

It seems to me that in a democracy, under the kind of conditions that prevail today, we must start at the grassroots in the local communities to assess our manpower resources and our manpower requirements. We have to take account of the kinds of industry and plant facilities that exist there and their potentialities for needed wartime production. We need to establish community organizations, including the schools' industry and labor organizations, to assure that necessary training will be taking place to assure skill development.

The first step is to have the manpower facts. It's sad to relate that in this country, although we have more facts about more things than any other country in the world, we don't have many facts about our human beings. We have much data about pigs, all kinds of breeds, the numbers and quantities produced, the numbers that went into slaughterhouses, and the daily price quotations. We have much information about production of coal and copper. We don't have enough facts about human beings.

We take a population census once in 10 years. We take a census of manufacturers every five years or so if Congress is willing. We are beginning to learn a good deal now through the machinery of the Federal-States employment security system, particularly through the work of the United States Employment Service and the affiliated State employment services. We know a good deal about local labor markets and we know a good deal about employment and somewhat less about unemployment. But these are manpower numbers. We don't know as much about their manpower characteristics.

We need to know more about the skill distribution that exists in our work force today. Such information is needed for the country as a whole, but even more for a particular industry or a particular labor market. What occupations are becoming obsolete? What new occupations are emerging? What are the changes in occupational requirements and skills resulting from changing technology? Our inability to answer these questions properly arises from our failure to keep pace with economic changes.

I have great faith in the American people's interest and capacity to respond to an important situation when it knows the facts. I don't think we have done enough by way of creating an awareness of the needs for occupational facts. It may very well be that the Russian earth satellite has done more to develop interest in this area of human resources than any single thing that has happened in the last five or six years.

Well, I've talked much too long. I would rather leave time for you now to proceed with any questions you want to raise. Thank you.

COLONEL AKERS: Dr. Levine is ready for your questions.

QUESTION: I would be interested in your comments on what kinds of persuaders you suggest to induce, we will say, a thousand men to qualify for a long-lead-time skill or profession when the leaders in the economy say that they can only absorb 500, as was done by the American Medical Association and in the recommendations of certain engineering schools some time ago. That is the first question.

The second question is, What is the future of that increasing number of people, that part of the population that is classified as semiskilled, unskilled, and marginal, that are being pushed out by industry and by the military?

DR. LEVINE: You have two good questions. With respect to the first one, there's no doubt that we have many groups in this country, such as those you have mentioned--actually the educational groups themselves have a good many traditions and views on what can be done about education--that are limiting factors. The American Medical Association, or the engineering societies, or educator groups can't finally stand up against public opinion. When the public is aroused to do something about particular types of activities, it generally has its way. I would say that we are right now in the midst of a very serious problem in the field of education. Traditionally in this country, education has

been a highly localized responsibility. This has been recognized by both the State Governments and the Federal Government. That is a part of our democratic way of thinking. At the same time we are confronted with the problem of, how do we get proper motivation and proper recognition of the types of educational activities which must be undertaken?

I expect that this country won't do it by legislation. It won't be by Federal legislation or by Federal direction. I think it will be accomplished in part through a good deal of publicizing if you will, causing people to think and demand changes in our educational activities and curricula. In part it will be accomplished by revising the values we have placed in this country on education.

We have a demoralizing attitude toward "eggheads" in this country--intellectuals, if you will. The football coach at a university is far more popular than is, for example, the college professor of physics, astrophysics, or some similar subject. In European countries, particularly in the German system, for example, a considerable prestige attaches to educational work. I think we're going to change our values so that we attach more prestige to education and to those who engage in the educational process.

In addition I believe that there will be some indirect ways in which assistance will be given to States to improve the educational process. For example, the typical school teacher in high school in some of our rural areas is probably not well informed about occupational requirements of a changing economy or how to uncover latent skill potentials. I think that a great deal more is going to be done to provide technical materials, guides, literature, materials, and teaching to occupationally motivate youngsters. I think the whole area of uncovering potentialities and aptitudes of students will get far more attention through testing. There are a number of other developments, such as school counseling, which will be greatly expanded.

It may be that some of the professional societies will have to change some of their limitations and restrictions on participation in certain occupations. This is not only true for professional societies, but also perhaps for labor organizations. In this category falls limitations that are being put on training of apprentices frequently by the unions and sometimes by industries.

We have gotten a scare. This is one of the things that troubles me. The American people are a highly mercurial people. They swing to

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both ends of the pendulum. Just a few weeks before sputnik appeared, I know that the National Science Foundation was concerned lest the training of engineers and scientists decline because the labor market was softening a little bit. It was also concerned that the Government announcement of defense procurement curtailment would affect the outlook for engineers. Then sputnik appeared and overnight our position has changed.

By the same token I am worried about the public attitude in the next few months ahead regarding the need for skill development. We may have, probably will have, in some local communities and at some plants a surplus of engineers. How do we talk about training more engineers in the face of a temporary situation where we may actually have some displaced engineers? This is a very real question.

I think we have to convince the students, the teachers, the industry, of the facts that point to a continuing shortage of engineers. The projected trend, based on experience of the last 7 years, indicates that for the next 10 years we will need many more skilled people. Our population growth, the labor force growth, the types of technological changes that are taking place all point to increasing skilled manpower requirements.

With respect to your second question--what to do about the semi-skilled and unskilled workers which become more and more surplus as industry becomes more and more advanced in technology and automation--the significant thing that has been happening in the last few years--and I see no reason why the trend will not continue--is that we are requiring fewer people to turn out more and more goods. This is evident if you look at manufacturing employment. Manufacturing employment is lower today. It was lower even at the peak of economic activity a few months ago than it was a year ago. If you look at manufacturing employment, you will find that within it there has been an increase of nonproduction workers, but a falling off of production workers. In other words, there are more people pushing paper around--in sales and accounting and research.

What does that mean? Well, where have employment opportunities been growing? They have been growing in nonmanufacturing. The industrial shift over the last several decades has been from agricultural employment to industrial urban work by and large. About 11 percent of our workers are in agriculture. Time was when it was 80 percent some decades ago.

Within industrial urban employment the shift has been within hard goods employment to nonhard goods employment. We require fewer workers for consumer durable goods.

We have also shifted from manufacturing into nonmanufacturing. The growth of employment opportunities has been in trade, in service, in government--State, local and Federal--in all of the areas that tie into leisure-time activities, such as recreation, tourism, and so on. This latter development reflects the rise in our standard of living.

From the standpoint of the military, if you look at World War II experience, the nonmanufacturing categories are least essential to the support of the Armed Forces. Obviously, people who work in tourist agencies are not quite as essential for mobilization as an individual who is working in an aircraft plant. A person who was working in an aircraft plant probably was regarded as more needed for military support if he was a direct production worker than if he were employed as an accountant. The employment trend is away from direct production into nonproduction and over into the service and trade categories.

I don't know whether I've answered the question, but it seems to me that many of these semiskilled and unskilled workers will find themselves in nonmanufacturing in the future.

QUESTION: I want to ask a question about the Employment Service, if I may. The Federal Civil Defense Administration has frequently announced the policy that instead of trying to persuade individuals to volunteer to get on with the job, they will toss the problem back to Government agencies, such as Agriculture and the manpower segment of the Department of Labor. You pointed out the significance of the problem of local assessment of our labor markets. Doesn't that mean that the services and industry will help some in this problem?

DR. LEVINE: Civil defense manpower readiness has been limited partly because inadequate funds have been provided. Delegation of responsibility from Civil Defense to us is inevitable. We have known that from the standpoint of civilian manpower and mobilization requirements, whether we like it or not, the public employment offices throughout the country represent about the only nucleus that we have which is familiar with local labor market resources and that we can use to mobilize civilian manpower.

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So all through the years we have tried to maintain some element of mobilization readiness in the public employment offices throughout the country. We have sent out defense readiness materials of one kind or another. The Federal Government provides certain standards and policies, but the actual operation of the employment offices is by the State Governments. With the Korean outbreak we brought the State directors in and discussed with them how we would operate under the Federal-State system in that kind of emergency, a limited emergency. We agreed on policies and standards.

In the last couple of years we have invested more money in the States in doing studies on research on labor market characteristics and manpower resources and manpower requirements. These will also be helpful for mobilization purposes.

We would like to see the Employment Services throughout the country greatly strengthened. We need to do more about keeping pace with changing occupations, their skill content and requirements. We have gone to Congress several times for money. We need to revise our Dictionary of Occupational Titles, which is the standard reference book in the field of occupational definitions and descriptions.

QUESTION: You mentioned that industry is having a hard time finding enough skilled workers. But if the number that they need goes down, as it looks at this particular time, who is going to stockpile these people?

DR. LEVINE: Well, it seems to me that those industries that are most closely associated with the production of war materiel, which have large numbers of these critical skills, should be our first concern. Sound business practice requires that they provide the necessary training for labor turnover and losses from death and retirement. That is the minimum. It seems that a continuing training program which takes account of both short-term and long-range needs should be undertaken.

Lacking that, we will have to go to something like we did in World War II. This was the process of job dilution--breaking a skilled job down into its components and having different individuals do bits of a skilled job. I don't know that we will have the time to be able to do that sort of thing in another all-out mobilization period.

The question of how to get industry to take necessary action is difficult, remembering, as I said, that you can't stockpile people

very easily. When you train a man to work at a higher skill and don't give him an opportunity to use that skill, you create a frustrated worker I don't think we know the answer.

QUESTION: You mentioned earlier the importance of and the need for training for higher skills in industry. I wonder if you could expand on that a little and give us your ideas about what we should do in this country to provide that training, and whether it should be industry sponsored or as part of our school system.

DR. LEVINE: Well, I think that it isn't a question of which particular institution--industry or the school system--should do it. I think it requires the resources of all of them. We have training, which provides some training on the job, supplemented by some training in the schools. Trainees learn to read blueprints in school and at the same time they learn to operate certain kinds of equipment. They learn to repair and maintain certain kinds of equipment. I think an extension of that kind of training for these higher skills is needed.

The requirements of industry in many occupations place increasing emphasis on educational attainment. There are many occupations today which some years ago could have been filled with high school graduates but now require a college education. My feeling is that the technical institutes, if you will, or their equivalent, junior colleges of one kind or another, two years' education beyond high school, will have to fill some of the gaps in providing technical know-how.

COLONEL AKERS: Dr. Levine, on behalf of the faculty and the students, I want to thank you for a very interesting presentation of this important subject.

(28 July 1958--4, 100) B/msr/bn