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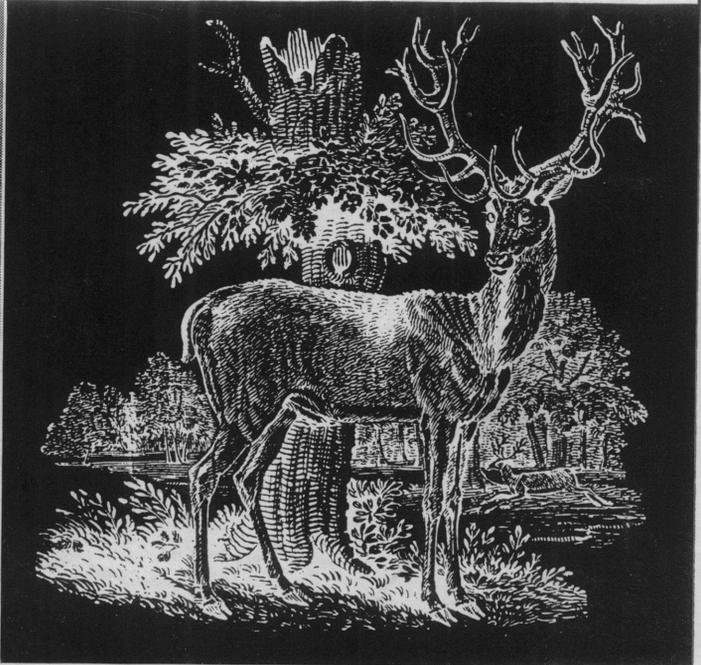
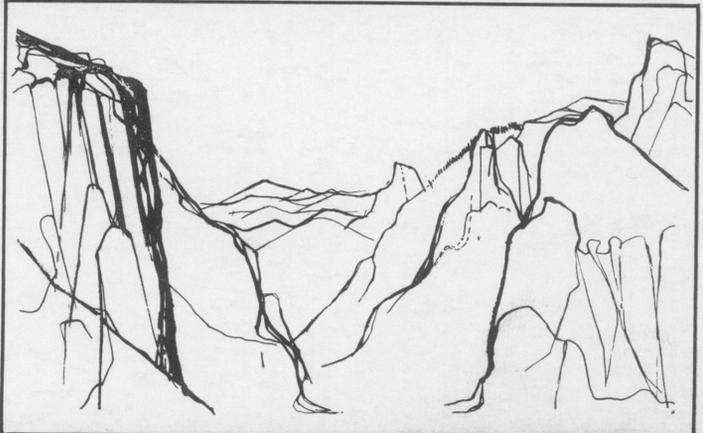
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**the changing  
labor market**

Proceedings



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on

THE CHANGING LABOR MARKET

at

Yosemite National Park  
September 12, 13, 14, and 15, 1956,

presented by:

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Institute of Industrial Relations,  
Graduate Schools of Business Administration,  
University Extension

of the

UNIVERSITY OF CALIFORNIA  
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[Berkeley, 1957]

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Opening Address

September 13, 1956

SCIENCE AND THE LABOR MARKET OF THE FUTURE

Charles L. Critchfield

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SCIENCE AND THE LABOR MARKET OF THE FUTURE

Charles L. Critchfield

As the first speaker, I can claim that the title I have is subject to many interpretations. One of them reminds me of something that happened to Albert Einstein at Princeton. As you probably realize, he was very willing to make a public talk on whatever he happened to be thinking about, but he was very reluctant to talk about anything else, and so he usually turned down invitations to speak. But one group got him to agree to come to a luncheon meeting, which was considered a great success, of course, until he was introduced. Albert got up, looked around, said, "I find I have nothing to say," and sat down.

Now I am sure we can define Science and the Labor Market of the Future in such a way that I wouldn't have a thing to say. But there are a lot of other ways to define it. One pertinent way, of course, is that science has a dictum which it calls the conservation of energy and if it weren't for that dictum there wouldn't be any labor market. Perpetual motion has a really great fascination for all of us, but obviously it will resist realization for a long time to come, which means that we have to use labor partly. If I were a medical scientist I would probably emphasize the bright future in clinical and diagnostic and preventive medicine, and the role it will play in increasing efficiency of the labor market. But my background, as Mr. Ross pointed out, has much more to do with the interpretation I am sure was in the minds of everyone -- that of science, especially the physical sciences, as expressed through technology and its influence on the problems that you are discussing here in these meetings in connection with the employment of people in the future.

There is a multitude of applications for science, of course, and in a great many ways -- in the course of our own life-time -- we have seen so many examples of these that there isn't any great point in dwelling upon

them. The ones that impress me the most are rather obvious and trivial ones. See the earth-moving job that is done now as compared with what was done when I was a boy. Then they had horses with buckets digging cellars and now one machine does what it must have taken 40 of those people to do. That and the work in machine shops and the chemical processing and housekeeping and the bookkeeping and computing are just as impressive as can be, and I suspect are in the center of your thinking here. Although I am not terribly well informed about the present stage of thinking in industrial relationships, I am sure that one could find enough examples of this kind to supply a Senator with a supply of about a week's filibuster. It is an extremely long and impressive list.

These applications which we all understand, represent simply doing something with what we know from scientific observations of the nature of the earth and its properties and materials. They are the contributions made possible by deductions from the basic laws of physics and the discipline of mathematics toward the problem of getting a job done. And these applications rest upon three very important foundations. One, of course, is the demand for such application. We in our lifetime have faced critical demands in the two major wars and the Korean War, when we just had to do something quickly. In the First World War we had to have radios, we had to get trucks built that would go better than the old ones, we had to develop new chemical processes and propellants. You readily see the great boost caused by this simple urgent demand. And then the Second World War, of course, brought on the newer technological developments. In the meantime, however, another source of demand for application appeared; I think perhaps the chemical industry pioneered this. There was a realization that one could produce more by applying science to the chemical processes. The power people and the electrical industry realized that by making their system more automatic and more accessible there would be more use for their product. In addition to immediate critical needs for something to be done there has grown up, and not too surprisingly when you think back on it, an enlargement on the applications of what you had done before.

This seems to be characteristic of the so-called automation of the present time. It has not yet resulted in taking away the work of any body; it has always produced more, and even more need for work to be done. This is a generation of doing things that you never thought could be done. It is very striking in the several instances that I have met in institutions where the question comes up, "Should we get a computing machine?" The natural first reaction is "Well, we do have a few problems which take a long time to do, but if we get the computing machine and it will solve them in a few days then what will we do?" That's a negative reaction, because the next reaction usually is, "If we had a computing machine look what else we could do." We're willing and able to face problems that wouldn't occur to us otherwise and of course that is exactly what has happened. I don't know of anybody who has a computing machine that isn't overloaded -- who hasn't more problems than there is time on the machine for. That is quite different from the first naive expectation.

This same development, I understand, has been characteristic of the replacement of manual labor and repetitive work. Everyplace in which they have been replaced the demand for the additional products that can be produced has exceeded the opportunity and ability to produce them. This part of the subject I am willing to leave to you.

To complete the story there are two other bases for the application of science that I would like to present to you. One of these is the question of how far can we go in technology based on science. In other words, what are the potentialities of nature itself and of science? We have seen so much of what Mr. Ross calls an explosion, a rapidly accelerating application of scientific principles and new possibilities leading to still newer possibilities. This is very evident in the research field, with which I am connected. Every time you make technological advance you open up an opportunity to find something new, something that was impossible before, and this increases by the ordinary laws of organic growth. Capability goes up in a certain factor in a given time and suddenly brings an explosion, or as some people put it, a collision. We are now facing what we might call a collision of the potentialities and applications of the technical and research fields with the economic field. We are moving so rapidly that I'm sure that whatever you decide you want to do about the labor market you can do, from the technical point of view. Capabilities are going up faster than you could possibly use them.

I got side-tracked; my point is that as we master technology, as we apply our science to make better optical equipment or better electrical equipment or better vacua, we open the door to find out more. The things with which we are most familiar in our everyday lives -- with electricity or with automobiles or just general dynamics of things -- are based on physical laws that were known a hundred years ago. Those in turn were based on experiments that were done under ordinary circumstances. These have, however, led to equipment and apparatus that have allowed us to go farther. The question I would like to deal with now is how far can we go.

I'd like to illustrate with a simple example, although it's not particularly related to our theme here. By improving our understanding of the behavior of light, and being capable of extremely fine machine work, we have been able to enlarge the eye so to speak, to make huge telescopes and get information from great distances. We have been accustomed to the earth being a few thousand miles across, but now I am talking about orders of magnitude beyond that: namely, the astronomical, universal distances. And in enlarging our power in this direction we have come to what we consider to be an understanding of the nature of the universe in relation to the interaction of the bodies with each other, of gravitational forces between bodies and their expression in the large. That has led to the theory which is Einstein's general theory of relativity, on the basis of which we believe we understand the physics of gravitational action.

The capabilities that we have gained from advanced technology in the laboratory that are of more immediate interest are those that go into the microscopic world rather than into the universe; the ability to break

down matter and understand its components. This started with the discovery of the electron, which couldn't be done without high vacua and an understanding of electrostatic interaction. A great deal was done with that. Then the spectra of materials were studied and gradually we built up a way of understanding the physics of very tiny bodies, the atomic particles. This has evidenced itself in two ways. Very slow bodies -- slow in comparison with the velocity of light -- led us to the ordinary quantum theory of physics and this, as you probably know from your background studies, was an immense revelation to the scientific world and to the philosophical world. Here we became positive that the world is not the way we were brought up to think it is. It made us face the fact that what we were accustomed to believe and the concepts we had formed about motions of bodies had to be changed.

It is through the understanding of this world that we are led into a great number of very useful and practical and important tools and instruments and machinery for the present day. There is a great deal of analytical work in industry that is based directly upon their findings and this understanding. A lot of the industrial work depends upon a thorough understanding of electron physics. The present advances in electronics, and the understanding of alloys and so-called supermetals, come right back to the law of atomic physics, the quantum theory. Actually, people don't have a complete picture. They know that this peculiar dynamics, coupled with certain symmetry properties of the particles which we don't experience in ordinary life, plays the dominant role, but that is not sufficient in order to make an application; it takes further inquiry and understanding of detail to go into the application and make some use of it. Finally, the understanding of nuclear processes and all of our developments in the past years in nuclear energy is another aspect of quantum theory. In order to understand sufficiently to make further application we have to live in this very tiny world.

Now the question I meant to raise at the outset is, where does this stop? The quantum theory gives us an absolute scale of measurement of the dimension of angular momentum. Before the beginning of this century the physicists were very puzzled about what they were discovering. They had the laws of electro-magnetism and the laws of dynamics and these laws were independent of any scale size. And this worried them a great deal; philosophically it is a terrible thought. In fact a number of such people developed interests in spiritualism as an escape from this conviction. Well, physics provided that escape. It sets an absolute standard for our understanding of at least the microscopic world. In the same way, Einstein proposed in his special theory of relativity that there is an absolute measure of velocity; no body can move relative to any observer whatsoever with a velocity larger than the velocity of light, and the velocity of light is always the same. Now this was a concept that goes beyond our everyday concepts, but it gives us another absolute reference. All of our physical thinking is based on three major quantities: mass, length, and time. If we had another absolute reference we'd be through. Maybe the science of the microscopic world will be completed in this sense. Some very eminent scientists have made that proposal. Once

we understand what is the rationale of the absolute reference point in that third dimension we can forget about science in the microscopic world.

At present what is actually going on in this, I might add, is that the so-called modern physics is concentrated on very high energy collisions between atomic particles. It's an area in which the quantum mechanical aspect is not particularly important. Let us assume that two protons are accelerated at extremely high energies and allowed to collide. Presumably this would tell us something about their structure or about what happens when they come close together. What actually happens is very puzzling: a large number of other particles is created. These particles are radioactive and distribute their energies in cascades and into other forms. This essentially denies the experimenter the information that he was looking for in the first place. This may be fundamental and it may be a clue to the physics of very small distances. We might have to modify our ordinary concepts of distance in order to account for these and find the mathematical expression for it and then we would have the three physical dimensions -- by dimensions here I mean, of course, independent physical quantities -- and then we would have completed our study.

Well, not everybody believes this theory. The only thing that one could foresee out of a further understanding of this kind is possibly the complete conversion of matter into energy. The present method associated with the fission of an uranium nucleus converts stored energy by breaking up the nucleus but it keeps the number of particles the same. You get that stored energy in the same way you do from explosives in the chemical sense.

In the fusion process, which is in laboratory stage now, you gain only what you get in the release of energy by combination into more complex nuclei. Maybe when we can thoroughly understand these particles we can just eliminate the protons and electrons at the same time (so that we don't eliminate any electrical charge) and get all of the energy. You can't go farther than that. That would be about a thousand times what we get now per gram of material. Even if we don't have that, the potentiality of getting energy from deuterium is a very real one, I'd say, and in a couple of decades we'll be seeing how to do that.

The immediate problem of getting energy out of uranium rather than fossil fuel is so real I think nobody has to be convinced about it. The sooner it comes about the better, because I think we are going to need the carbon in the earth for other things than burning. If you burn it and send it up into the atmosphere it's hard to get back. We'll be needing it for synthesis, of course, and for making plastics and perhaps even food in the future.

Well, that's a lot of the future. One can't predict what's going to happen, but my theory is that there is an end in sight for what the laboratory scientists can find out. On the other hand, not everyone believes this. Suppose you solve the problems of the dimensions and you have a firm

reference system in the microscopic world; you have more problems. There will be, in the future, I think, a big era of dimensionless physics about which nobody can predict. What can happen on the other side of our experience is that instead of continuing in the small world we can go back to a large one, which we in aircraft are preparing to do now to get vehicles out into space. What the relations are between that and the small world I don't have any ideas. If there is any comfort in it, I would say that the large world's ability to contribute to technical problems or industrial problems very likely is limited.

The number of applications and the resourcefulness of the people to make them, of course, probably is unlimited by any ordinary standards that we have. In other words, we haven't begun to use what we already know. The application of atomic energy, particularly, has lagged since the war through the confusion with military security and all the government authority which has changed heads a couple of times. It certainly is lagging in comparison with the freer applications of electronics, for example, where we have computing machines developed in that period to a very remarkable degree.

The third basis for applications of scientific knowledge, I would say, is the availability of trained people and their proper utilization. This is a responsibility in the company that comes to me to a certain extent because of my past association with the academic world. What do we mean by trained people? What are their qualifications? What is their supply? What's happening to them? How do we handle them? For purposes of discussion I would like to say that I am talking about men with understanding of scientific principles, men whose motives are either to find out more about them or to use them in technology.

These men we can divide into two categories, roughly; either academic or engineers. By academic I mean that they are the type that want to know why things are the way they are and what are their interrelationships. The engineers are the men with the same background, the same aptitude, except that they want to know what they can do with it, how to make something go, or what combination of knowledge will be new and useful. Each of these can possibly be broken down for ease of reference.

Among the academic people you find two distinct types. There is the smaller group which you might call the "super-academic" type, the kind of man who will say, "Yes, it's very interesting that certain crystals will rectify a current; after all it must be some combination of quantum theory and the laws of electricity. These things are known; therefore the problem is of no interest." This is the type of man that says anything that is known in principle is of no interest. He'll go on and look for new particles and when he completes that, he'll go into biology or psychology or something else that he considers to be unknown in principle. Actually, since the war, the universities have been strong in this area because of funds from the government. The research people have been encouraged to get into nuclear physics, to build huge accelerators that will give us the tools to get farther and farther away from

our experience, and there has been a big emphasis in this area, although not all the people active in it have this particular motivation.

The other branch of the academic type is a man who wants to know in detail what is known in principle; he wants to know in detail how a crystal rectifies the current; he wants to know just what's going on. In my estimation the universities have not provided sufficient opportunities for people with this aptitude. On the other hand it is the one of greatest interest to industry, because this is the kind of research man you want to have around to help you with the technical problems that you run into, say in engineering. If you have to use a new material or a new system there's no substitute for understanding what is going on. You want men around whose interests are in that direction. Some universities have provided sizable physics and chemistry departments, usually closely allied with the engineering department, with this in mind. In some universities the engineering departments have insisted upon such relationships and expanded, but by and large I would say in this country we have not provided enough opportunities for people in this area.

I want to come back to that but I also want to divide up the engineers in two categories. These categories are more related to the types of products with which they are concerned than they are with differences among companies. To learn how to build dams, you study what has been done in the past and then you can go out and get a job building dams. You don't have to know too much about fundamentals of the chemistry of concrete or geology or anything of that sort; you only need know what's necessary. This some people call the "hand-book engineer." But in the more advanced technologies with which we are concerned -- and aircraft is certainly one of them, as are electronics and nucleonics -- you can't ever stop learning. Not only that, but you can't rely primarily upon routine or handbook information. One needs a great deal of basic information. As you realize, most of our leading universities emphasize that in engineering training. They require their engineers to get basic courses, they keep them in school for five years, they encourage them to stay in school and do research work, take graduate work, in order to get an appreciation of this point of view and to know what research work is. These are the men who work, then, from basic information. The good people who have been hired and trained since the last war come into this category. We certainly rely heavily on them in the aircraft industry.

The man with engineering aptitude who uses his basic knowledge primarily in putting it into effect, and the academic type who isn't particularly interested in building something or making it go but who wants to know how things work even though the principles are known, are the two main categories in this drive toward the supplanting of men by machines -- or as I rather like to look at it, the opening up of new possibilities to do things and therefore new opportunities for men and new levels of interest and satisfaction for the individual. These men are of the greatest interest to us.

The question then arises what we should do about it. It occurs to me that we should reorient the management of such people in ways that will give them more professional recognition, give them more comprehension of their problems, give them more opportunities for advancement in technical fields so they don't have to get out of the activities which give them their personal satisfactions. Otherwise they will get into things that they don't like too well, perhaps, such as administration or management, where presumably the higher salaries exist. In other words, if you had an Einstein in your company, you wouldn't want to have to make him a supervisor and then a division manager of some sort in order to reward him. At present a lot of companies are doing this. I think that it is worth the while of the industry of this country to see if they are using the people they have as effectively as they should be used in the light of their special interest and training. This was just a thought added to the usual thought one hears about our not having enough such people. How do we train them? How do we find them in the schools and get them to go into the professional, technical field?

And that leads me to the other point about our responsibilities in this connection, which is related to the remark I made about universities not supplying enough opportunities for careers for the type of man who just wants to know how things work. And in this connection I propose that the proper thing for industry to do is to offer such careers in industry. In fact we are doing that at Convair. We're setting up and offering full time careers of that kind, and we're setting up in a way to allow our technical people, if they have the desire, to inquire further into physical phenomenon, to figure out basic explanations, even if that is of no direct interest to their department. We are providing ways to support him financially and give him some leadership and allow him to make connections with the outside professional fields.

The only controversial part about this seems to be the proposal that industry offer opportunities for academic research. This has met resistance. You're taking away our good research people, they'll say. Now I presume I don't have to defend it here, but I'd like to. My attitude about this is pretty much the same as what has turned out to be the case in connection with automation. Automation takes away jobs, they say. What has happened is that it provides much greater opportunities. I believe that if industry provides careers for research people, more graduates from the universities will go into the technical field rather than to be diverted into commercial or individual enterprise field where the future looks brighter to them at the moment, and the universities will have a much bigger job in training these people. After all, industry isn't going to train the people; it's going to give them job opportunities afterwards. These job opportunities are similar to those in the universities except for the lack of teaching, and the teaching responsibilities would be replaced by their responsibilities to the people in the applied field. That is, they would act as advisors and consultants to the engineers and to the manufacturing people. That will simply add to the strength of the scientific manpower of this country. I think it's probably the only answer we have to the bugaboo that's raised time and again about our position

relative to the Russian economy, where industry, of course, doesn't exist in our sense. It's not competitive. But the government does provide these opportunities. It also provides much greater funds for the universities to carry out their training programs. They have whole universities devoted to these areas that I mentioned as being fairly unpopular in our universities. I think it's the right answer. I am going to back it against the objections that I get from academic circles and am doing so in our company.

These are the two major bases for application that I feel qualified to talk about. Where is academic science going, where's it heading? And what possible solutions are there for our technically trained people? I have emphasized, I hope, those things that you don't hear very often, leaving the more obvious things to your background and to your imagination. I have tried to be careful not to walk around in pastures where I don't know all the holes, and get myself trapped.

There is another point, however, in a somewhat philosophical vein, which may have something to do with your interest. The applications of science have obviously a lot to do with the alleviation of drudgery in men's lives, with providing opportunities to do more what they want to do. On the other hand it has a lot to do with the provision of diversion, distraction, ways to use idle time, all the things that keep people in a good, sound mental frame of mind while they are idle. It seems to me that the satisfaction that a man dedicated to physical science gets out of the reality of science, the support that he gets from other people who understand it, must be transferred into other fields so that science can provide for the social stability, for the personal stability, of the people who on one hand have been relieved of drudgery and on the other hand are merely being diverted. Can they get the same kind of satisfaction out of this as a man who is deeply involved in the technical field? I don't mean to say that all long-haired scientists are socially well adjusted or anything of that sort, of course. But it's undeniable that there are elements of social stability to which science doesn't contribute much right now. But perhaps it will. Then science and industrial relations will be much closer to one another.

THE CHANGING LABOR MARKET

William Haber

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THE CHANGING LABOR MARKET

William Haber

I have been speculating a good deal about what to include and what to exclude in a topic called The Changing Labor Market. It is certainly no news to anyone in this room that there have been many changes. All around you there is overwhelming evidence of change. And I suspect many of you, who are administrators in industry in a line or a staff job, have the sort of attitude toward some of these changes that someone I know has to political changes. He said, "I've been around a long time and I've seen a great number of changes and I've been against every one of them."

That there have been changes should not be surprising to anyone working in industry or labor relations today. When we consider the characteristics of our economy it would be startling if there were no major changes in the labor market. We have built an economy creating a national product of over 400 billion dollars. We have had full employment for nearly 15 years, starting in 1941 -- one of the longest periods of full employment, or nearly full employment, in modern American history. We have had a really overwhelming development of economic institutions which influence the labor market and its characteristics.

✓ One need but mention three or four of these institutions. The labor movement has developed practically within this period. While it goes back 100 years or more, it's only in the past 15 or 20 years that we have seen the development of a strong labor organization in this country which now boasts of 17 or 18 million members. Collective bargaining, as a process which determines the basic elements of the labor contract, has spread rapidly during this period. We have developed an elaborate private social security system, with many fringe benefits and its recent addition of Supplemental Unemployment Benefits. Over 12 million people participate in this private social security system, covering supplemental payments to workmen's compensation, unemployment insurance,

medical benefits, pensions, vacations with pay, and holidays with pay, among other benefits. The size of these private plans is suggested by the fact that the reserve funds to underwrite the private old age pension program and the welfare fund programs exceed 22 billion dollars, as large as the fund for the public OASI system in the United States.

It would be surprising indeed if these developments and all of their manifestations had not influenced the labor market and affected it very materially. We've also had a rapid growth in population, particularly since 1940, and this has obvious implications for the potential growth of the labor force. We've had a steady decline in hours of labor, some of this since 1940, but much of it since 1910 and 1920. Because of that decline, participation in the labor force has become much more attractive to female workers who would ordinarily not be attracted to industry. With the seven-hour day, which might be in the offing soon, or a four-day week, which others have suggested as not being too far away, women workers would enter the labor force in greater numbers. And then we have had what Arthur Ross referred to last night and this morning as a technological explosion, or its more modest definition, automation. These are obvious developments, familiar to every one of us. It is inevitable that the labor market and the work force will be influenced by some or all of these factors.

Some of these influences can be identified; not all of them can be discussed. But the more striking and significant aspects should not be avoided. I recognize that someone else making this presentation might choose to emphasize items that I will say little about. We all tend to pick the things which appear to us most important. Fortunately in a conference of this kind where there are work sessions and opportunities for questions those factors which I understate or overstate can easily be straightened out before the conference is over.

Inevitably what I have to say has a great deal to do with statistical material. And as you know it's dry. Nothing is dryer than statistics. But we are really talking about people and it is important to keep in mind when we talk about the millions and percentages and trends that we are talking about human beings and the American population.

The dramatic changes in the American population will have a large influence upon the American labor market. For a long time we had a rather steady but slow growth of population; in fact it grew so slowly that many economists were led to develop the idea of economic maturity. Some even wrote about the theory of stagnation, on the assumption that the country had grown up, that it had reached its population peak and therefore growth, and that the creation of investment capital would be at a much slower rate than heretofore. Unless something radical were done, we would be in trouble. Well, radical changes did take place in population developments and all I need to do, since the workbook has the tables, is to call attention to three or four figures.

Between 1940 and 1950 we've added 20 million people to our population -- in just a decade. We can look at this figure in purely materialistic terms, if you wish, as mouths to feed, people for whom houses have to be built, potential marriages to be consummated, potential children to be born -- all of these flowing from the gain of 20 million people from 1940 to 1950.

Now from 1950 to 1956, the most recent years, we gained another 14 million. Thirty-four million people have been added in 16 years to the American population. In 1965 -- only nine years from now -- the population experts tell us we will have 190 million people in the United States, 25 million more than today. That's only ten years away, with a greater rate of increase than in the ten years 1940 to 1950.

And since we are dealing with long-range institutional factors let's refer to 1975; that's only the day after tomorrow, so to speak, 19 years from now. We can all look back 19 years and see how quickly they went by. The American population, it is estimated, will be 222 million in 1975. The factors responsible for that are complex and need not be enlarged upon, but they include a dramatic increase in the birth rate, a decline in the death rate, fundamental changes in the nature of our community and the nature of our society.

Now whether these estimates are correct or not depends upon the assumptions one makes. One of these assumptions is that we shall continue to have a high level of economic activity. If that level of economic activity were to be radically changed by 1960 or by 1975 it would affect these estimates. It is safe to conclude, however, that we've grown to dislike business depressions so intensely that we are not going to permit them to take place, even though no law has been passed abolishing supply and demand.

So dramatic a change in the size of the American population will have an impact upon the character of the labor market and will produce significant changes within it. But another factor in the population trend is even more significant than its numerical size. I refer to the age distribution of this population.

Let me start first with the people over 65 -- the older age group to which Sumner Slichter refers as "the most important economic problem of America." The group in the age category of over 65 will increase in the next 19 years by 70%, so that by 1965 we will have 17 million people in the age category of 65 or over; by 1975, 21 million people. This is to be compared with 14 million people today. In 1940 only nine million people were over 65, now 14 million, soon 17, then 21, all in the period from 1940 to 1975. That wouldn't bother us if these people kept on working. But they don't keep working, as we know. At 65 men have a life expectancy of some 13 years. Therefore, we have an overwhelming economic and political problem: what shall we do with our idle senior citizens?

The second fact of age distribution which is important to us is that in the group between 45 and 65 -- and there is the core of the labor force, the mature workers, if I can use that term rather than the "older worker" -- in this group by 1965 we shall have a very large increase: six million in the next nine years. This has serious implications for hiring-age limits, for layoffs, and for retraining and guidance.

The age group of 20 to 44 years remains practically stable, with an increase of only two million. That is the result of the baby famine in the 1930's. After 1965 this distribution will improve as a result of the baby boom of the 1940's.

The largest increase will be in the youth group of 14 to 19: a very substantial increase with large implications for public education, for school outlays, for demands for teachers, and education expenditures in general.

What will happen to the labor force itself when these population changes get under way? It does not take much statistical analysis to see how the population growth and the age distribution of the population will affect the work force of our society. It depends primarily upon what the labor force statistician calls the "rate of labor force participation." We've had a pretty stable rate up to now. Roughly about 55% of our population over age 14 has been engaged in the labor force -- that's to say, works for a living, whether he is the head of scientific research at Convair or a professor at the university or a ditch digger for the highway department. It takes in all segments of our society, from the lowliest skill to the most highly scientific. Recent analyses suggest a perceptible increase in the percentage rate of labor force participation. In 1940, for example, 55.5% of the population over 14 participated in the labor force. In 1950 the rate was 56.8%. In 1965 it is estimated that 57% will participate; the estimate for 1975 is 58%. These increasing percentages suggest a greater propensity to participate in remunerative employment than used to be the case. In time of war or other national emergency those rates of labor force participation would increase rapidly. When normal, peaceful times return they tend to go down again. The younger folks tend to remain in school, they are encouraged to finish college and to do graduate work. Women tend to stay at home and take care of their families. On the other hand, if atomic energy and automation should by 1975 become widespread in our economy, making possible a reduction in hours of labor from the average of 41 per week now to 35 per week, and by 1990 making the four-day week possible, there would be a tremendous effect upon the rate of labor force participation. With household duties easily disposed of on a shorter workday, more women could participate in the work force.

In any event, relying upon our past experience when we have had about 56 to 57% of labor force participation, our present labor force of 68 million will increase by 1965 to 77 million; in 1975 it is estimated to be 90 million. Only a decade ago a book created quite a controversy in the field of public policy. It was entitled Sixty Million Jobs and was written by a man whose name has completely disappeared from the public view: Henry Wallace. That book led to considerable skepticism about whether it was realistic to anticipate an economy with that many jobs. In 1965 -- only a short time from now -- 77 million Americans will be in the work force. In 1975, less than 20 years from now, there will be 90 million.

Now it is very important that we recognize the implications of such labor force growth. It means that we shall have to create nearly a million new jobs each year if the present relationship of employment and unemployment is not to be changed.

What are the implications of these three statistical items -- population growth, age distribution, labor force growth -- upon the labor market itself? Here one can range over a dozen topics. I have selected three or four to discuss briefly.

First let me enlarge somewhat upon my reference to employment policy for the aged. I don't like the word "aged", because I am considering two categories. I am thinking of the group 45 to 64, and 65 beyond. By 1965, your workbook tells you, one-third of our labor force -- 25 million people -- will be in the 45 to 64 year age category. And by 1975, ten million more will be added to that category. If we had no labor force displacement, if a person on a job stayed on that job and retired from that job, we'd have no serious problem. But we know that's not the kind of an economy we have. It's a dynamic society. It's constantly changing. It is fortunately characterized by steady growth.

Growth means growing up but not at a uniform rate. That applies to every segment of our society, every industry, every plant, every region. Some go down while others go up. The national curve is an upward moving curve, but within that curve are hundreds of downward moving curves, and millions of people being dropped while the general level of employment is moving up. Hiring limits, insofar as they exist in industry, would not be significant if there were no turnover, if there were no layoffs, no quits, no discharges. But hiring limits over age 45 become very significant when 35 million of our people by 1975 will be in that age category. In our dynamic society millions of these wage and salary earners will drop out of their jobs, not with two or four or six week layoffs, but with permanent separations. Graying hair may mean that it's harder to come back to another job. There is a good article in your work-book by McConnell on factors which deter hiring older workers, mature workers. This problem is one of the important challenges imposed upon American industrial management, and employment managers particularly -- it's a top policy problem in industry. We should take a pretty objective look at what is involved in any kind of restricted practice when it comes to hiring-age-limits for more mature workers. This problem is especially important because of the technological explosion to which Arthur Ross referred.

While I completely agree with Dr. Critchfield that the technological explosion is likely to increase skills -- and I shall say something about that -- and also increase the number of jobs, it would be naive and quite superficial to assume that it will not simultaneously create displacement for millions of workers over the next 10 or 15 years. Once they are displaced because of a technological change unless we hire them for a different job or retrain them within the plant, hiring limits can create a very serious island of unemployment within that age category. That aspect of the labor market is one that merits the most serious and studious attention of government and industry and labor and the experts working with them.

The problem of the over 65 year group is in another category. This also has overwhelming labor market implications. I've referred to the figures, the increase from 14 million to 21 million in a period of about 20 years. We will have the problem of supporting most of these people. It is sobering to think that in 1975 we will have over 20 million people not working, because they are over 65, and being supported by those who are working. Some may suggest that we are not supporting them; they paid social security taxes and a large reserve has been built up for just this purpose. That is true only in a technical sense. Actually, however, this money that the aged have saved during all these years isn't kept in a bushel basket in the basement of the Treasury, to be paid to them in 1975. The food they are going to eat in 1975 will probably be raised in 1975, the clothes they will wear we will produce in 1975, the medical care they will get the doctors of 1975 will provide. What I am trying to suggest is that we don't save up the physical goods and the personal services for their use when they retire. These are produced in the years they are used. To be sure, we pass out a lot of coupons which create a legal claim to those products. But those products must be produced. And it raises a very proper question. Do we want to develop a society in which 170 million people work to support themselves as well as the more than 20 million people who aren't working? I seriously question it. And I think it presents one of the most important challenges to our society.

This is more than a management problem. This is a problem of the whole community; it's the problem of retirement policy. It certainly suggests to me

a very definite caution about compulsory retirement at a particular age. I might qualify that with respect to executives. Maybe they ought to be pushed out at age 65 or 62, for there you have a problem of a limited number of key jobs in the upper echelon. Vacancies must be created to move up other people.

But when we come to the general labor force, we encounter a very proper question as to the wisdom of compulsory retirement or of any kind of inducements that push people out. I recognize the technological problems, the productivity problems, the accident problems, the insurance problems -- all referred to in the McConnell paper. Professor Slichter at one time suggested that we ought to revise our tax laws to give each employer who employs people over 65 a tax rebate -- say \$500 a year -- for every person in that age group, on the ground that if he is laid off it would cost about \$1200 to support him from Social Security funds. He would then remain a producer. That is not a simple problem, of course. For many, the jobs will have to be tailor-made; and the attitude of management to the use of older people will need a careful appraisal. A professor can contribute relatively little to a solution, but I predict that it will be one of the major problems with which industrial management will have to grapple if our community problems are not to become even more difficult.

Perhaps we ought to re-examine our Old Age and Survivors' Insurance law. We began in 1935 by saying that one could not earn more than \$30 a month and still get his retirement benefit. This was later changed to \$75 per month and it is now to \$1200 a year. Perhaps we should take a fresh look at the whole question of a retirement test. Perhaps there should be a higher or more flexible figure to induce people to stay in the labor market without being penalized in the loss of their pension.

There have also been important developments concerning women in the labor force. In the 1950 census for the first time -- remember the first census was undertaken in 1790 -- there isn't a single occupation in which women are not included. They compose two-thirds of our clerical force, one-third of our selling force, and 32% of the entire labor force; and that percentage will be increasing. I don't have to explain the reasons for this development. You may have seen an excellent article by Daniel Bell in Fortune a few months ago, which explains this large increase in the number of women workers. The increase in the proportion of married women in the labor force is particularly startling: one out of three. And particularly significant are figures for the age category 35-44: by 1975, 50% of the women in that age category, it is estimated, will be in the labor force. These estimates do not take into account the possible effect which a further reduction of hours of work is likely to have upon the number of women who seek gainful jobs. ✓

What sort of changes have been taking place in the labor force with respect to occupations and skills? There is some suggestive material on industrial and occupational shifts in your workbooks. Obviously, inventions have radically affected the occupational distribution of the American labor force. Contrary to what most people expected, the result has not been "deskillification." The opposite appears to be taking place. During the earlier period of technological change and the adoption of mechanical methods there was a dilution of skills. Then skilled workers became semi-skilled workers and semi-skilled workers became machine operators. Later technological changes appear to have had the opposite effect. Recent studies suggest that we now have a larger proportion of semi-skilled workers in the labor force than we had 40 years ago, or even 20 years ago. We also have a far greater proportion of professional workers and technical workers. The common labor group,

the unskilled group, has been declining in proportion almost steadily for 40 years, partly because of the declining labor force in agriculture. Mechanization has brought with it techniques and equipment of a complex character requiring more than the merely manual skill. In fact, it is suggested by many engineers and others that automation will also lead to an increase in skill requirements. We are likely to experience a shortage of people with maintenance, repair, and operation skills which automation will require. A Bureau of Labor Statistics study of what happened to several firms which introduced automation, and how it affected the skills of the work force bears out this analysis. In brief, "deskillification" is not the real danger. In fact, the problem is more likely to be whether we can adjust and retrain and raise the technical levels of our work force enough to operate automatic factories.

Another labor market change concerns the shift from the production of goods to the production of services. What has taken place is a phenomenal increase in the number of people in our society who make their living by providing services. This has been accompanied by a decrease in the number of people who make their living producing things. Agriculture is perhaps the outstanding illustration of the decline in the number of producers of goods, but it's not the only one. For example, in manufacturing, where there has been tremendous boom in the production of goods, we only have about two more million people in manufacturing than we had 20 years ago. We have produced this unbelievable volume of goods with practically the same work force.

These trends are bound to continue and they have important implications about the kinds of occupations which are likely to expand. For example, I was looking at some figures, referred to by Dr. Critchfield this morning, about engineers. The number of engineers in the United States has doubled in ten years, from 1940 to 1950. The unfortunate thing from the viewpoint of engineering needs is that a very large number of them are not in engineering. They are administering, they're selling, they're managing, they are attracted to other positions than those for which their engineering training prepared them.

The number of social workers has increased from 5,000 to 90,000 in thirty years. The number of persons in library science has grown from 5,000 to 80,000 in twenty-five years. Those who expect a decrease in the number of employees working for the government fail to realize that the size of government staffs is not primarily a political problem. The government provides services and service activities are expanding; this is true of public health, social security, agricultural extension, and medical research. We are witnessing a tremendous transformation in the occupational distribution of the American work force.

The effects of automation are not likely to be in the direction of a large decrease in skill requirements. It will, however, greatly increase the problems of adjustment. Fortunately, in my view, automation is not likely to be as widely applied as many expect. Its potential has been greatly exaggerated. There are many sectors of our industry which are likely to remain immune to it. It's expensive and most small businesses will not be able to use it; many establishments depending upon fashion and style will not find it practicable. But the areas which will be most subject to automation, those which are most vulnerable, are those employing clerical workers and unskilled workers. This group represents about 42% of the labor force. Clerical workers, accounting staffs, the sales force -- these groups will be most affected by automation.

There can be no dispute with the conclusion that technological change in the long run is good for society and good for the workers. The unfortunate thing is that it is not always good for the individual worker involved. There's a difference between the long-run and the short-run of technological change. As an economist I look at the long-run. For a wage earner the long-run is composed of three short-runs and they consist of three meals a day. And from that point of view, displacement is a very important problem.

It is significant to note that probably for the first time in our history a technological revolution, automation, is referred to in most favorable terms by everybody -- including Walter Reuther and other leaders of the organized labor movement. Most persons who appeared before the Congressional Committee holding hearings on automation -- men representing management, labor, science, universities -- have invariably approved of this development. This in itself is most significant; it represents an important change in the mental attitude of labor toward productivity. Union leaders realize now that we cannot raise standards of living by bargaining alone. They recognize that productivity must improve if higher living standards are to be achieved. But while this point of view has not yet sifted down to the rank and file of labor, it is significant that it is widely held by labor leadership. In time economic literacy will increase and this will have an important bearing upon the growth of our nation.

Automation and other technological changes which will increase the need for more highly skilled people has an important bearing upon education. Twenty-five years from now young boys and girls who work in industry but who haven't graduated from high school will be a minority group. Industry will have to fashion education courses to bring them up to the normal standards. We are familiar with the tremendous expansion in high school education which has already taken place. In 1910 only nine per cent of our labor force graduated from high school; in 1940, 48% of our labor force were so graduated; in 1955, the figure was 58%; in 1975 it will be close to 80%. And it is important that educational levels should rise.

The underlying factor for most of these changes is the strength and the growth of our economy. I have already indicated that we now have created an unprecedented kind of prosperity in our country. It is based upon the consumer and upon mass consumption. Our recent good times have correctly been called "consumer prosperity." It is based also on a totally new position of the American wage earner. The old term we used to use, "the laboring classes," doesn't apply any more. These "laboring classes" earn \$5600 a year, when we consider family income. Never before has the gap between subsistence and income for the overwhelming majority of wage earners been as great as it is today. In income and in attitude, the average American wage earner, organized or unorganized, considers himself as a member of the lower middle class. The "middle-class mentality" is interested not only in size of income but continuity of income. That's the heart of the fringe benefit issue: vacations with pay and holidays with pay, sickness wage loss and now unemployment wage loss are covered. The continuity of purchasing power represents an important and relatively new aspect of the American labor market. The entire business community is interested in this development, because our prosperity is largely based upon continuity of consumer buying.

Dinner Address

September 14, 1956

BEYOND MATURE COLLECTIVE BARGAINING

Clinton S. Golden

Sometime      Regional Director, Steel Workers'  
Organizing Committee

Vice President, United Steelworkers  
of America

Executive Director, Trade Union  
Program, Graduate School of  
Business Administration, Harvard  
University, Boston

BEYOND MATURE COLLECTIVE BARGAINING

Clinton S. Golden

When Mr. Miller invited me to speak, I asked him what he wanted me to talk about. His reply was not very specific; he was willing for me to decide. I advised him that I was concerned about what seemed to be a growing amount of complacency among both management and labor people about their relationships. I said that it was my impression that here on the West Coast, particularly in the San Francisco area, employers had faced up rather more courageously and realistically to the problems that are created by the emergence of unions, at an earlier period than had been the case with most of the employers in the East. Employers on the Coast have got over a good many of the hurdles that I think a great many of the employers in the East have not as yet surmounted.

But I did say -- whether it applies to this region or not I do not know -- that in the East it seems to me that unions have attained a sort of a status of legitimacy, a good deal of institutional security, and probably, in a growing number of instances, a reasonably peaceful relationship with employers. They appear disposed, under the circumstances, to fold their hands and say, "We've done pretty well, the organization is secure, we have fairly good treasuries and fairly good relations, and we've sort of reached the end of the road. There isn't much of any place to go from here." Employers, on the other hand, after a good deal of initial resistance to the encroachments by unions upon the domain that they thought exclusively their own, having undergone a great deal of pain and travail in the process of getting used to dealing with unions, have reached the point where they aren't having too much trouble. They are disposed to say, "Well, we have survived it thus far and, thank God, the conflicts and strife are largely behind us; you can't really expect much more than this."

I recall a very interesting situation that arose when the National Planning Association was undertaking its studies on the causes of industrial peace. The Association told as many people as they could about the undertaking and invited nominations of the companies that were thought to have good relations. Well, they didn't quite anticipate that something over a thousand companies would be named, either by public-spirited citizens or by unions. They had quite a task to select those to study on the funds available. One of the companies had had a record of very turbulent labor relations, but something had happened -- we were not clear what -- and the relationships had improved. Curiously enough, the suggestion that this company should be studied came from the union that represented the employees. (The union had boasted, in years gone by, of having had the longest picket line in the world -- 11 miles long.) Of course, carrying on the study necessitated having the full and voluntary cooperation of management and the union with the researchers and observers, in getting the information available that was needed. When the researchers asked for cooperation they met a great reluctance on the part of the company. A Massachusetts Institute of Technology professor was asked to have a talk with company officials. Something very interesting happened that illustrates the point I am trying to make. It seemed that management was quite pleased with the nature of the climate of the then existing relations. In fact they were so pleased that they feared that if a study were made it might possibly upset the relationship! The matter had finally been referred to the Board of Directors, which split 50-50 on the advisability of having a study conducted. They were so well satisfied that they didn't want anybody to know very much about how they came to be satisfied.

There are probably a good many of these situations. Somehow, two presumably antagonistic interests have been brought into some sort of an uneasy equilibrium. No one is too confident about how long it will last, and that's about as much as they think can be expected.

I think that's a very dangerous state of mind for people to get into, particularly in the free society we think we have and in the face of certain world developments that are taking place. I believe that unions undergo a sort of evolution. I think initially it can be said that they emerge primarily as instruments of protest against conditions that are felt to be unacceptable: wages, conditions of employment, etc. If they succeed in becoming established they then evolve into an agency of representation instead of being an instrumentality of protest having a negative or more or less irresponsible sort of an attitude. At that point they are obliged to take a positive and affirmative attitude and, if they are to succeed, must assume certain responsibilities that they were not prepared to accept in an earlier stage of their evolution. Now, as agencies of representation, particularly in the last 20 years and with the legitimacy that they have achieved through the National Labor Relations Act, they have done, I think, a pretty good job making a lot of adjustments. But to assume that from this point on, when they have established a mature collective bargaining relationship, that they have about reached the end of the road, is a very great error.

Of course there have been, I think, in all periods in the evolution of human societies, people who deviated from generally established customs and blazed new trails. I like to call those people who do that sort of

thing "the innovators," and I think they are the people who make very large contributions to human progress. In the field of industrial relations there are some innovators who haven't been content to just have an uneasy sort of an equilibrium or an armistice between the wars. They have tried to look ahead and see what could be done to develop a more creative, constructive, and satisfying type of a relationship. I think it is from the experiences of these people, these innovators, these deviators from customary practice, that there is much to learn that will be of great value in preparing for the future. There are both external and internal influences at work that necessitate much more of an effort to look toward the future.

In the international scene, because of lack of available factual information regarding industrial development in Communist Russia and in some of the satellite countries, we have been inclined to discount the progress that has actually been made in developing industry. When we observe that their steel output amounted to only 12 million tons in 1945, then 45 million tons in 1955, and with some expectation that in another decade it may equal our own, we can see that they are making a good deal more progress in industrialization than a great many people in this country thought they were. I think we are likely to find that the Cold War may, in the months and years ahead, take the form of a much more serious economic competition from the Russian-dominated countries than we have had to contend with thus far. I think that the whole process of totalitarian versus democratic decision-making is going to be subjected to some very rigorous tests in the course of this probably continuing economic competition.

In the home scene new developments and technology particularly necessitate a greater degree of cooperation between the organized workers and their employers. It seems to me, therefore, that certain external influences and certain domestic elements and factors that are evolving point to the need of going beyond this concept of an uneasy equilibrium in union-management relations. There is need to explore more fruitfully and carefully the possibility of people working together more understandingly and cooperatively than has generally been the case in the past.

Of course, the unions are burdened with some traditions, even in our country. They are not burdened with nearly as many as they are in some of the older Western European societies, but they are burdened with a good many that inhibit them from looking very carefully into the future. Let me give you an illustration.

The chairman made reference to my identification with the founding of the Steelworkers' Union back in 1936. It's an interesting fact that the people who first responded to the appeal to join the union in the basic steel industry came in the main from the smaller, high cost, marginal producers. Naturally, if they joined the union first they wanted to be the first to get some benefits from their identification with the union, so there was a good deal of insistence upon the demands being submitted to these companies. I should perhaps preface what I am going to say by telling you that we weren't too sure when we started to organize that we were going to succeed, and that probably had something to do with our failure to look very far into the future. But when it became evident

that the people, particularly in the smaller companies, wanted to have a union and were prepared to make sacrifices for it, it became necessary to do whatever could be done in their interests. The first demands were submitted to some of the smaller companies. Their general reply was, "What do you want to pick on us for? Get the big fellows and we'll do whatever they do. We've always had to do what they do so we'll do it again. They sign a contract, they grant you some concessions, and we'll do what they do." Well, we took them at their word, after consultations through their employees, and concentrated our organizing efforts on the larger companies. In due time they signed contracts in which concessions were granted.

Then, of course, we were reminded of the people who had earlier joined the union. We then went to the smaller companies and reminded them of what they had said and what we had done. But at this point they began to tell us of their own difficulties, competitive and otherwise, and said "We can't do it." In the case of one company which had just emerged from receivership, there was no hostility of a deep-seated nature between the management and the local people who had become union members. The president of the company had convinced the employees that he just couldn't make any concessions without threatening the survival of that company, employing as I recall about 3,000 people. The people were of course disappointed. They didn't know all the facts, but they knew that the company had been through bankruptcy. But, as with a lot of people, they believed that somewhere there's a mysterious reserve of funds which can be drawn upon.

Finally the president of the company, the president of the union, and a committee were persuaded to come into the national office in Pittsburgh. (My recollection is that this was the first company executive that ever stepped into the office of the union in Pittsburgh.) He had a very persuasive case. I happened to be the one who was asked to meet with him and I finally told him that I could appreciate the position he was in, but I had never seen a company -- and I had worked myself in a good many -- that was so well managed that there wasn't some room for improvement. I suggested that if both the president of the company and the union committee members went back to their Ohio town and undertook to enlist the help of every single employee -- it didn't matter how humble a job he had -- in trying to find out how to reduce their costs and improve the quality of their product they could probably save themselves. I will not bore you with the details of the experience but they did just that, with the result that a few months later the company had so improved its cost position that it was able to grant the wage increases that the larger companies had granted, to the great delight and satisfaction of its employees. Particularly, the workers were proud of the part that they had played in this effort. The president of the company was quite enthusiastic, and he went around in his circles to advise all of his fellow management friends that if they were in any difficulty the thing to do was to go to the union for help because the union had various ways of getting them out of their difficulties.

This created a little more business than we had looked for in the union headquarters, and it also raised the question as to the propriety

of a union concerning itself with any of the responsibilities and problems of management. My colleagues in the union were very certain that this was quite outside the area of responsibility of a union and they were pretty doubtful as to whether we ought to be sympathetic to any of management's problems. We weren't very far out of the Depression at that time, and I pointed out that there were not numerous opportunities for other employment for union members if their employer failed to survive. As I saw it, the union was faced with the problem of either doing what it could do to help the companies out of these difficulties in order that its members might have employment, or to disregard this altogether and let the company liquidate, if circumstances so dictated. But in such a case the employees would be a walking advertisement of what presumably happens when a union enters into a community where it had not previously been. Viewed from that angle it was finally decided that I was a rather curious old gentleman but perhaps I ought to be humored to some extent. There were, however, great reservations about the propriety of the unions engaging in this kind of activity.

In the group of people who worked with the management of that company in putting it on its feet were some remarkably talented people. Finally we brought one of them into the office to help out with other requests that came in for assistance from other companies who were having difficulties. In a number of cases we were able to do something -- management was willing because it's survival was threatened, as well as the jobs of the employees -- we were able to make some significant contributions to the preservation and improvement of the position of a number of companies. This attracted a good deal of attention. A young fellow who operated a charging machine in an open hearth department of a steel company became the head of what came to be known as the union's Production Engineering Department. Subsequently he was invited to Massachusetts Institute of Technology and became the author of what came to be known as the Scanlon Plan, which I expect some of you have heard about. It doesn't happen to be a plan or blueprint, but it does happen to be a different kind of an approach to this problem of union management relations which enables all of the parties in the enterprise to work together creatively and constructively.

I point those things out to indicate that there is something beyond the area of peaceful collective bargaining that can be very profitably explored by both unions and management. It seems to me evident that in many cases the unions need to re-examine their status in the light of the present conditions rather than those existing in the past. They need to look more to the future.

Now, of course, the academicians and other people have taken hold of some of these ideas. Sometimes when I read of what is being written about group dynamics and human motivation, it sounds pretty complicated to me. But I think those who have described this process of cooperation as one in which the area of participation in the enterprise is enlarged so as to permit the individual employees, both individually and collectively, to play a more creative and constructive role in the operation of the enterprise have found the most apt description.

It seems to me, then, that in the light of the experiences of a few people -- in the light of new technological developments that are in the making in this country, in the light of what is happening in the world scene with the competition from the Communists for the minds of men -- then it's appropriate to begin to think of just where we do go from here in these union-management relations.

I confess that at times I get appalled at the complexity of agreements, the technical nature of those that are being drawn up, at the various devices that are created to maintain this uneasy equilibrium of these presumably antagonistic forces. I begin to wonder at times whether we are not going to get a whole body of rules and procedures that will become so complex and so technical in nature that it will be quite impossible for people to really work together as I think they are capable of doing.

Finally, I should like to say that after a reasonably long life of observation and association I am satisfied that most human beings are basically cooperative in nature. I think their cooperative instincts and traditions have been inhibited and corrupted to some extent by the emphasis that's been placed on what is usually called competition. I think that man is a social being, that he would rather cooperate than be combative and competitive. I think that out of the development of genuinely cooperative relations designed to bring about the maximum degree of participation in the work of the enterprise and the production of goods and wealth, most people can get the greatest satisfaction. Again I say that it is gratifying that some people have tested and experimented and found that it is possible.

I often like to quote the example of the vice president of a company that had a very successful experience in this cooperation and the president of the local union who were invited to speak to the management and labor people of Harvard some years ago. After each one told of his experience during the discussion period one of the management people asked the executive vice president of the company, "What do you get out of this?" To which the big Irishman replied, "Well, I'll tell you, my friend, management ain't got ulcers no more." And the president of the union, to whom the same inquiry was directed, said "We have found a new way of life." Interestingly enough, the financial rewards were not given the first order of importance. They felt that through their periodic negotiations they'd established an acceptable wage structure, and that certain rules had been established which they felt contributed to a better kind of relationship, but that the most important thing was the climate of relations in which men felt better toward each other -- the workers toward management and management towards the workers.

I am inclined to believe that probably in a great many more places than we may currently think exist, if we were able to penetrate the minds of the employees, we would find that by and large they think the wage rates and a number of other conditions of employment that have been established through the collective bargaining relationship processes are pretty generally acceptable. But there are other things that they seek that they think will give them more satisfaction, more recognition, and more personal dignity. I think all this has something to do with the possibilities for a better life for all the people. I am reminded of

Arnold Toynbee, who said, regarding the 20th Century, that "This is the first age since the dawn of civilization in which people dared to think it practicable to make the benefits of civilization available to the whole human race." I think the unions are now in a position to make greater contributions to the successful operation of the enterprises that employ their members and to the welfare of our whole country. Whether they do or not will depend largely on the attitude that management has toward them. The unions can't do all the cooperating. But if management is prepared to face up to the fact that unions are probably here to stay, that they are likely to remain permanent institutions exercising a good deal of influence in America, and if management intelligently seeks to secure their cooperation in making industry operate in the interests of all the people -- not only the employees and the stockholders, but all of the people -- I think they are going to find some very willing allies and they are going to be able to enter into new areas of prosperity and achievement that they have as yet hardly visualized.

I am not sure that what I have had to say is anything you haven't already thought about or heard about before. I always appreciate the opportunity of meeting with a group of management people for a number of different reasons, not the least of which is that I have found that they are usually more courteous than are many of my old friends in the labor movement. Sometimes I think they are even more receptive to new ideas. I have had some very pleasant experiences both at Harvard and at other educational institutions in meeting with management people. So I am grateful to you for your patience. Thank you very much for the very pleasant experience of meeting with you this evening.

Concluding Address

September 15, 1956

MANAGEMENT'S ROLE IN A DYNAMIC ECONOMY

John D. J. Moore

Vice President,  
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New York

MANAGEMENT'S ROLE IN A DYNAMIC ECONOMY

John D. J. Moore

I am grateful indeed for the invitation to participate in the Summer Management Conference of the University of California's Institute of Industrial Relations. Without a doubt, I owe my invitation to the generosity of your distinguished colleague, Dr. Eugene W. Burgess of the University's faculty.

I have the utmost respect for Dr. Burgess, a profound scholar, a gifted teacher, and an ornament to the fraternity of management consultants, but I must confess to being sorely puzzled as to why he has seen fit to expose me to you as a representative of management. He is a man of tact and infinite patience, but he is also a firm believer in modern rules of management behavior. My chief recollection of our work together is my watching Gene Burgess watching me. While he was doing so, I would occasionally see him shake his head mournfully, roll his eyes to heaven, and mutter -- about every fifteen minutes -- "Good Lord in Heaven! How can this company make any money if this is the way they operate?"

In any event, if this occasion is Gene Burgess' revenge, it is a severe one, and I find myself standing here, wondering how I could have

had the temerity, before a professional audience of this calibre, to undertake a discussion of so vast a topic as "The Role of Management in a Dynamic Economy." Of course, my only excuse for doing so is that I have had the privilege of being a member of management -- in an interesting, diversified, international company which has been confronted with practically all of the problems created by this great dynamic economy in which we are presently living.

One thinks of this dynamic economy in terms of the decade of 1946-1956. The recent history of W. R. Grace & Co. offers some good illustrations of the manner in which these remarkable years have brought about changes in corporate planning and a broader scope of management thinking.

Like many another company, we emerged from the second World War depleted in plant, short in men, long in cash, filled with ambition, and none too sure of what the immediate future held for us. In 1945 our company, then over ninety years old, was engaged principally in three businesses: the manufacture of consumer goods in Peru, Chile and Colombia; the steamship business between the Americas; and the import-export and trading business, principally between the United States and Latin America. In addition, we had some modest fertilizer and other manufacturing interests in the United States, a majority interest in the Grace National Bank of New York, and a 50% interest in Pan American-Grace Airways, Inc., known as Panagra.

At this stage in our history, a new management, trained within the organization, succeeded the men who had guided the firm through two world wars and the intervening years of peace. Not everyone realized that W. R. Grace & Co. was born in South America, and grew there to considerable size before it immigrated to this country along with its founder, William Russell Grace. The new president who took it over in 1945 was his grandson, Peter Grace, 32 years of age, determined to expand, diversify, and strengthen the company. And he was anxious, without slackening the pace of our South American growth, to gain for the firm a substantial stake in the dynamic economy of the United States.

Important decisions had to be made, and in 1945 and 1946 studies were launched, out of which came a plan of action that vitally changed the character of Grace & Co. The most important decision was the selection of the chemical industry as the vehicle for Grace's entry into United States industry. Obviously great in growth potential, the chemical industry had many other attractive aspects, including the fact that an established position in the chemical industry in the United States affords an excellent opportunity for us to do some pioneering in chemicals in South America in the near future. And pioneering in South America is still something very dear to our hearts.

Now, ten years after the taking of this basic decision, the sales and revenue of the company have more than doubled, amounting to \$427 million in 1955. Gross fixed assets have increased from \$62 million to \$245 million; net earnings after taxes from \$11.5 million to \$19 million. We have a total payroll of 45,000 employees. More significant, however, is the change in distribution of the company's net fixed assets among the various divisions of

the business. The chemical industry now represents 55% as compared with .3% in 1945. The steamship business and foreign operations, which together represented a total of 91% in 1945, now, although they have increased in absolute size with the growth of the company, represent only 34%.

So W. R. Grace & Co. today is primarily a chemical company, standing eleventh in the United States chemical industry in terms of assets. The other branches of our business have also grown, including our various enterprises on the Pacific Coast. We have further recognized the growth of the Pacific Coast economy by the purchase of the Foster and Kleiser Company, which has long shared in the commercial development of this area. And not to overlook Africa, we have acquired a 49% interest in an important oil drilling venture in the deserts of the new kingdom of Libya, in partnership with Texas Gulf Producing Company -- our first oil enterprise.

I took these moments to tell you this story simply to indicate that W. R. Grace & Co. has been coping with some of the problems of management in a dynamic economy, at home and abroad. Like the country taxi-driver who boasted to his fare that he knew every pothole in the road, and proceeded to prove it by hitting them all, we feel quite well acquainted with some of the toughest business problems of the last dynamic decade. In common with many others, we have come through these years greater and stronger and wiser, for we have learned some valuable lessons, both at home and abroad.

It is on the strength of those lessons that I wish to give you my own personal observations today. My subject is management's role in a dynamic economy, and I take the word "role" in this context to mean "task" or "responsibility."

It seems to me that the task of management in this regard is threefold: first, to understand the nature of this dynamic economy and the forces which create and maintain it; second, to apply all its skills to seeing to it that the economy remains dynamic; and third -- and, I submit, the most important -- to recognize that a dynamic economy is by no means an end in itself, but rather a great opportunity for management to share in the creation of a better society in which human values and things of the spirit can enjoy the place which the founders of the Republic visualized when they gave the world the phrase, "the pursuit of happiness."

You will note that I ranked first in the order of management's tasks the business of understanding the nature of the dynamic economy and the forces which affect it. I did so because it seemed to me, with that 20/20 hindsight which is the special gift of all corporate vice-presidents, that we did not quite comprehend the forces which were at work during the decade 1946-1956.

I need not recall to your minds the state of apprehension and puzzlement with which business, along with labor and government and the professional economists, peered forward ten years ago into the mysterious future world that we then called "Post War." Nor need I recall to you how hopelessly inaccurate were all of our estimates of the situation contained in

innumerable reports, articles, speeches, and in some legislation. Even the most high-flying optimists among our leading economists, in predicting the post-war levels of the gross national product, failed utterly to visualize the tremendous momentum of a peacetime America working close to capacity. And Henry Wallace, in his much publicized book of a decade ago calling for 60 million jobs, could predict for 1955 no higher a gross national product than \$200 billion dollars. Henry was half right!

Management, taken as much by surprise as anyone else, set out to catch up with the economy. Long-range corporate planning, a management stepchild for many years, or, at best, an adjunct to sales and marketing, has become a favorite in the front office. And the more deeply we have penetrated into our planning, the more we have come to appreciate the tremendous dynamism of today's America, and the higher we have set our sights.

For instance, corporate expenditures for plant and equipment, which were less than 15 billion dollars in 1946, have continued to rise until they are estimated at 36 billion dollars for 1956. The total of this type of private spending for growth and greater productivity in the decade we are discussing was \$250 billion, or a quarter of a trillion dollars! This brings home dramatically the vastness of the great new vista which management is looking at today. And it calls not only for focusing sights higher but for using a new wide-angle lens. It calls for a much broader philosophy in corporate management.

No longer can we count a man a competent top manager solely upon the basis of his talent in moving men from box to box on management charts. Nor can one be satisfied with the minds of managers whose aptitudes are limited to marketing, production, or finance. Without for a moment underestimating the crucial importance of those timeless business skills, one is today impelled to admit their inadequacy to cope by themselves with the overwhelming economic and social forces which characterize the moment in which we are living and working.

Of course, the need for a new and broadening element in business thinking is not new. Let me repeat to you the words of Wallace B. Donham, Dean of the Harvard Graduate School of Business Administration from 1919 to 1942. He was regarded by many, and I count myself among them, as one of the wisest Americans of our time. He wrote in 1933, in an article boldly entitled "The Failure of Business Leadership":

We build great industrial corporations which introduce amazing novelties into life. Their executives behave first, last, and nearly all the time as if their companies had no function except to manufacture and sell. They have a fine understanding of their own business, too little grasp of their industries as a whole, almost none of the relations between their particular interest and our general social and economic structure, and far too little grip on the social consequence of their activities. . . .

We need administrators ... who are able not only to handle their specialized problems well, but also to see things in wide relations and do their part in maintaining society's stability and equilibrium.

Last April, in a memorable speech to the American Newspaper Publishers Association in New York, Mr. Crawford Greenewalt, the President of the Dupont Company, examined the situation as it exists today. Mr. Greenewalt called on business and on the community to seek out and encourage the different and creative individual, the man of breadth and vision. He called him the Uncommon Man -- the dreamer and the gifted thinker who does not happen to be one of the interchangeable parts in our modern economic and social machine.

Today the ideas of such men must be listened to -- above the whirl of our management machinery. They must be brought in to the council tables of American business -- at the corporate summit where decisions of grave consequence are made. In particular, they must be men of the mentality to understand the obscure and powerful forces whose significance far exceeds the effect of any day-to-day business decisions. Those are human forces. Like all else human, they are both good and bad, but they are fed by the promptings of human aspirations all over the world, and they call for the talents of the Uncommon Man in the field of human relations.

Since I am nominating Mr. Greenewalt's Uncommon Man to a place in corporate management, let me give him a title -- the Uncommon Manager. The decade ahead will be the decade of the Uncommon Manager, and let us have a look together at some of the man-sized tasks which will fall to his hand.

First of all I mention inflation. In my years in South America I have worked in two countries where inflation got completely out of hand. The tragic results were twofold and inevitable. One was to place every segment of the population on a speeding escalator. That included selfish and shortsighted business and labor leadership, made complacent by the seesaw of rising prices and wages. Well, they escalated all right -- straight upstairs, right through the skylight and into an economic Never-Never Land. And the other result, again identical in both cases and again inevitable, was to pile control onto control onto control, creating a patchwork jerry-built socialistic state -- in other words, a bloody mess.

Last month, in a provocative address to a conference of the Trust Committee of the American Bankers Association at Salt Lake City, Professor Raymond Rodgers of New York University drew forcible attention to the United States wage-price spiral of 1956 as a threat which we cannot longer ignore or even discount. Most of us are happy and we don't want to look at it -- but it's there and it just won't go away! To be specific, wage increases in the first half of 1956 have been around 10¢ to 12¢, which is nearly twice the 6¢ to 8¢ pattern of 1955.

Labor makes the claim that because of an annual increase in productivity, management ought to be able to absorb such wage increases without raising prices. But management must be conscious of the need of keeping capital markets readily available by maintaining or increasing dividends, and also of the need to invest capital in more machinery to assure that annual increase in productivity. Thus management has felt compelled to pass on the wage increases in the form of price increases. Reasonable men can differ as to the precise extent of the danger created by this dizzy spiral, or by a level of consumer credit outstanding, now over \$37 billion compared

with \$8 billion ten years ago, or mortgage debt of \$137 billion, quadrupled in ten years. But the Uncommon Manager will face up to the basic dangers of inflation and will take the lead courageously in trying to find solutions before it is too late.

Similarly, the Uncommon Manager will be coping with such awe-inspiring subjects as the job of management in fields related to atomic energy, with all of its fascinating challenges. And on this subject I can do no better than to refer you to the masterful paper presented by Mr. John Jay Hopkins, the Chairman and President of General Dynamics Corporation, on the subject of management's responsibilities in the atomic age, before the American Management Association in June, 1954. It is in my judgement a splendid example of the kind of thinking which constitutes Uncommon Management. Mr. Hopkins brought fundamental questions of ethics back from the realm of embarrassing, unfashionable, supposedly naive matters of debate to the area of vital, legitimate business concern.

The Uncommon Manager will be concerning himself imaginatively and boldly with shortages and potential shortages of our natural resources. This, of course, is a problem not for one company or industry, but of wide-spread concern to all the nation.

In the case of some resources -- water and timber, for instance -- it is a matter of wiser national use and control. For other basic materials we are fortunate in having supplies available from our wealthy good neighbor to the north, Canada. In the case of still other materials, technology has found ways of substituting and synthesizing that enable us to seem far richer than we were naturally endowed. But in the final analysis, as the Paley Commission report pointed out four years ago, there are many raw materials essential to the proper functioning of our economy, even in peacetime, that have to be imported over long distances, from countries whose viewpoints may differ from ours. In order to prosper, we must develop lasting, mutually profitable relationships with those countries.

The Uncommon Manager will do his best to bring his co-managers to grips with the hard facts of our foreign economic policy. Do we understand that American industry is going to have to look more and more to foreign fields to take up our production? Do we know that to hold our place in foreign markets we are going to have to engage in more manufacturing and assembling abroad? Do we realize that in the long run we must have a more positive attitude towards freer trade? Are we doing all we should to supply economic assistance to those who, like many of our Latin American neighbors, have long been the firm friends of the United States?

If materials and healthy foreign trade are part and parcel of a dynamic economy, how much more essential are men! We have only just begun to study the long-range manpower situation of the United States. The Uncommon Manager will further this study; he will throw all of management's resources and skills behind the effort to produce a greater number of scientifically trained young people, to assist in the development of the fullest potential of the tremendous force for good that is America's youth. You have all read of Soviet Russia's progress in the technical education of its youth,

and can appreciate its significance. But our own problem in this respect would be crucial even without the shadow of Russia's progress.

Is it sufficient that only 12% of our college-age population completes college? Only this month the Council on Financial Aid to Education reported that corporate contributions to education have risen in ten years from \$40 million to \$80 million. The encouraging feature of this is that more emphasis is being placed on grants to colleges and universities with no strings attached. And there is a noticeable growth in outright gifts to the liberal arts colleges which year in and year out provide the nation with the well-rounded, thinking, inquiring minds that can give business and the nation the kind of thoughtful leadership that has been its traditional strength -- and can produce more Uncommon Managers.

A distinguishing feature of the Uncommon Manager is bound to be his interest in the simple subject of citizenship. I wonder how many of you were struck, as I was, by the recent article in Fortune describing the job which the top managers of St. Louis industry are doing in revitalizing business and industry in that city. They are putting their brains and their time to work to tremendous effect. Somebody asked Edwin Clark, President of Southwestern Bell Telephone, how he could take the time to do it. His answer summed up what I suggest should be an underlying tenet of Uncommon Management. "Citizenship," said Mr. Clark, "is one job you can't delegate."

This is true at the community level, and at the state and regional and national level, and it can be effective at the international level. I suggest that it is a task of Uncommon Management to aid in the National defense, but it is also its job to dedicate its mind and its skills to the bringing about of true international peace. When we talk of conservation of natural resources and the training of our youth let us consider the criminal waste of both which a war represents. Perhaps technology will teach us to replace the zinc and the copper destroyed in a war, but who will replace the Uncommon Man who is dead at 21?

You may wonder why I bring out these points at a meeting of industrial relations people. Throughout Dean Donham's great article, which I mentioned earlier, he used an intriguing phrase: he referred to the need for corporate management to develop something which he called "general relations." I suppose he meant the development of a kind of thinking which should properly appraise the situation of a particular enterprise in relation to history, to peace and war, to intellectual and philosophical currents, to the worlds of government and education, to its own employees, to people in far-off places who may never have heard of the corporation, to the financial community and to agriculture, to its immediate communities, to society at large, and to the spiritual forces which motivate people as deeply if not more deeply than the economic. Certainly Dean Donham's "general relations" would include a field which is being discussed much less self-consciously by businessmen these days -- human relations.

We don't pay top managers today to understand and manage machines -- machines are relatively easy to understand and manage. We pay top managers to manage people. And to be managed, people have to be understood. Yet management's tendency today in a crowded life is to avoid people. The company automobile, and executive airplane, and the executive dining room are designed to give life a machine-like efficiency while insulating our corporate managers from the human race upon which they depend for their success in management. Tremendous progress has been made in the attitude surveys -- consumer, labor, employee, and just plain people -- but I submit that these are not sufficient for the understanding of people.

One evening in New York recently I met on the subway the head of one of the country's top law firms, a man who could afford to buy a new Cadillac every Friday night. I asked him why he rode the subway. Although I don't suppose he has tried a jury case in twenty years, he replied, "The juries ride the subways, and it doesn't pay us lawyers to get too far away from them." Well, the customers ride the subways, and the employees ride the subways, and the voters ride the subways. What that wise old lawyer meant was that management simply cannot afford to withdraw into its executive suite and hide from its various publics. The Uncommon Manager will know how to keep open the door between the board room and the people.

This is a reason why I feel sure that much of Uncommon Management will be recruited from men whose talents and fields of knowledge lie closest to the area in which most of you work. Industrial relations, like public relations and community relations, is a field requiring understanding and sensitivity to impulses from the outside which all too frequently do not penetrate to the sanctity of the corporate inner chartroom. Peter Drucker has written, and I most emphatically agree with his view, that it is not unlikely that the most significant developments in the years ahead in the American economy may not lie in the technological area at all, but in that of human and industrial relations.

Drucker may have understated the situation. It often seems to me that already you men in industrial relations have seen this country through a revolution fully as stirring as any of the technological revolutions of our time. It is less than two decades since the sit-down strikes in Flint and Detroit -- since the days of Homer Martin and the Battle of the Overpass -- since the finest talent of the American Bar was engaged in declaring collective bargaining as it is practiced today to be unconstitutional. Twenty years ago many of us regarded collective bargaining as a class struggle. And well it might have been, for there were important elements in labor leadership who were dedicated Communists. But something happened and you men were in on the happening. The "class struggle" disappeared as the industrial relations practitioners learned to understand the aspirations of labor, and finally labor is cleaning its house of the Communists.

Today the Grace organization bargains with one union over salaries which average more than \$20,000 per year. Today, when the president of the second largest bank in Washington, D. C. wants a raise he takes it up with the representative of the controlling owners, Mr. John L. Lewis. Today union pension and welfare funds are among the plutocrats of the investment community,

and the stockholders' relations men are asking the labor relations men for introductions to the labor men who run them. Today the names of Dave McDonald and Walter Reuther are dropped in Wall Street lunch clubs with as much aplomb as the names of Harlow Curtice and Ernie Breech. Whatever happened to the class struggle? It has disappeared, and it has been the skills of the industrial relations people which have brought about this disappearance.

Your profession has seen the United States come through what could have been our greatest crisis. With the reduction in labor tension you are freer today to concentrate more on new substantive contributions to the relations between management and labor. There are certainly great and imaginative ideas waiting to be developed in this country.

And there are wonderful things going on which must encourage us. The forecasters are talking and writing of the coming four-day, and even the three-and-one-half day week, as America's productivity increases in the new Age of Automation. Some people feel that the shadow of robotization and dehumanization of the worker, which has long been with us, looms over the new prospect. But it seems to me quite possible that the answer to this may well be found in the growing and wonderful enrichment in America's use of its new and greater leisure time. The increase in leisure is bringing families closer together right now, without waiting for the four-day week. It is expressing itself in sports and travel, in camping and country life, in wider educational and cultural pursuits, in cultivation of the soil, in opportunities for contemplation and spiritual rejuvenation, and in the "do-it-yourself" phenomenon with which all of us are familiar.

Is it too much to suppose that many men and women are finding in these new aspects of their lives fruitful satisfactions which may more than compensate for those lost by reason of the diminishing of artisanship and the ever increasing division of labor?

We see a much more educated corporate management in the making. We see the growth and multiplication of graduate schools and courses in business administration; the "back to school" movement among corporate executives up to the highest levels. The trend is apparent in the Harvard Advanced Management Practice course, in the Sloan Fellowship, in company-sponsored graduate work and lecture courses -- in activities such as those sponsored by your Institute and other groups, types of sessions which were rare a generation ago. A significant phenomenon in this same regard is the establishment by the Bell System of courses in literature, history, and the arts for their junior executives in the Philadelphia area.

We can be encouraged by the greater willingness of management to call on specialized and, mark you, generalized outside talent. This wholesome open-mindedness has more than doubled in ten years the number of recognized first-line independent management consultants of a wide variety of skills. In addition, the psychologist, the psychiatrist, the human relations expert, the economist, the sociologist, are increasingly found in management councils. The tendency, which has become notable in recent

years, to invite college presidents and women and others whose background lies entirely outside the field of business to join leading corporate boards of directors can be regarded as a step toward Uncommon Management, and I predict its increase.

Out of all this will come, I feel sure, a new flexibility in attitudes. We are learning not to attempt to lay out rigid blue-prints to take care of everything. We are simply not capable of predicting the future of the economy in detail, for nothing is more certain than that some unexpected, unforeseen factors will enter the picture. All we can hope to do is cultivate an imaginative and thoughtful approach that takes into account the major challenges that are bound to come, at the same time recognizing that it is an inescapable responsibility to provide some of the answers.

This is going to be a great decade and I know we at W. R. Grace & Co. are looking forward to it with zest. We'll have exciting times in our many businesses in South America and in North America, and we'll be penetrating new industries in new areas.

It is going to be exciting for every one of us, and I know you feel the same way. If we will keep our ideas and good American common sense, we're going to go on building a greater country. And, just in case anybody has been wondering, I happen to think that the last figure in the earnings' statements is going to keep right on going up.

Summary Address

September 15, 1956

INDUSTRIAL RELATIONS IN A CHANGING LABOR MARKET

Arthur M. Ross

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INDUSTRIAL RELATIONS IN A CHANGING LABOR MARKET

Arthur M. Ross

By way of summing up the conference, I want to return to the name of our Institute: The Institute of Industrial Relations. Much of our work this week has dealt with manpower supply and manpower needs in the new economy of the 1950's and 1960's. Mr. Golden and Mr. Moore and others have certainly dealt with labor-management problems, but, unlike the previous conferences we have had, those problems have not particularly been at the forefront of this conference.

I had prepared a talk, but 94% of it has already been said. I can allocate about 34% to Mr. Haber's talk, 17% to Mr. Moore's talk, some 32% to the session on fringe benefits, and the remainder can be distributed among the other workshops. Since what I will say has already been said, I can label it as a synthesis. Synthesis is an academic term which excuses repetition of what has already been covered. It might benefit us to recapitulate some of the conclusions we have reached concerning the technological explosion in the 1950's and the new labor market which has resulted. We can then ask ourselves what implications this has for the subject of labor-management relations.

It's hazardous to look ahead from a point like this. There is always the danger of the "New Era" philosophy of the 1920's. When we view the optimism and the expansive thinking in which all of us engage these days, we certainly must say: "Well, people were thinking that way in 1927 and 1928. Is there going to be the same rude shock -- let's say in 1957 or 1958 -- as there was in 1929?" We certainly have to guard against a naive

adoption of a New Era philosophy. On the other hand, there is an even greater danger of excessive cynicism, of an unwillingness to recognize radical changes when they have actually taken place, and an inclination to assume that what has happened in the past will necessarily happen again. Keeping both of these dangers in mind, we are justified in assuming that truly fundamental changes are taking place in the economy, and that this technological explosion and its concomitant results will continue.

I assume they will continue because the very basic function of research with which Mr. Critchfield dealt has been built into the economy and occupies a central place in corporation work. We will continue to see the application of technological innovations to all phases of industry -- not only manufacturing and chemical processing, but also transportation, merchandising, office work, and other phases. Making this assumption, I conclude that the rise in productivity per man-hour which has been going on at an unprecedented pace since 1945 will continue. It follows that the real wages and the living standards made possible in our economy will continue to rise. And it follows from that -- and this is now taken automatically as a truism -- that over the near horizon will be opportunities for greater leisure, either in the form of shorter workdays, shorter workweeks, vacations, more holidays, or some combination of these. And finally it follows from these considerations as well as from a look at the population profile which Dr. Haber examined, that we will have a short labor supply in the foreseeable future. We tend to think of spot labor shortages of engineers, of skilled workers and of school teachers, but when we look at the figures on the relative scarcity of people between the ages of 20 and 45 and see that this will continue for at least another 10 years, I think we are justified in referring to a short labor supply in general. We will have an unusually small proportion of people in the productive ages as compared to the total population of consumers.

I want to ask what this means for labor-management relations. And I want to do this by making a few remarks concerning the next 10 or 15 years in industrial relations. Some of the trends and problems are the direct result of the explosion of technology and the labor market changes which we have been discussing. Others are the culmination of long-run developments, but in any event they are significant and they deserve our attention. They ought to be examined by thoughtful people in the field of industrial relations.

I'd like to talk about three aspects in particular. The first is the connection between industrial relations and technological change. The second is the change in the labor movement and the structure of collective bargaining. The third is the changing basis for compensation and the new concept of compensation which are very rapidly taking hold in the United States.

Perhaps I can introduce the first topic by asking this question: will management have the freedom and the flexibility to make the rapid changes in techniques, organization, and methods which are indicated by this application of engineering principles to all phases of economic activity, notwithstanding the inevitable dislocation and the inevitable disturbance of vested positions and vested habits? Many reasons for optimism have been cited at this conference. We have been told, and it is certainly true, that the statistics on productivity per man-hour are rising at an unprecedented rate. We have heard

company representatives here tell us about their plans for the introduction of equipment in the insurance business or the banking business, as well as in manufacturing, which will do twice as much work with the same manpower or twice as much work with only a little more manpower. This is just another way of saying increasing productivity. We have been given other grounds for optimism, for the present official policies of the large industrial unions not only offer no resistance to the introduction of technological change, but favor and encourage the process. This is a far cry from the former policy of obstruction, which was characteristic some years ago. We can fittingly contrast the position of American unions with respect to other nations. For example, the British unions, in the mother country of Industrial Revolution, are, in general, rather frankly and bitterly opposed to the introduction of automation.

But I think there is some danger in viewing this problem too optimistically or too superficially. There are other and perhaps more fundamental types of resistance to change than the old-fashioned opposition to the machine. We can think, for example, about the conflict in the transportation industry over the trans-shipment of truckloads by railroads. Or we can think of controversies in the retail industry over the pre-packaging of meat. There are the disputes in numerous industries over contracting out work when that may seem more feasible or more economical than performing the work inside the enterprise. There are disputes over changes in industrial location.

The implications for the conduct of industrial relations are pretty clear. In the first place it seems to me imperative that management take a firm stand on this question. It is more true today than it ever was in the past that the survival and health of almost any industrial organization depend upon research, the development of new methods, new products, and new technologies.

But at the same time we must recognize what has always been true: that efficiency is not and cannot be the only consideration. Efficiency is a major consideration, but a firm cannot be administered effectively on the efficiency principle alone. This is so obvious to industrial relations people that I am not going to dwell on it. Attention must be paid to the human effects. The development of techniques for introducing changes, and for lessening the impact of these changes, is as creative and dynamic a part of the industrial process as is the development of techniques for making things cheaper or making them by machine instead of by hand. The adaptation of scientific techniques to the requirements of collective bargaining is a creative and imperative process, for the job is only begun when the engineers present management with the techniques. Gaining acceptance and cooperation, identifying the impacts and dislocations, and bringing forth solutions to these human problems are fundamental and basic parts of the process.

Despite the many conferences and learned papers on the effects of automation, we don't know too well what the pressures are going to be. But we can't shrug them off, as many of the industrial engineers are inclined to do. We can't shrug them off as mere annoyances or excrescences resulting from ignorance or selfishness. They are part of the problem, the same as the technological aspects are part of the problem. The solution is as creative as the solution of technological problems, and as necessary.

Management must take a more sophisticated approach to labor costs and to minimizing them than has customarily been the case. It is often true, for example, that management people will holler and scream about another two or three cents on the wage rate -- a visible and an easily identifiable item of cost -- without paying much attention at all to the question of how much in terms of products per hour their seniority set-up is costing them.

I think management must view itself as not giving a wage increase but as buying a wage increase. In other words collective bargaining is a bilateral process. In a majority of cases throughout the history of collective bargaining, management's attitude has been to sit back, ascertain what the union wants, and see how little can be given. There's not an awful lot of initiative in that, is there? Management should do the proposing as well as the giving. Unions should do the conceding as well as the demanding. In other words, it is important to view collective bargaining -- more than we have in the past -- as a two-sided or bilateral phenomenon.

When I call for management initiative, I am not recommending what is sometime known as the General Electric formula; that is, to come out with a package and say, "This is it! We'll talk about it, but it will be idle talk because we know that this is a fair solution." I'm not sure that is real collective bargaining at all. I believe that the parties should discuss all of their proposals with an open-minded attitude, with a willingness to change positions and to recognize inevitable pressures from the other side. When I call for more management initiative, I mean management-proposed changes viewed as being necessary for the health of the enterprise rather than waiting to let the unions propose all the changes and giving as few of them as possible under the circumstances.

Next, I'd like to turn to my second problem: What will happen to the labor movement and the structure of collective bargaining in the 1950's and the 1960's? First, it's becoming clear that the era of competitive expansion and rivalry between unions is rapidly drawing to a close. We see a stabilization of union jurisdiction as compared to the last twenty years when there was a frantic and exuberant competition between unions to represent groups of workers. Jurisdiction is being stabilized, neither on the basis of formal charters nor on the basis of any jurisdictional logic, but pretty much on the basis of what the lawyers call adverse possession or prescription. This means, quite simply, that possession is nine points of the law. In fact when you look at that machinery for stabilization you can see that we are going back to the pre-NLRA concept of jurisdiction.

The NLRA introduced quite a revolutionary change into the whole concept of union jurisdiction. When you look back, it is surprising that the unions ever accepted it, because ever since 1886, when the American Federation of Labor was formed, jurisdiction was viewed as a property right of unions. It was not something to be settled by any popular plebiscite to see whom the workers wanted to represent them. Now with the no raid pacts, the merger, and the arbitration of jurisdictional disputes, we are returning, I think, to the old property concept of jurisdiction. However, the basis is no longer the formal charter grant but the principle that "He who has shall keep".

It is likely in the next few years that there will be numerous amalgamations of unions operating the same field, some of which have come from the

old AFL and some from the old CIO, but also some that were inside the same federation to begin with. Many negotiations looking to such amalgamation are already in progress. As a result there will be fewer unions five or ten years from now. A much larger percentage of the total labor movement will be in a few of the big unions, such as the Steel Workers, the Auto Workers, the Machinists and the Teamsters; they will have stable and unchallenged jurisdiction.

This brings me to the union security issue, which has been the most explosive source of controversy in American labor history ever since the conspiracy trials in the first decade of the Nineteenth Century. Union security is still an explosive and controversial issue; witness the disputes concerning the right-to-work laws and the section in the Taft-Hartley Act which legitimizes such laws. Union security led to the collapse of the National Defense Mediation Board in the Lend-Lease period. It was the worst problem of the War Labor Board during World War II. It haunted the Wage Stabilization Board in the Korean War, and the right-to-work laws are now a subject of bitter controversy. Yet the union security issue is being reconciled. Federal legislation has been amended in some significant particulars. For example the Railway Labor Act now permits union-shop agreements, which it didn't historically. Also, the rather pointless requirement of union-shop authorization votes has been taken out of the Taft-Hartley Act. One or two states have abolished their right-to-work laws. Another important phase of this reconciliation of the union security issue is the fact that the operational concept of union security is changing, just as the operational concept of job evaluation and incentive pay had to change before they could be accommodated into collective bargaining. The union shop provisions today are not the unions shops of the 19th century; in fact they are not even the union shops of 1946. Numerous variations and modifications which have been negotiated, such as those in the auto and steel industries, to take care of the employers' objections at the same time as the essential union objectives have been recognized. I think that the adaptation of union security to the employers' viewpoint is quite analogous to the adaptation of incentive pay and job evaluation to the union viewpoint.

The objections to compulsory union membership, based on individual freedom, are real ones indeed. But as a practical matter, where collective bargaining is in effect, the trend toward union security arrangements seems to be an inescapable one. I would estimate that today, outside of those states which have right-to-work laws, at least 85% of all union members are covered by union shop or maintenance-of-membership clauses. But the important point to me is the reconciliation which has taken place on this very explosive issue of principle -- a very important sign, I think, of the maturing of our industrial relations.

Next, it is clear that the bargaining relations are becoming deeper and more complex and are assuming a more long-run view. I am not only referring to the three-year and five-year contracts. Many of the commitments which are being made in collective bargaining are matters of 10, 20, or 50 years, such as the pension programs. Permanent funds are being established and programs are being set up which look ahead a generation or two. It's an inevitable result of this that collective bargaining is being viewed as a long-run relationship. More and more employers and union representatives are

concerning themselves, not with the immediate or short-run balance of bargaining advantage, but with the task of building a stable and satisfactory relationship over the long-run.

It can likewise be expected that our whole structure of bargaining units and contracts will become more complex. You know, our theory is that there is "a" bargaining unit. In your company you think of "a" bargaining unit. It seems to me that with the rather diverse and heterogeneous undertakings now being made by management and labor, we'll see a rather complex structure of bargaining units. Units will be established for different purposes and with different coverages -- one unit for supplementary unemployment benefits or health and welfare, another unit for seniority, and so forth. I rather think that we will have a structure of bargaining units rather than "a" bargaining unit between a given company and a given union, with the contracts having different lengths and expiring at different times. Collective bargaining, which has already become complex in terms of subject matter, will become more complex in terms of the bargaining unit and the structure of contracts.

As these trends develop in collective bargaining, government intervention will become of lesser and lesser importance. Today the government is less important as a factor in union-management relations than at any time since the NRA period. The role of the government, after all, has been to get collective bargaining started and to limit the allowable area of conflict. Those are the primitive problems or initial problems; they are not the final or ultimate problems. Once collective bargaining has been established and is operating within this allowable area, the parties are on their own. We can see that by recognizing that the Taft-Hartley Act is not the issue that it once was. Government policy, one way or the other, makes less difference than it ever has before.

At the same time, we are seeing what might be called the withering away of the national emergency strike, which was the occasion for so much government intervention in the past. During recent years the parties in a growing number of vital industries have come to recognize that government intervention results in an awkward situation for all the participants to the dispute, regardless of the form of the government intervention: injunction, cooling-off period, seizure, fact-finding board, pressure to arbitrate, or what-have-you. Unions and management now realize that there is no substitute for an agreement and that the parties themselves are the only people who can make that agreement; and they recognize a particular responsibility to agree if they are in those industries where they have the power to create national emergencies. The parties in a number of vital industries (railroads, steel, automobiles, and atomic energy) have developed collective bargaining relations in which they no longer rely on government intervention. Only two or three disputes which anybody might classify as emergencies have taken place in any of these industries since 1950. The parties in the steel industry had a strike this year for two or three weeks, but it apparently caused nobody much pain. It certainly stopped long before anybody conceived of it as an emergency. By contrast there were five instances from 1940 to 1952 when steel industry strikes were the subject of emergency action by the government. The parties to the railroad industry have had better success in recent years in conducting their affairs within the confines of the Railway Labor Act. There was a

lot of discouragement about the Railway Labor Act a few years ago; there is less today. There has been no major stoppage in the auto industry since 1948. I do some work in the atomic energy industry as a member of the President's Atomic Energy Labor Panel, and I can say that there the parties have shown increasing capacity to practice collective bargaining under difficult circumstances. I suppose coal mining might be added to the list. You'll remember the long succession of emergency situations in coal mining a decade ago, but we haven't heard about them for years.

We can look at the statistics on strikes to confirm these observations. Between 1945 and 1950 about 57% of the man-days lost in strikes were lost in the "big strikes," which are defined by the Bureau of Labor Statistics as strikes involving 10,000 or more workers. In the 1950's, however, only about a third of strike idleness has come in the "big strikes." As a matter of fact, there's reason to believe that strikes as a whole are diminishing in significance. Strike statistics point to a gradual decline in the number of men on strike and the number of days of man-idleness per union member and per gainfully employed worker in the United States.

The present administration's policy of standing aside from major disputes has worked well so far. Of course, it's true that the economic situation has been conducive; we've had high employment and good profits, and employers have been willing to make concessions. Whether this policy might work as well under different conditions might be subject to argument, but it certainly does seem to be soundly conceived for present conditions. There have been a number of disputes in which Taft-Hartley injunctions might have been plausible, but have been properly withheld. Restraint has been shown in declaring emergencies. I still feel, however, that the fundamental explanation is that management and labor in these important industries have acquired the habit of negotiating their own agreements without awkward crises and without government intervention.

One further development in collective bargaining should be mentioned. It's not exaggerating to say that we are adopting a new concept of compensation. The concept used to be that you would buy an hour of a man's time and you pay him a fair wage for it. You might argue with him or with his representative about just how much ought he to be paid for that hour's work, but you at least understood that you were paying him for an hour of time. Then came the gradual development of fringe benefits. I won't comment on them in detail because they were covered in the workshop. The end result is that although we use the traditional accounting system of taking an hourly rate and multiplying it by the hours worked, this is fast becoming an atavistic procedure. What we are actually doing, through the growth of the fringe benefit system, is to underwrite the needs and risks of the worker and his family -- whether he is currently working or not, whether he is on vacation or not, whether he is sick or not, whether he is old or young. It seems to me that we can no longer think simply of a wage rate plus some fringes.

If we are going to look ahead in a far-seeing way, we have to begin explaining the nature of this new system of compensation. Webster defines "fringe" as an ornamental border. That gives you a picture of something which is peripheral and marginal. This is no longer accurate. Today a wage increase is more or less taken for granted in any normal business year. Even in the moderate recession of 1953-54, it was assumed that there should be some wage

increase. Wage increases, then, give way to the fringe benefits as the issue on which attention is primarily focused. It can no longer be said that fringes are something marginal, peripheral, or incidental. And it seems clear that they will continue to increase more rapidly than wages. A conservative prediction for 1960 is that fringe benefits will amount to 25% of payroll in the average firm.

Unions and employers are more or less agreed in accepting this form of compensation. Employers haven't shown themselves particularly reluctant in undertaking this new responsibility to underwrite the worker's way of life rather than merely to pay him for an hour's worth of work. The union leaders are able to get acceptance of fringe benefits even from workers who should theoretically find them uninteresting.

Secondly, the major emphasis on fringe benefits will be placed on the economic security types. The Harvard Business Review in a recent survey found that the kind of fringe benefit which indemnifies the worker against economic risk has increased by 79% between 1948 and 1952. And the trend undoubtedly continues. Here again there is real cause for concern about producing the type of man who has no risks, who has no struggle or fight in his life and for whom everything is taken care of. I don't think of this concern as silly. There is much to be said on both sides; I'm merely recording the trends. These provisions for economic security will probably be expanded and become more comprehensive, because employers as well as unions are acquiescent, and because whenever you look at any particular type it almost always seems reasonable.

Thirdly, I think that in years to come employers are going to be more and more concerned with the cost of fringe benefits. There are many fringes which, individually, have little cost and were introduced when the employer felt he wasn't able to grant much of a general wage increase. Other fringe benefits have been adopted because a general wage increase of the same amount wouldn't have looked like much. To a man earning \$2.50 or \$3.00 per hour, a nickel wage increase isn't too exciting. Many fringe benefit programs which cost only a nickel seem to be much more of a benefit. Some of these unfortunately cost a nickel to begin with but a good deal more later on -- as age increases, as seniority increases, and as entitlement to benefit increases. These factors were discussed in the workshop and I won't dwell on them further. I want merely to point out, however, that the cost of fringes has a way of creeping up which may not be fully recognized because most companies don't have an adequate fringe benefit accounting system. I believe that companies are, however, becoming increasingly concerned over the cost of benefits. Therefore, there is a visible tendency to bargain in terms of costs per hour rather than in terms of benefit levels.

Fourth, I feel that more attention will be paid to the logic, symmetry, and balance of the fringe benefit structure. Many fringe benefit systems are poorly proportioned. The parties make lavish provision for some problems while others are not dealt with adequately. Where a company can accomplish more and produce greater satisfaction by reallocating the fringe dollar, it shouldn't hesitate to reallocate.

Finally, there is something else just over the crest of the future in some industries: an intergrated, flexible, multiple-purpose fringe benefit,

financed either partially or wholly by the employer, and administered either by the employer or by some joint board or committee. This development can be expected logically largely for two reasons. The first is that different workers have different needs and preferences. Some people like to take vacations, some have a good deal of illness in their family, some retire soon, while others will leave the company long before the age of retirement is reached. A flexible plan has this logic: it will offer to each employee benefits which are of real importance to him. Also, an integrated administration of fringe benefits will have the advantages of economical and efficient management.

Already several straws are in the wind. Perhaps you noticed in 1955 the so-called Security Benefit Plan in the glass industry, negotiated between Pittsburgh Plate Glass and Libby-Owens-Ford and the Glass and Ceramic Union. Under this benefit plan the individual employee has an account in his name. It isn't the usual single purpose fringe benefit. He can make withdrawals for various purposes. He can make a withdrawal when he is sick; you would call that health and welfare. He can make a withdrawal if he is laid off; you would call that supplemental unemployment benefits. He can withdraw when he resigns; you could call that termination pay. He can withdraw when he retires; you can call that a pension. If he dies the balance in his account goes to his beneficiaries; you can call that life insurance. So here we have all in one package, under one account, and without any particular label, a combination of sick pay, unemployment benefit, separation pay, retirement benefits, and life insurance.

Recently I looked at a booklet which described the benefit plans in New York City electrical industry. They had the following benefits in one plan administered by one board: retirement pension, disability pension, hospitalization, surgery, injury benefits, death benefits, replacement of tools and work clothing, rest home benefits, scholarships for the children, medical and dental care, a loan fund, and vacation benefits.

Recently I have been looking at some of the profit-sharing plans which consultants have been distributing to employers for their consideration. (Most of these plans are for unorganized groups, so here I am not talking about collective bargaining.) They propose that individual employee accounts be set up out of the profit-sharing revenues and used for disability payments, death benefits, emergency loans, supplemental unemployment benefits, as well as for the original and primary purpose of financing retirement annuities.

Just one more example. There was a very interesting agreement negotiated in Northern California in May of this year covering the plumbers. The agreement was not ratified, but it did have one provision of interest here. It would have set up a compulsory savings plan, into which management would have begun depositing 25¢ per hour to the individual account of each plumber. Then a joint board would have been established to authorize withdrawals for illness, emergencies, unemployment, or retirement.

These examples, I repeat, are only straws in the wind. Although every industry and every company has its own situation I'm just wondering if we won't see quite a development in the future of these flexible and multi-purpose fringe benefits.

In conclusion I'd like to say that it's always of great benefit to us at the University to be able to work together with you people in management at this conference. I always feel that I learn more than anybody learns from me. I think that my colleagues from Berkeley and UCLA who are participating here feel the same way. We hope you have enjoyed the conference and profited from it. We hope you will be with us again.

NEW SKILL REQUIREMENTS  
IN A CHANGING TECHNOLOGY

Discussion Leader: Sheldon Campbell  
Supervisor of Training,  
Rohr Aircraft Corporation,  
Chula Vista

Resource Members: Wesley S. Bagby  
Comptroller, Pacific Mutual  
Life Insurance Company,  
Los Angeles

Ralph M. Barnes  
Professor of Production  
Management and Engineering,  
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Los Angeles

Elmer F. Sproule  
Personnel Manager, Hughes  
Aircraft Company,  
El Segundo

NEW SKILL REQUIREMENTS  
IN A CHANGING TECHNOLOGY

Sheldon Campbell, Discussion Leader

Wesley S. Bagby

Ralph M. Barnes

Elmer F. Sproule

MR. CAMPBELL:

In England early in the Eighteenth Century there lived a demented man by the name of John Lud. One day in anger at a village boy who had played some practical joke on him, he chased this boy into a house where there were two machines that had been set up to make stockings and other cloth goods. These were some of the first machines developed during the Industrial Revolution. John didn't catch the boy he was after. He was a frustrated and angry man, however, and he proceeded to destroy the machines. He did this thoroughly. Shortly thereafter in England there came a period when people went around in large mobs destroying machines. Whenever anyone asked who destroyed the machines, these people said they were destroyed by Lud. As a result, John Lud achieved a sort of immortality for his perfectly senseless act -- an act which really had no motivation except anger. The destruction of machines, led by a man who called himself General Lud, continued for some time. The machines were blamed for a large labor surplus, the ensuing unemployment and poverty, and for a large number of related problems that then existed in England.

That early movement died out, of course, very rapidly. One reason was increasing prosperity; that is, the machines began to bring more benefits to the people of England. But to some degree we have always had with us Luddites and Luddite-ism. During technological change when new machines and new methods are being introduced, there is this opposition to the introduction of new machinery, sometimes with reasons no more sensible than those of the original John Lud, who was really venting his spleen against a world which permitted small boys to tease the village idiot.

Sometimes, of course, the motives are more understandable. People have seen machines as a threat to their skills, to their very existence. We might say that the modern-day Luddite may be present in any given factory where new equipment is going to be installed and may threaten someone's particular job. We can say too that Luddite-ism may be present on a larger scale where we have groups of people who see technological change as a threat to their existence or, more particularly, to the skill or ability which enables them to make a living. Imagine how the buggy whip maker felt when he saw the first automobile.

The constant presence of Luddite-ism, in one form or another, aggravates the problem of developing new skills in a changing technology. But it is compounded by other anxieties. There is the opposition from people who see themselves being displaced or threatened by the installation of new equipment and machinery. They fear they will be displaced, and they may fear for their chance to learn new skills. They may have roots in one locality and they don't want to tear up those roots. They may believe that the change may do away with the need for people or they may believe that people are being subjugated to machines.

In present day technological change, with which we will be concerned here, the degree of Luddite-ism and conflict will depend upon a large number of factors. I am going to mention three of them. One of them is time: the period of time it takes to introduce change. I think we can safely say that the longer the period or the more gradual the change, the less opposition there will be. The second factor is the world picture. Where you have war or the threat of war, change may be introduced and more easily justified. Finally, the degree of conflict or resistance to technological change will depend on the way management handles the administration of change and the development of the new skills which will be required. This is probably the most important single factor.

There are at least three main areas in which we have significant technological change taking place. The first of these is in the introduction of gas-turbine engines in automobiles and in aircraft. The second area is the development and use of nuclear reactors as a prime power source. The third area is automation. This probably occupies our minds most of the time as the most significant development. I would like to break this down into five categories: automatic data processing, automatic material handling, automatic manufacturing or processing, automatic communication systems, and, finally, the linking together of all of these through scientific programming and electronic control to achieve an automatic or semi-automatic factory.

Before turning over the program to our panelists, I'd like to say a word about the skills involved in these developments. However, technological change of the type that is taking place is not only going to involve mechanical skills, but also social skills. These are the skills of human relations and the intellectual skills of analysis, synthesis, thinking, and planning. There remains one other skill which will need to be developed with the outgrowth of technological change. This is the leisure skill. The use of leisure is not a problem which is caused by automation, but it is a problem which is accentuated by it, since one of the results will be a shorter work day or work week. Some observers believe this to be the most important problem of all. We may think, therefore, in terms of four different categories of skills: mechanical, social, intellectual, and leisure.

With this as background, I would like to turn the meeting over to Dr. Ralph Barnes, who will discuss some of the aspects of change in manufacturing industry.

MR. BARNES:

Since this word "automation" has attracted so much attention throughout the country in the last year or two, I'll confine my remarks to one aspect of this subject. There is a primary need to discover and explain what automation is, and what it will do for us.

General Electric is one company that very early saw the need for automation. They recognized that there would be a real shortage of factory labor. General Electric concluded that in many of the cities in which they will have factories ten years from now they could not find the necessary labor to produce the goods they would have to produce if they were to retain their appropriate share of the market ten years from now. Even at the gradual rate of increase in productivity per man hour, they still felt that it was unlikely that they would have a sufficient labor supply. Automation, they concluded, was a necessity, if we in this country hope to increase our standard of living at the rate we want.

MR. BAGBY:

All of us have some awareness of the technological changes that are taking place in production. They are pretty spectacular. The technological changes in office work are visually less spectacular than those affecting production operations. In spite of this, it is my personal belief that they will require so many varied new skills that they are going to have an even greater impact on the composition of the office work force than the factory changes will have on the production work force.

That's not only my opinion. Last November the Bureau of National Affairs asked a representative group of some 67 personnel and industrial relations executives to predict the spread of automation during the next five years. Generally, the answers showed a remarkable lack of uniformity. However, one question asked whether they thought the greater impact of automation would be on office work or production work. Eighty per cent of this group said that the greatest impact in the next five years would be on office work. Now that probably reflects the fact that automation has been generally applied to manufacturing rather than to the office, and that it is relatively new in the office. In the factory we have gone from manual ditch-digging to ditch-digging machines. In the office we are still ditch-digging manually.

I would like to concentrate my comments on the technological changes in accounting, record keeping, file maintenance, and reporting which will result from the use of electronic computers and electronic data processing machines. On the basis of my company's experience I want to tell you briefly what these changes are, what effects they are having, what effects I think they will have on the nature and composition of the office work force, and something about the skills that are needed by the people who run an automated office.

The experiences in my company will be fairly illustrative of what is happening in large-scale office operations. I'd like to give you a few facts about the subject in order to put our experiences into proper perspective. We write life, accident, health and group insurance. We're medium in size and operate nationally. By medium-sized I mean that we have a little over

two billions of life insurance in force and pay out 55 or 60 million dollars each year in benefits to our policy owners and their beneficiaries. We have an office force in our Los Angeles head office of about 900 people. Last year, after about three years of study, we installed a large scale electronic data processing system to do all of the record-keeping work and accounting work on our 350,000 ordinary life insurance policies. We have a staff of 60 people who are now devoting their full time to this project, although we are still in the program-testing, parallel operation stage. We don't expect to be in full operation on our new basis until 1957. At that time we expect that we will be able to eliminate from 150 to 175 of our present job stations. If we don't we eliminate the comptroller and several of his assistants! One way or the other we know we are going to save manpower.

I'd like to give you a brief description, first of our electronic data system and how it will work for us; second, of the kinds of jobs it will eliminate; third, the kinds of job that are done by the 60 people in our electronic record department; and fourth, some comparisons between the new skills required and those used in the eliminated jobs. The electronic computers and data processing systems that are used in office work are now business tools with tremendous capacity and flexibility. You can't think of them as larger and improved punch card systems. You have to reorient your whole operation. Specifically, in our shop, we have consolidated four different operating departments into one integrated system.

Our combined operations approach uses a single master tape file which contains our policy owner's name, address, premium, billing and accounting data, information about any loans he may have, and the status of the dividends on his policy. This includes all the basic policy data needed to calculate the value of that policy and pay claims. This master tape file has replaced as many as a dozen manual or punch cards records for a single policy. On about a hundred small reels of magnetic tape we have a full record of our 350,000 ordinary policies. These hundred reels of the master file are processed daily.

To try to put it into figures that you can relate to your own experience, a reel of tape will have on it the same information that you could put on 18 to 20 thousand 80-column punch cards. We can feed everything that would be on 18 to 20 thousand punch cards through the central computer in three minutes. That gives you some concept of the electronic speed involved. As these reels are processed, the information is updated to reflect additional premium payments, terminations, new issues, claims, and all changes in status. Premium notices are prepared when they are needed and, on the anniversary of every policy, dividends are calculated. Dividend notices are prepared and disposition of the dividends is taken care of. If you as a policy owner said that you wanted it to reduce the premium, that is done; if you said you want to leave it as interest, that is done; or the computer will prepare the check if you said you wanted the cash. Loan interest is computed on those policies that have loans.

In addition to the accounting and record keeping work there is the actuarial valuation work. This consists of complicated mathematical calculations determining what reserves we must maintain on the particular policy of insurance. This is accomplished by this same regular daily run as a by-product. We also get a great variety of reports as needed. All of our inquiries and service needs are grouped and processed daily against the master file. This means that the correspondence we receive today will be

processed in tonight's run of the master file and information will be available for reply at 9 a.m. tomorrow morning. Output data from the machine is on tape, but those tapes, without going through the central computer, can be hooked up to a high speed printer that spews out whatever information you need at the rate of 600 lines a minute.

Can you see how this will affect regular accounting and office procedures: Do you see the elimination of the visual records that we use so frequently for reference?

Perhaps one of the most important features of this system is that reports of all kinds can be prepared quickly as a by-product to your normal accounting operations. These will be reports that will have a currency and a completeness that is impossible under old methods. No longer will you have to do any sampling to discover where your sales are being made at the present time. You can have a complete breakdown of this week's sales, this day's sales, or this month's sales, the day after the policy has been placed.

Now let's talk about some of the jobs that this system eliminates. What kinds of people are in these jobs? And what happens to them?

When we complete the electronic handling of our ordinary insurance operations next year, we expect to eliminate 150 to 175 job stations. The personnel now holding these jobs can be divided roughly into three main classes. By far the largest in number are the relatively unskilled junior personnel in clerical jobs of a repetitive nature: the people who are doing the filing, the posting, the sorting, and the recording. They are performing tasks where only a bare minimum of insurance knowledge is required. Those are the monotonous heavy-volume jobs that best lend themselves to electronic methods. Those are the jobs where you get your highest turnover, where, even though we have pretty good personnel policy, we have to hire a hundred people to have 40 of them working for us a year from now. Those are the ditch-digging jobs in the clerical office. It's no problem to relocate the juniors who are in jobs of that type into jobs that are not affected by our electronic program, jobs for which greater judgement is required and greater opportunity is available. This group includes about 100 to 125 of the job stations that will be replaced.

My second class is a problem class. This group consists of 15 or 20 jobs held by people with more experience and seniority. Nevertheless these jobs are routine and require only a little knowledge of insurance. I'm talking about the kind of jobs where the person doesn't need to do any original thinking; all she has to do is to recognize the accepted way of procedure and be able to refer it to higher authority for action. Our more troublesome relocation problems are with this small group. There are not many job openings offering the salaries and job characteristics for these people. Whenever one of those rare openings into which they might fit shows up in a non-affected department, we make immediate transfers. We replace them with a more adaptable hire whom we think can be more easily relocated. Now even though we have been watching for these openings for two years, we have only replaced and retrained about half of that group. We have 8 or 10 still to go, and that's one of the main problems of our personnel department.

The third class of jobs that will have to be eliminated includes the 20 to 25 supervisory and senior staff positions. They are held by highly skilled people. Duties are primarily in the judgement area and of a supervisory nature. These people are required to have quite an advanced knowledge

of insurance. They have had a lot of experience, and most of them are adaptable to new situations. We know that we can't have too many people of that kind. There is going to be a retraining job here, and a few of them, particularly those who will be dealing with input data under the new electronic system, are going to have to take training temporarily from people who are beneath them in capacity or position. But this has all been explained to them ahead of time. We've already made the shifts for a couple of them, and we have had no problems involved.

I think I should say, and this is quite important, that when we first started to consider making this technological change a member of our top management talked to every one of our employees in groups of about a hundred. He told them the study we were making, what we thought it might lead to, and what would happen to them if we did acquire the equipment. We made them the firm pledge that every employee doing satisfactory work would be retained by the company and placed in comparable or more interesting work without downgrading of salaries. I think it is important that you make that decision. I have seen some companies that have not taken this step; they have had a good deal of unrest among the staff who believe that they will be affected.

The new jobs created by the electronic system are of four basic types: clerical, programming and methods, operations, and maintenance. Let's talk first about the clerical work. In converting our data from old records to tape form we require a staff of about 25 people, a superior type of clerical employee. It takes about eight weeks of training time to teach these typists to read and interpret old insurance records from which they are to type.

Our programming and methods work is the real guts of this electronic system. Each program step costs somewhere from \$3 to \$10 in clerical time before it is completed. These programmers analyze the details of the job that is to be performed by the machine and prepare a series of coded instructions which will enable the machine to do the job in minimum time. A good programmer is loaded with special skills. It's important that he has an inquiring, logical mind. A background of systems analysis experience and a knowledge of statistical principles are desirable. College level work in mathematics or engineering or business administration is very helpful; some authorities will say that it is essential. Two-thirds of our programmers were trained from within our own company. The others were hired for the job. We allowed our people to compete for these jobs, and we were surprised at those who came out tops in the competition. Some of those that we thought were our real top people just didn't have it. And then a few that we had buried in low level work and who said, "I want to take these tests," amazed us by their capacity to analyze.

To become proficient, a programmer must be able to prepare flow charts, analyze programs, code and build up new programs, estimate the cost, the time required, and the number of people needed to code and program the new machine operations. This takes about nine months' training. I am sure that you know that experienced programmers are scarce and in heavy demand.

Our operations staff is made up of five men now, and we are going to add two more next year. Operators are mainly concerned with getting the work done. They are more interested in a system of production than with the philosophy. But they must understand the processing system well enough so that if one segment of the system breaks down, the remaining machines will be kept busy. They also have to be sufficiently familiar with the logic of

the machine to localize troubles to aid the maintenance man. It's hard to put your finger on the special skills that are needed by a good electronics system operator. The chief operator is usually an engineering or mathematics graduate with prior experience on your particular kind of system. The rest of his staff needs about two months of formal training and about three or four months of on-the-job training.

We are going to increase our present maintenance staff of four men to seven early next year. Our chief engineer is a graduate with prior experience on our kind of system. His final staff will probably be made up primarily of technicians. We'd like to have it include some other graduate engineers, but there is an intense demand for them and they are inclined to regard this kind of work as good practical experience prior to going elsewhere as chief, or prior to entering designing and development work. Turn-over on engineers who start out on maintenance work of this type is terrific and we believe that we will be better off to concentrate on getting top-flight technicians with some engineering training.

I'd like to compare some of the skills in the old jobs which are being eliminated with the skills on the new jobs which are created by these technological changes. As a generalization, one can say with a great deal of emphasis that the advent of electronics and office procedures has created many up-graded job opportunities. Our own experience demonstrates that the people we transferred from other departments in our company are using many more skills than in their prior jobs.

I'd like to spell out for you a specific study we made on the subject about six months ago. In the clerical phases in converting data, only six of our people were transferred from other departments of our company. After they were in their new work an average of only nine months, they were receiving an average of 22% more in salary than before their transfer. Had they stayed in their old jobs, assuming normal advancement, they would have been receiving about 8% more. With the more highly skilled programming and methods work, 14 of the men in our group were transferred from within our company. They had been with us an average of six and a half years before transfer. After they had been in the electronics work an average of a year and a half, their salaries were more than 40% higher than before the time of transfer. At their old jobs the salary advancement would have been about 12%. The eight women in the programming and methods work had been with our company less than a year in lower-level jobs. After they had been in the electronics work for only 13 months, they were getting 52% more salary than before their transfer. That compares with around a 10% change had they stayed in their old jobs.

I have presented the experiences of our company, not as typical, but merely as an illustration of the fantastic changes that are going on in office work everywhere. Literally thousands of business and government organizations have studied and are currently studying the possibility of using electronic data processing machines in their office operations. Not all of these studies result in a decision to go electronic, but an increasingly large percentage take that course. Each individual company which does decide upon an electronic installation has to fit the system to its own specific needs and desires. It has to fit its electronic personnel requirements to its own system and the applications that are going to be made on that system.

I'd like to name some of the kinds of office work that are already being performed by electronic systems. Government agencies are using them

for accounting, statistical analysis, and reports of various sorts. Public utilities use them for customer billing, accounting, and rate calculations. Department stores and mail order houses are making increased uses of electronic systems for inventory control, order filling, and accounting. Banks have them for customer accounts. Manufacturing companies are using electronics in the office for payroll accounting, increasingly for production scheduling, production control, and material control.

What does all this mean for the future of office work? We've got, right now, an increasing demand for persons experienced in electronic methods and programming. It's a field, as I mentioned, that is taking on a professional status. And it's a field where women have a pretty fair shake at the dice. I believe that the present demand for programming personnel with experience is going to double each year for the next four or five years. There's also an insatiable demand for operators and maintenance men. Fifteen years ago in this country there were only five million workers engaged in clerical work. Today there are more than eight million. Electronics can and will take over many of the tasks now performed by these clerical workers. Consequently, our total productivity will increase. Fortunately, these electronic systems take over the dreary, monotonous, ditch-digging, repetitious jobs that require a pair of hands and a person to be there. The new jobs are stimulating jobs that increasingly demand more of the mind and less of the hands. I think we can say with certainty that the most challenging aspects of these new electronic methods are the human as opposed to the mechanical. Office work in the future will find fewer people doing things that machines can do and more people doing things that only people can do. I think it will be good for all of us.

MR. CAMPBELL:

Thank you for the interesting and stimulating presentation. Elmer Sproule has some rather exciting developments to report about both automatic manufacturing and the development of skills necessary in electronic manufacturing facilities.

MR. SPROULE:

There are several areas of skills with which we are concerned and I will describe them to you briefly. First of all, our company manufactures the electronic devices which are used by the Air Force. The actual assembly of these devices is relatively simple. It takes us eight to ten days to develop the necessary skills to do this type of assembly work. Consequently, we don't consider this much of a training problem. We get into the real problem in the sub-professional levels with the technicians. Here's where we have to do the real educational jobs. We find that it is impossible to hire people who have had the experience upon which we can build. We find it necessary, therefore, to select people who have the potentiality to develop and give them this training. This type of training takes as long as one year. It is a combination of production training and classroom training. Frequently these technicians desire to go further with their education. We encourage their working toward a degree in our "After Hours" program and we partially reimburse them for its cost.

We are firmly convinced that one way in which we can meet the challenges of the future in creating people for these new skills is through apprenticeship development. Hughes is the first company in this state to start an apprenticeship program in the field of electronics. We presently have 22 young people in this program and we'll build the program up to around 60. This is

a three year program from which we will have about 20 to 22 graduating as well-qualified technicians yearly.

We know that the universities are not creating engineers as fast as we would like to have them. We're several thousand short now, nationally, and we anticipate that this shortage will continue into the next decade. I think that, particularly in the West, our schools and industries might well give some attention to cooperative educational programs. Where these programs have existed in Eastern universities they have been very successful and very fruitful. This would be a way in which we could increase the source of engineers to meet the needs of this new era of electronics.

Industry in the years ahead should give more attention to sponsoring scholarships for qualified young people in the engineering field as a means of increasing the supply. Some organizations have done it with notable results. Our whole counseling effort might be fortified somewhat in the high schools in order to direct more people into the engineering professions.

There is one other facet to this problem as I see it. Our efforts in the educational field have become specialized, and we tend to overlook the importance of the humanities. It might be advisable to give more attention to a blending of liberal arts courses into the specialized curricula. One of the basic problems in industrial organizations is the maintenance of harmonious inter-group and inter-personal relations. An understanding of disciplines other than that of one's specialty will contribute to better understanding of those relationships.

MR. CAMPBELL:

Thank you very much, Elmer. I was very interested in your comments on the liberal arts program. I am a member of the Science and Mathematics Committee of the San Diego School System, as is Dr. Critchfield, whom you have heard. At our second meeting, when we were concerned with the problem of encouraging more people at the high school level to develop engineering skills, programming skills, and mathematical skills, I got a little alarmed lest we overdo this, and I brought this up at the meeting. I was delighted when one of the other members from industry said that one of the problems they meet is the lack of background in the humanities and liberal arts field among some of the people they had to deal with. So this is also an area of skill that we should be concerned with.

We'll open up the meeting for your comments and questions.

QUESTION:

I'd like to ask both Mr. Bagby and Mr. Sproule to explain some of the mechanics of their training programs for new skills.

MR. BAGBY:

I'll restrict my answer to programming and methods. First of all we gave a series of lectures for interested employees, delivered on their own time. We thought we might get 50 or 60 people, but over half of our shop, 470 to be exact, signed up for these courses, and 400 actually went through with it. Those people who felt they were qualified took certain power tests which emphasized logical analysis, mathematical ability, speed, and accuracy. We then gave these people three months of education in the techniques of the work and then we found that about three of those we had selected hadn't been able to make the grade. On-the-job training was carried on by the programmers with more experience and by a senior programmer on Remington Rand's staff assigned to us full-time.

MR. SPROULE:

We select our trainees by testing them, too. There are three levels of technicians that we develop, depending upon their ability. The top level is the level of the technician who tests out a total electronic system and is able to put his finger on the reason for malfunctioning within that system. This takes a high level of skill. The next level is what we call the unit tester who can test out and find the reason for malfunctioning in segments of the total system. The next and lowest level is what we call a component tester, who has the responsibility of testing just one component of the total system.

There are actually three methods of teaching that are used -- at times simultaneously: classroom lectures that cover basic background; laboratory experience and experiments in which synthetic problems are worked on; and, finally, on-the-job experience.

QUESTION:

And how long does it take a man to go through?

MR. SPROULE:

Depending upon the actual level of technician you are developing, it could take as long as a year.

MR. CAMPBELL:

And I'm afraid it might take us as long as a year to discuss this problem of New Skill Requirements in a Changing Technology. But we've reached the end of our time. In these hours of discussion we at least have some better idea of the problems that face us. With the new labor market that we are investigating at this conference, we can at least be sure of one thing: our problems won't include Luddites. Perhaps we might wish that were all we had to worry about.

In closing, I'd like to thank the members of our panel for their excellent discussion of the subject -- or should I say their superb introduction to it. Now we can stop resisting temptation and go out to enjoy the sunshine and sights of Yosemite Valley. Thank you.

Workshop Session

September 13 and 14, 1956

THE PROFESSIONAL MARKET

Discussion Leader: Abbott Kaplan  
Associate Director,  
Institute of Industrial  
Relations, and Assistant  
Director, University  
Extension, University of  
California, Los Angeles

Resource Members: W. W. Davison  
Vice President, Standard  
Oil Company of California,  
San Francisco

John A. Galen  
Assistant Director of  
Management Development,  
Crowl Zellerbach Corporation,  
San Francisco

THE PROFESSIONAL MARKET

Abbott Kaplan, Discussion Leader  
W. W. Davison  
John A. Galen

MR. KAPLAN:

Our workshop subject is the Professional Market, by which we mean our engineering and scientific employees. It also includes our managerial staff. Let us first discuss some of the problems our panel members and the rest of us in the room raise. If we can identify some of the major problems first, we might then call on our panel members again to indicate ways in which their companies or other companies have attempted to solve some of these same problems.

Let's call on Mr. Davison first.

MR. DAVISON:

We might divide the problems associated with technical and professional employees into four general categories. Number one on the list is getting them. Without any order of preference, the second would be keeping them. A third would be keeping them satisfied, or at least contented. The fourth would be the very best utilization of their abilities and skills.

One of the problems we encounter in recruitment and to which, frankly, we haven't found a complete solution, is the increasing level of starting salaries. We find that if we are not particularly careful we may be paying a new man almost as much as the man who has been with us a couple of years. Another problem we see developing is the effect of those fast-increasing hiring scales on the rest of our organization -- management operating people, and others. Another problem that we have encountered is keeping the professional employee satisfied. Dissatisfaction frequently arises when the professional employees feel they lack opportunities for promotion, particularly where they have young supervisors. They get the feeling that unless

they become management men they have no place to go. We think we have that one licked by making use of professional titles and by increasing their salaries in such a way that a man can progress professionally just as far as a man can progress managerially.

Utilization is a major problem. It wasn't until the last few years that we felt the need for increasing the amount of what we would call semi-technical people to supplement the work of the technical employees. We have done that by adding to the semi-technical and clerical work force to make sure that we are not requiring valuable technical men to spend time doing work that a clerk or a semi-technical man could do.

The third problem is the need to keep the technical employees satisfied in their work. It certainly is a seller's market and the various associations of technicians are very active in seeing to it that technical and professional people are getting their due both in the salary and in the personal treatment that they receive. We are trying to make progress along those lines also. We had the experience of going through a recent employee opinion poll and had a chance to compare that with one that was made in 1951. It was rather interesting to see a more critical attitude on the part of technical people toward their demands on non-monetary matters. The feeling that they weren't being treated as well as they should be professionally was evident. The engineers, particularly, seemed to feel that they should be treated in the same way as other professional men, such as lawyers and doctors. There undoubtedly are other problems which Mr. Galen will want to mention.

MR. GALEN:

Fundamentally, I don't have too much more to add to Mr. Davison's list of problems. Perhaps we might ask the question: What do we mean by technical personnel? We commonly think of engineers and chemists. I wonder if we shouldn't give thought to the problem of management itself, since the art of management itself is a technical problem. In this connection, we are facing increasingly this problem of the specialist versus the generalist. The very nature of the traditional training that a man gets in the pulp and paper industry almost makes him a specialist. After a series of promotions, however, the employee finds himself dealing with more than one department or one function. Here is a need for a generalist, and yet this man must be a technician and a specialist in order to intelligently manage and to have the respect and support of his subordinates.

We conducted a very rough survey and came up with the following findings, which were rather startling to us. Perhaps they're not unusual. Of a group of 100 technical people who had been hired in the last five years, over 50% of them in this five-year period had been syphoned out of the engineering or technical phase of the work, for which they were originally hired, into a supervisory or managerial capacity. Can we keep enough inflow coming in to supply not only the engineering and technical needs, but the managerial or supervisory positions as well, which legitimately require a technically trained individual?

Another problem is that of assessing the specific types of technical personnel we need. What technical skills should he have in the corporation? What are our future needs, so that we can plan for them?

A third area is the utilization of personnel. Increasingly we are encountering a situation in which pure research or pure engineering gets pushed into the background because problems of the applied nature need to be taken care of today. In a growth industry this could become a very serious problem, and unless we find ways of either increasing our supply of trained people or reorganizing their functions, industry could certainly suffer. How can we best organize our activities so that we can get the fullest return from the technical and engineering talent that we have hired?

MR. KAPLAN:

Are there problems that you feel have not been mentioned that you believe are problems -- problems that you have encountered and that you think other companies might have encountered in this area?

QUESTION:

What about this matter of starting salaries for the young engineers and scientists, compared with the salaries of those men with some seniority in the company? This is a complaint you frequently hear from the older engineers. Do you find this to be a problem in your companies? What solution do you have?

MR. KAPLAN:

We have some evidence that the problem has been exaggerated. A recent study has shown that the actual starting salary itself has only changed to the degree that the whole wage structure has changed. Starting salaries for college graduates in engineering have risen from four to six percent, which is about the rise in the whole salary structure. I know that this would seem contrary to the general impression abroad as to what has been happening to starting engineering salaries and to the reports that we get from the engineering placement offices in our own school of engineering at U.C.L.A. We heard the same sort of complaints during the past two years. Two major surveys have been made to see what actual evidence could be developed that would shed some light on the subject. They indicate that in the first five years, engineers progress relatively rapidly in terms of compensation. Then they level off. There is a direct relationship between number of years of graduate work and salary progression in the first five years. But after that there is a plateau, and the managerial responsibility and other factors begin to enter into the salary structure; the spread for a given period of years' experience gets wider and wider as it goes beyond six years. We tested a similar survey taken by the Merchants and Manufacturers Association in Los Angeles and got exactly the same results. The engineers with six to ten years of seniority, who have reached that plateau, view the relatively rapid rise of the youngsters in contrast to their own relatively stable salary status. This underlies dissatisfaction on the part of the older engineers.

What about this problem of the ceiling, the plateau, that people reach in engineering and beyond which few of them can rarely go? Do you think the plateaus are set too soon in their careers, perhaps? Can you expect them to remain satisfied?

COMMENT:

I never met anybody who was satisfied to stay on a plateau and who would be expected to be asked to stay there. This is a constant problem. You have to pretend at least that the plateau doesn't exist.

COMMENT:

The engineers we are losing are the ones for whom we cannot do anything, the ones we cannot raise to managerial jobs.

MR. KAPLAN:

You are suggesting we must recognize that everybody can't become president and that we must set realistic sights. The question is: Is this particular ceiling or plateau for engineers set realistically as compared to other professions? Of course, this problem faces the tool and die maker and the normal production employee, too. He also gets to a plateau, unless he can negotiate a higher wage rate. Once he is at the top of this classification he has no other place to go. In that sense most wage earners hit plateaus sooner or later. Is this comparable to the engineers and the scientists? Can we say that the same holds true for him, and that he's just got to recognize that this is his maximum level and that he won't go any further?

MR. GALEN:

Beyond a certain point your career depends entirely on what you contribute to the progress of the company or on how valuable your services can become. Regardless of whether you are an engineer or chemist. Maybe with that background you can get into the managerial end of it.

MR. KAPLAN:

Perhaps we have a new phenomenon today arising from our experience in the last 10 or 15 years. There has been no time in our history when we have had in industry such large concentrations of engineers in single factories and even in single divisions as we have today. I know of one division in a company that has approximately 1400 engineers and scientists. One division! In that particular division you have supervisors and a hierarchy within it, but, in a sense, the mass of them are rank-and-file engineers and scientists. Now, that's a new concept in our civilization. We never had rank-and-file professional men. The very concept of the professional man was that he was not a rank-and-file person. What implications does this discrepancy between the traditional social role of the professional man and his present status have for the engineer and the scientist? Traditionally, a scientist has been a creative person, to some degree the master of his own destiny -- almost like a university professor.

COMMENT:

Perhaps we may find these engineerings banding together, leaving the corporations they work for, and setting up their own independent organizations.

COMMENT:

We've certainly seen plenty of examples of that in Southern California.

MR. DAVISON:

We have tried to classify our professional people into the categories at which they specialize, and treat them the same as our managerial specialists. What it means for all those people who are really specialists and really best serving the interests of the company is that they have a chance to progress without following some pre-formed pattern. In effect, we are considering them as part of our management staff. We now look at

the man in the job, which makes it possible for the individual in a professional job to be subjected to the same type of treatment or the same salary curve as the technical production people. We think it is a step in the right direction. It has helped us to counter the idea that he had to become a part of line management to get ahead.

MR. KAPLAN:

We have two problems here: the utilization of the technical help we've got and, secondly, how to give them the status and the satisfactions to keep them happy and productive on the job. Now what about utilization? Do you feel that there is inadequate utilization of the actual technical and engineering help that companies do have? Is there any validity in the charge of hoarding? Don't confess to the sins of your own company, confess for somebody else. This is not the PCC.

COMMENT:

I'm from a big outfit and we have three times as much work as we have people to handle it. We are obviously not hoarding them.

COMMENT:

One of the largest industrial engineering firms in the United States is very frank about that. It helps them secure business. They go out and buy up all of the engineering talent they can get. Then you have to give them the business.

MR. KAPLAN:

Perhaps the answer is that there's very little of it going on now because you can't keep them any more; there are too many other job openings for them. Towards the end of the Korean War a lot of our engineering students were placed in some of the aircraft companies in Southern California but they just sat around for months, almost literally doing nothing. But they just wouldn't take it for very long -- particularly the young kids who were eager and felt they had to get some practical experience. There are too many other job offerings available. So I don't think the problem of hoarding is as critical today.

What about this other aspect though. What about the matter of effective utilization of technical and engineering skills? Are all the jobs assigned to technical and engineering people correctly assigned? Can some of those jobs be done by less well-trained personnel? In all business organizations we find people doing jobs which could be done by less skilled, less well-trained, people. That creates a dual difficulty. On one hand, the people aren't as happy as they might be because they aren't adequately used. On the other hand, a shortage of qualified personnel results because of this under-utilization. Now, do you think that a thorough-going analysis of the jobs that engineers are doing might be fruitful in determining what engineering skills are really needed to perform those particular functions?

Those of you who have serious shortages in the technical and engineering skills might consider some of your jobs. Where you can't put the entire job in someone else's hand, you might at least break part of it down for lesser skilled personnel.

COMMENT:

It has been my experience that the responsibility for evaluating the jobs of the professional worker in order to delegate some of the duties to semi-professional employees must rest with top management. The engineers, for example, are reluctant to give up most of their duties. They have a craft-like pride in their functions.

COMMENT:

There are all kinds of arguments as to why engineers shouldn't release any of their duties. Take a major construction project as an example. The engineer in charge wants to be responsible for the whole thing. He feels he will lose control of the job otherwise. Perhaps a sketch would serve a certain purpose instead of a complete drawing. Where it is a case of turning the job over to a draftsman, the engineer states, "Well, I can do it myself in less time than it takes him to do it." The net result is that he occupies much of his time making these sketches and these drawings and doing his purchasing and many other tasks he certainly doesn't have to do.

COMMENT:

Our company has followed this policy. We find that we not only make effective use of the engineers we have, but, at the same time, we are training the sub-engineers for professional engineering jobs in the future. We erect no artificial barriers between, say, the position of a highly skilled draftsman and an engineering position. By an artificial barrier I mean, as an example, the requirement of a college degree for certain jobs.

MR. DAVISON:

One other thing that we found to be of value is the use of a reimbursable voluntary educational plan to up-grade these people. Many, I'm sure, never get a degree out of it, but at least they can become enough more proficient to be able to get into the technical assistant groups or the sub-technical groups. This applies to clerical employees as well as the more skilled employees.

QUESTION:

Many English companies will select particularly bright workers and send them to an engineering school for an engineering degree at the company's expense. Has this been done here?

MR. GALEN:

Several California companies reimburse their people, as Mr. Davison mentioned, but I don't know of any which have gone so far as to send their people all the way through college.

MR. KAPLAN:

Now, let's go on for a moment to the area of the engineers as managers and as supervisors. What kinds of problems do you have in that area? First there is the problem we have discussed; that the engineers frequently feel they are at a dead end unless they get into a managerial or supervisory position. What problems are there in that transition?

COMMENT:

It's a matter of broadening a man's experience. It's like a merry-go-round. Pick them up and place them over in another place. They get broader experience in that way. They get a better viewpoint of the whole operation and are better prepared to step up.

MR. DAVISON:

It does seem to me that we should tag every one of our managerial positions that doesn't require some technical background. Even if it doesn't need it you still may put some of the technical people in it for training.

QUESTION:

Is there any other professional group which is better qualified than engineers for management?

MR. KAPLAN:

The dilemma is that engineering students have little time to take courses other than those which are technical while they're at college. Their curriculum doesn't call for other courses which would equip them with human relations skills.

COMMENT:

MIT is beginning to do some very interesting pioneering in this field. The engineering curriculum there includes a great many more courses in the humanities than is traditional in engineering schools. MIT seems to have concluded that better managers will be trained that way.

COMMENT:

Any kind of managerial work not only requires a technical knowledge but also some kind of skill and understanding of other people, if you are to have a smoothly functioning organization.

MR. KAPLAN:

We have been asking whether or not the lack of human relations skills is somewhat inherent in the training of scientists and engineers. I think generally it's been found that it is. The problem is greater because of the background training and experience that they have had. The asset that the engineers tend to have is normally a greater objectivity in examining problems than a person with less scientific training. But the engineer, scientist, or research person generally has been preoccupied in most of his professional training and experience with working on things and with scientific ideas, rather than with people. Peculiarly, he has tended to work either with a few other people or entirely by himself. In other fields and occupations most people have been working with people, even when they haven't had any formal training in that area. The difficulties have been most acute with research scientists.

Schools of engineering, not only at MIT but also at UCLA and other schools, increasingly recognize the fact that a large percentage of the people whom they graduate as engineers will be doing very little engineering as such after ten or twenty years. They will be executives of one kind or another with comparatively little training for these managerial positions. These schools do not propose that they ought to have a combined engineering

and business administration kind of program. What they are suggesting is that the high degree of specialization in engineering to the almost complete exclusion of the humanities and the liberal arts has given them less insight into human relationships, social relationships, and into the economic implications of the jobs and functions they are going to perform.

QUESTION:

Don't you think that a man's interest enters into it also? It seems to me that the greater the interest in the physical sciences, the less interest the person will have in the liberal arts. In other words, it's just a nuisance to them.

MR. KAPLAN:

We do not have a definite answer to that question. For one thing, if a youngster going to a professional school thinks industry's demands on him are going to be for great technical competence and excellence, he is going to concentrate on that. He's going to say, "What's the point of taking a course in philosophy or English literature? When I go on the job that isn't what they are going to want of me." So you really don't know whether it is a lack of interest or whether it's his conception of the demands that are going to be made upon him that determine what he is going to prepare for.

COMMENT:

He probably doesn't have a choice, either. In the current curriculum the demands are so great that he doesn't have time for courses in other fields.

COMMENT:

In my engineering training I was exposed to a number of courses in the humanities. But I don't think it has been of great value. I can't understand how a course in philosophy helps me in my human relations problems in an industrial situation.

MR. KAPLAN:

The point you raise is, I think, a crucial one. What is the connection between philosophy, literature, poetry, or any of the other humanities, and handling people on the job? And you're right in suggesting that the fund of knowledge has expanded. There is so much technical knowledge in engineering that a person has to get before he can start on his work career that it's becoming increasingly difficult to expand the curriculum.

Now, I doubt whether it would be healthy in our culture to keep postponing the time of entrance into the labor market. The extreme example of this postponement is in medicine where a man is practically 30 or 31 years old before he can start earning a living. I would suggest that this is an unhealthy postponement of the work career. I don't think that we would want to encourage it in engineering and other fields. It has been suggested, as you know, that engineering be made completely a graduate program, in which a student takes a general degree in the first four years and then spends an additional two to four years acquiring an engineering degree. I am not in favor of this policy.

I believe there is an alternative solution. In view of the increased leisure time resulting from increased productivity and increased longevity,

there is an opportunity to learn after completing a formal period of training. A notion that has held on very tenaciously up to now is that when your formal period of education was complete you were then educated, and there was no more learning to do. I think that's a notion we must explode.

It's interesting to note that in University Extension Courses, for example, increasingly the people whom we are attracting are not the uneducated, but rather the educated people. About one-third of the 165,000 enrollments in Southern California have bachelor's degrees. More than two-thirds have had at least two years of college. Seven per cent have graduate degrees, and over three per cent have doctorates. The level of general education in the country is increasing, and, more and more, people are continuing their education.

It has been suggested that there are certain things that we tend to teach in school which might best be taught on the job. There are other things that might be taught in school which may not seem to have direct relevance to the job but may have a good deal of relevance for the qualities which we are seeking to achieve in our labor force, and particularly in our highly trained labor force. I can offer some very interesting evidence on the basis of experiments and investigations that have been made in various companies -- for example, at Bell Telephone and Standard Oil. They discovered at Standard Oil that, in spite of the fact that they had a large preponderance of technical people employed (particularly geologists, petroleum engineers, and chemists), a sizeable number of people coming up into executive positions were products of liberal arts education, people who were able to function just as effectively in those positions as did the people with the straight technical training and experience.

In the Bell Telephone Company they feel that in an industry whose policies are so interrelated with what is happening politically, with what is happening in the general economy, with what is happening internationally, the kind of executives they require are not people with highly specialized, narrow training. Rather, the people with a broad liberal arts training tend to satisfy their needs better. It's interesting to note the people who have made these statements: Irving Olds, recently retired chairman of U. S. Steel and Gillan of the Bell Telephone Company. Bell Telephone Company established a program in which about 30 of their executives, just below the highest level, were sent to the University of Pennsylvania for a whole year. They studied philosophy, history, and literature and were completely removed from their jobs and duties. The experiment is still in its infancy -- it's only the second year that they are doing this -- but they have got some very interesting reactions from the people who have taken these programs.

At the outset the participants didn't see what it was all about -- why it was important to study these things, or what possible implications it could have for their jobs. Their reactions were recorded when the course was completed and again after six months back on their jobs. I think their reactions are extremely significant: they felt that more and more they began to think through both implications and alternatives of policy. They were beginning to make decisions more quickly than they did before. These changes are due to the fact that they had become accustomed to the exchange

of ideas and thoughts on a theoretical level, which, at the time, did not necessitate any immediate decision but did necessitate agility of thinking. This type of education was quite different from that which they previously had when a professor presented a body of information that they had to master and merely apply in terms of formulae or factual information.

This kind of broad training is not a substitute for technical training. That isn't the point. The point is that there is a basic amount of skilled training in the substantive areas in which people are going to operate; but that, in itself, is not sufficient. All aspects of the man and the man's personality have to be developed if he is going to operate effectively as a leader and as a manager. In the course of studying philosophy and literature you get perceptions of people and of ideas that professional training does not provide. These are the conclusions at which many people are arriving.

MR. GALEN:

Does that mean that you carry on this kind of education later as additional training?

MR. KAPLAN:

Either later or simultaneously. We do not have to assume that a man in his undergraduate work must complete all of the scientific and engineering training and all of the humanities that he is going to have. Rather, he should get enough of the engineering and technical training to enable him to get started in his chosen occupation and enough of an exposure to the humanities to give him the kinds of insight that people as educated human beings should have -- at least, enough that he will want to continue his education in these areas.

MR. DAVISON:

I'd like to return to one of our earlier subjects. We talked a great deal about keeping the engineer satisfied, or giving him the chance to advance without having to go into the regular line management hierarchy. But that still requires some definition. What kind of recognition should we give him?

COMMENT:

Any one of the many status symbols: a private office, private parking space, personal secretary.

MR. KAPLAN:

Perhaps an involvement in the humanities would stimulate him to reconsider his individual values and our society's values to determine what recognition in our society entails. Primarily ours is a pecuniary civilization, isn't it? And I'm not saying this disparagingly or approvingly. I'm stating it as a simple fact. In our society the predominant influence is the material, the pecuniary one. Our rewards are primarily though not exclusively monetary ones.

[Editor's note: Mr. Davison asked if any of the participants in the workshop had had experience with advanced management training programs. Among the programs in which they or members of their

companies had participated were short concentrated programs, two year programs leading to a degree, accounting courses, and courses in philosophy. Mr. Davison described several programs in which his company had participated.]

MR. GALEN:

Is there any criterion you can use to determine the success of those programs?

MR. DAVISON:

As we look back over a period of years, we can point to quite a number of people who have participated. Nearly all those people have been successful, but I have a feeling that they would have been anyhow.

COMMENT:

This raises the question of whether the company should limit these programs to only the most promising employees. Wouldn't it be valuable to give the less talented employees an opportunity to improve? By selecting the most talented it is difficult to measure the success of these programs.

MR. KAPLAN:

We're not entirely certain what the answer is to the question of the success of these programs. In this matter of liberal arts education for management there are some complicating factors. For example, a man who has been completely the product of our business civilization gets exposed to philosophical ideas for the first time. It may be rather disturbing at the outset. He may have gone along thinking that the most wonderful thing is to get more and more money, a higher and higher position, a better and better house. He's respected in the community. He's going places, which is the American dream, essentially. Suddenly he starts worrying about his soul! Suddenly he says to himself, "What am I doing here -- turning out missiles that are going to kill people? Is that what I ought to be doing with my life? Is that what man is dedicated to? To hell with this. I'm going to go to the desert and read the Greek philosophers and let the business world go." I'm putting it rather extremely, but there may be basic conflicts that have long been buried which are suddenly brought into the open. They can be very disturbing. He starts questioning the company's policies: "Is this ethical? Should we be doing this? Are we loving our neighbors as ourselves when we attempt to put them out of business?" Now, this can be pretty radical.

Well, I feel strongly, as some of you know, about the importance of developing well-rounded human beings who demonstrate intellectual curiosity and growth and concern for intellectual, spiritual, and aesthetic values, as well as material ones. But I think it's a mistake to try to sell the liberal arts on the notion that such a program will make better business people. I'm not sure it's going to make better business people, in the old sense of the term. I think it will make him a better citizen. I think in the long run our society and culture will benefit from it, but whether it is going to increase the company's profits of that year, I don't know. Perhaps profits may suffer. I don't think we should be too glib in attempting to sell it as a gimmick. "Study Plato and your sales curve goes up!" I don't believe there are any such correlations.

But I think our concerns in the long run have to be with our people as people and with our society as society. We have for too long, perhaps, been primarily concerned with the production of things. We have established the highest standard of living in the world. This is a wonderful thing, but we should also have an opportunity to dedicate ourselves and change the direction of our culture to make life more meaningful in areas other than the material.

MR. DAVISON:

Can we still be competitive with our friends in Russia?

MR. KAPLAN:

Well, this is the way we are really going to be competitive in the long run, because it's this kind of a society that makes for a free society and a free mind. I'm sure Russia can equal us in materialistic progress. They've demonstrated it. Their rate of increase has been greater than ours in the past twenty years. Where we are going to beat them is not in those areas, because in the long run those are not the most important ones. They are important for the Chinese and the Indians, because they don't have anything. But I am suggesting that you don't develop free minds in free people by merely giving them more automobiles and more houses. The Russians will give them that, but they are not going to have a free people, and, in the long run, they are going to have a dissatisfied people.

These aren't the values that we want to attain in our society -- at least this is something we should consider. Are we going to accept the values in our society that have developed without our conscious control? Many of these values have almost crept up on us. There are many values in our culture, frequently contradictory ones, which we recognize for one purpose and don't for another purpose.

A great English novelist put it very well when he said of the English, who at one time were and perhaps today still are great readers of the Bible, that the Bible was the Englishman's ledger on Sunday and the ledger his Bible on weekdays. You see the point. We preach certain points and we preach them honestly. We say love thy neighbor as thyself -- unless he is your competitor. We don't add that. But in practice that's what we do.

I remember in 1945 when I had just returned from the Pacific and was going to Europe on some reconstruction work that my wife and I decided to sell our car. Cars were at a premium in 1945 and she said, "Well, how do I sell?" I said, "You go into the dealer and ask what the Blue Book price is on a four-year-old car and say that's what you want for the car." She mentioned this to a friend who said, "You're crazy; you can get \$500 or \$600 more than that." My wife naively asked, "But isn't that against the law? Isn't that what they talk about when they talk about black marketing?" And the person answered, "Of course, but don't be so impractical." My wife should have said, "You want me to perform an immoral, illegal act." But you couldn't say that to people; you would be unctuous. It is assumed that you don't mix business with ethical considerations that you talk about on Sundays.

This is putting it in extremes, perhaps, but we do have a lot of conflicting values of this kind in our society because many of our values, such as our ethical values, stem from an entirely different kind of society, from a pre-industrial society. A lot of other values have just developed in our industrial culture. Here they are, living side by side, and it's a very uneasy marriage. Most of us have never taken the trouble to examine them, to say: these values I will accept and I will live by; these I will not. These are contradictory and I've got to make my choice. But each man is a microcosm of all these conflicts of values in our society. And we have never done anything to resolve them. In a small way this is precisely the kind of conflict that is going on inside the engineer, because he is a more educated person, a more highly trained person. The higher up on the ladder you go the more crucial some of the conflicting values become.

And that's why again I suggest that the humanities may have some answers. I don't mean absolute answers, but at least answers that will stimulate a rational consideration of values, of aspirations, and of objectives. Otherwise, I submit, we cannot build a rational society. And if we are rational human beings and don't build a rational society we are not going to have any society.

THE EFFECT OF FRINGE BENEFITS  
UPON THE LABOR MARKET

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THE EFFECT OF FRINGE BENEFITS  
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George H. Hildebrand, Discussion Leader  
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Irving Pfeffer

MR. HILDEBRAND:

I think we might begin with some general questions. What are fringe benefits? What are the different categories that we have in this whole group of costs? The term "fringe", in my recollection, was introduced during the period of wage controls in World War II. The word "fringe" itself may, I think, have come from the song, "Surrey with the Fringe on Top," from Oklahoma! Fringe suggested something ornamental and decorative and not very important. In the War Labor Board the term "fringe benefits" came to be used to describe what you might call minor benefits in contracts between unions and management. "Fringe" was something that wouldn't make much difference to the company's costs and therefore wouldn't upset Wage Stabilization. The main costs were connected with the basic wage rates and piece rates and so forth, and these costs were controlled extensively.

Long before World War II and the War Labor Board, however, many companies had introduced what you might call supplementals to the wage contract. Companies did this on their own without any union pressure at all when they introduced, particularly for salaried employees, paid vacations or paid holidays, possibly even some kind of modest medical plan. The hourly rated, blue collar, or production workers, in general, were not granted these benefits. The benefits were generally assumed to be prerogatives that were extended only to the so-called permanent white collar force: the salaried people and the executives. At the same time, long before World War II, the trade unions also negotiated certain benefits that were not direct basic wage rates. Paid vacations was one of these. But I suppose the most important benefit that the unions went after was premium pay for hours in excess of standard for the day or the week -- overtime pay. Though fringe benefits existed prior to the war, we know that they became of major importance only after 1940.

Fringe benefits are supplements to direct labor costs. They are, however, no longer "fringe", in the sense of being marginal or minor. The cost of these supplementals is certainly no longer negligible. Hence when we speak today of fringe benefits we are really speaking about a whole new dimension in the labor wage bargain, a new dimension that makes collective bargaining more complicated and extensive. And the problem of computing the costs is made much more difficult for the employer.

I have listed a working classification of fringe benefits, using four categories. It may well be that you'll think of some other items. I followed closely the Department of Labor's definitions. The Department had the problem of working out an accurate accounting system -- assuming that one is possible -- which would take care of all of the fringe supplementals. They also had the diplomatic problem of giving these forms of compensation a title. They couldn't call them "fringes" or "benefits" because the unions objected to this designation. They finally arrived at the fancy title, "Supplemental Employee Compensation", which sounds much more imposing. The first supplement covers periods not worked. (You can't say "time not worked", because there is a well-established argument that a vacation is a thing earned through past working time.) Included under this heading are vacations, holidays, and sick-leaves. The second category, premium pay, is time worked beyond standard hours and days. We might call these penalty rates. The third category is health and welfare benefits, which present some particularly difficult problems in cost and analysis. I have in mind here the various funds or plans that cover such risks as unemployment, retirement, sickness, and accident. The plans may vary in the coverage of the types of illness, provisions for care, and inclusion of family members. These variables, I suspect, are the most difficult features of fringe benefits when you try to compare one company with another. The last category includes legally required employer contributions. There may or may not be matching employee contributions, but here we are only interested in the cost to the enterprise. The obvious forms include Old Age Survivors Insurance deductions, unemployment compensation deductions, deductions for workmen's compensation programs in the states, and the deductions for state temporary disability plans.

This sketch covers the general area. I think we might go around the panel members and ask if they want to add anything or correct me if I have erred, and then we can take it to the floor.

MR. PFEFFER:

Just a very brief comment in the list of fringe benefits. I think the list is almost complete, but might add a few other items. One is company-provided consumer and sometimes even capital goods and services at discount prices. The company might also provide legal counsel, insurance counsel, and financial counsel, so that an employee with legal, insurance, and financial problems could get answers from an impartial person hired by the company. Retirement counselling is another possible service. A man reaches the age of 60, with compulsory retirement coming up in five years: a planned program would help prepare him for retirement. Now these things are relatively inexpensive and they are fringes in the sense that they cost something to management. Yet I feel they would serve the purpose of winning the workers' allegiance to management, perhaps much better than more

expensive types of fringe which are currently being negotiated. This is perhaps a miscellaneous category that we might have added to the outline.

MR. BUCKMAN:

I might add another type of fringe benefit that was not mentioned. The working environment could be improved. Women workers are perhaps more concerned with the type of environment in which they work than with the salaries that they take home. They like the social and recreational activities that a company might provide. There is one insurance company in the South that has provided an 18-hole golf course and a swimming pool for the use of its employees. There are other companies that are providing camp recreational facilities where people might take their families and have vacations. There are companies that provide dances, parties, and picnics periodically during the year, which female employees like particularly. Another type of fringe benefit is the availability of cafeteria service at a reasonable cost. These things are attractive to certain classes of employees and are not in the nature of salaries. They should be considered as fringe benefits.

MR. ANDERSON:

I think that management must come to realize that it can no longer think in terms of labor costs consisting of basic hourly rates only. Management must think in terms of the hourly rate plus an extra amount of fringe benefits. This "extra amount" is a substantial amount. Everybody has his own ideas about what fringe benefits are. I heard one definition, which I think is a good one. A fringe benefit is classified as cost that is a variable that goes with the number of employees and hours worked. Therefore, fringe benefits would not generally be put in the category of fixed costs.

COMMENT:

I would just like to amplify the remark that Mr. Anderson made. There is a direct relationship which exists between the level of the payroll and the cost of fringe benefits. The two costs should not be separated for purposes of convenience but should be considered as a single item -- compensation.

MR. MUNSON

I think that it is becoming increasingly evident, as fringe benefits expand, that there is a need for management's use of experts in the different fields associated with fringe benefits. Unions have already utilized their own experts, supplemented by costly research and developmental work. As fringe benefits increase in size and complexity, management will need the service of experts and research too.

MR. BUCKMAN:

I would like to emphasize Mr. Hildebrand's remarks about the cost of fringe benefits. Costs of health and welfare plans are now substantial, as was told to you and as you no doubt know from your own knowledge. But costs do vary considerably from company to company, even with identical plans. One company might have an older staff of employees than another. One plant might have more family men than another plant. One plant might unfortunately have more people who are not in the prime of health than another plant. One plant might employ more females than a competing plant. One plant might

employ more persons who, let us say, live in areas where the climate is not so salubrious as in other areas.

MR. PFEFFER:

I would just like to add to what Al pointed up here about pensions. I think you will all agree that pensions fall into a class distinct from all of the other fringes, in the sense that once you get involved in a pension system you are stuck with a pension system for an indefinite future period of time. The nature of pension costs is such that it is almost like catching a tiger by the tail. A large amount of the cost of pensions, particularly at the negotiating stage, hinges on the arithmetic and wording that you use. For example, we are talking on the basis of a 2000-hour year. Customarily the service year on most negotiated pension plans is somewhere between 1200 and 1750 hours. When a worker has put in that many hours he has earned a year of eligible service towards the pension benefits. Usually the negotiators do not quibble about the number of hours put into that formula, so long as the number was something less than 2000. Actually, every ten hours that you clip out of the formula will make a significant difference in the years of service that are accredited to the plan. Another factor which will make a significant difference in cost is the turnover rate. Companies do not seem to emphasize this factor. The unions on the other hand pay a lot of attention to turnover. If you have a high turnover, then a given number of dollars will buy more benefits. Consequently, unions may insist on emphasizing turnover rates. Little things of this sort can add up to literally millions of dollars in terms of both premiums and true liability. This is something of which many negotiators are really quite unconscious.

MR. HILDEBRAND:

The importance of the yardstick you are going to use for calculations cannot be stressed too emphatically. Another side relationship is that in collective bargaining you are trading back and forth. If fringe benefits increase, the basic wage rates are not likely to increase as much as they might otherwise. In fact, we had a pretty clear demonstration of that in the recent UAW-Ford negotiations for Supplemental Unemployment Benefits. In this instance the employer was quite conscious of the over-all cost of the package and the union probably was, too. It's not a question of having both together but of trading one against the other. This will involve questions concerning not only cost to the employer but also competition among the various political interest groups within the union who may or may not benefit.

QUESTION:

Is it common today in negotiations that the union will settle for a certain wage increase and then put pressure on the employer to convert that into fringe benefits, such as pension or health and welfare plans?

MR. HILDEBRAND:

My own impression is that this is quite common. The employer will say, "Well, I don't care whether you put the nickel on the basic rates, or whether you take this same nickel and buy some kind of medical plan."

MR. PFEFFER:

My own experience is quite limited to consultations with a limited number of unions. I get the impression that unions would prefer to put the boost into the fringe because fringe benefits are considered permanent,

no longer subject to negotiation. If you get the employer committed to a pension plan costing x cents per hour, that's taken out of the realm of bargaining. The next time you negotiate you're still being "inadequately" paid. If the employer raises the question of the pension, the union will insist that this is something separate from the base pay.

MR. BUCKMAN:

I think the movement in recent years has been to actually set aside a set sum of money for fringe benefits. There might be some tendency, as Irving said, to regard this as a fait accompli; that is, once a plan has been set up it is almost impossible to reduce or eliminate it. There has been a great increase in the number of pension plans that have been inaugurated in the last few years. The pension plans in themselves cost so much more than the other fringe benefits that the cost of the pension plans does become an important consideration in wage negotiations.

MR. HILDEBRAND:

I was going to make two other points on that. The first is that management seems to have two approaches to negotiating on wage and fringe issues. One is to say, "We have a nickel now. Go buy a plan." Another approach is to raise the questions, "What kind of plan do we want? What will it cost? What do we trade against it?" In other words the latter approach is to pose the question, "What do we give up in order to get the plan we want, rather than spend a nickel and perhaps not get a good plan?"

The second point I want to make concerns the effect the fringe benefits have on particular groups in the work force. According to the union's political structure and outlook of its membership, the results may differ. To illustrate, the supplemental lay-off pay plan in the Ford settlement is obviously a thing of greatest interest to the low seniority workers who were the fellows who would collect this supplement if they were laid off. The old-timers, however, were largely protected from the threat of lay-offs because of their seniority. In certain industries -- again the auto industry is an example -- highly skilled workers may look with disfavor on fringe benefits acquired at the expense of their high wage rates. This was something of a problem in the UAW. One union with a large segment of older workers would probably stress retirement. Another union which had a large proportion of people who were young and relatively low in seniority might be much more interested in this supplemental lay-off plan.

COMMENT:

We've talked about the union being pressured to create these fringe benefits. While I negotiate with the union in auto electrics, I think that even if we didn't have one, there would still be considerable pressure to increase fringe benefits. In a tight labor market companies are forced to offer fringe benefits in their competition to attract labor. It's not only union pressure, it's management pressure, company against company.

COMMENT:

Around Los Angeles now there are quite a few places with signs calling for machinists and saying "minimum 56 hours guarantee", which is the same kind of thing.

QUESTION:

Do you feel that the demand for fringe benefits varies directly with the wage scale of the union?

MR. HILDEBRAND:

I hesitate to make a generalization. I think fringes can't be considered luxuries any more; even low wage classes of workers are quite sensitive to this whole question of fringe benefits.

COMMENT:

In non-contributory plans I can see that, but in the contributory plans our experience in agriculture -- and I would think this would be true in the southern states and in Arizona where you have a base labor scale of \$1.30 in agriculture processing -- is that the worker looks more towards the four to five cent increase than he does towards an increase in any contributory plan, such as hospitalization and medical plans. I was wondering if there was any pattern here in California.

MR. HILDEBRAND:

I don't know. Perhaps you gentlemen can offer an opinion on that.

MR. BUCKMAN:

The question as I understand it is: is there more pressure among the lower paid employees for fringe benefits, or less pressure, than among the higher paid employees? My impression is that the higher paid employees are the ones who want the fringe benefits more and bargain for them more than the lower paid employees. The lower paid employees don't look on them as additional pay, or as having additional value. Their budgets are pretty tight and they don't value the fringe benefits nearly so much as higher paid employees do. That's an impression, now; I don't have any facts. It would seem logical.

COMMENT:

I don't remember the name of the source, but a study made in New England indicated that there was no correlation between basic wage rates and prevalence of fringe benefits.

COMMENT:

Just a comment on that. Some unions and union members realize that the fringe benefits are tax free and would be worth more for that reason.

COMMENT:

Then wouldn't the higher paid employees appreciate that more than the lower paid employees? The higher paid employees are more conscious of taxes than the lower paid employees.

MR. PFEFFER:

I would like to say one word on this question of who likes fringes better, low paid or high paid. Speaking only about pensions, I think it can be said that there is a very pronounced difference on the basis of age. The younger people are relatively disinterested and the older people are very keenly interested, so that the average age in a particular group would partly determine how much interest there would be in fringes if we emphasize the pension aspect.

COMMENT:

I agree. I've been trying to sell our corporation pension plan since that Supreme Court decision in 1948. If I can get with the old-timers there's no problem. The younger people, however, show little interest in pensions. They're interested in a raise in their pay check.

COMMENT:

In my company, as in other companies which follow pattern settlements made by the largest corporations, the basic wage rates are largely pre-determined. Fringe benefits then become the important issue in collective bargaining.

COMMENT:

I've seen a very different thing happen in this connection. Many managements, over a period of years of collective bargaining, have attempted to buy off certain fringe benefits. For example, my own industry in the Los Angeles area resisted paid holidays as a matter of principle. Year after year they gave two or three cents more than they could have settled for. Finally they were forced to give paid holidays. They found themselves in the position of getting their wage rates set pretty high and finally had paid holidays as well. My opinion is that you can't buy off fringe benefits for any length of time. All you are going to do is get your wage rates out of line, and finally you are going to give in on these fringe benefits.

QUESTION:

I wonder about the motivation of the union leadership in pressing for these fringe benefits. Is the main motivation a sincere desire to better the lives of their membership, or is it a selfish interest in securing their positions and increasing their membership?

MR. HILDEBRAND:

I think you get a mixture. I think there was a genuine idealism behind the struggle of the unions after the war for private industrial pensions. In the case of SUB, the UAW's fight for this layoff pay supplement was based on a long-time discussion of and reflection about what it would mean for their members. I think, too, on certain matters, the leaders get the pressure from below. They will translate these pressures into a type of program that strengthens them politically with their members. After all, the union is a political organization. The inter-union rivalries also act as important pressures. I think any of this can be interpreted cynically as an effort to get power, but you can also give it other interpretations. It seems to me that one of the basic ones is that we have forces in the world we are now in that are leading to pressure for more security and more provision of benefits. The growth of fringe benefits is the outcome, as I see it.

This leads us into the second question area for discussion. The question here is: "Why have these fringe benefits grown so much since 1940, and why did they emerge even before then?" Here I'll state some of the things that seem to me to be important factors explaining it. First there was the long effort to reduce and standardize working hours and to establish paid vacations. The unions for over a hundred years have fought to get the work week reduced and the work day reduced, and later in that long history to get vacations with pay. They were working on more than one objective at

the time. There was always the problem of slumps in business. Reduction of hours was a favored union nostrum that was brought forth to cure the unemployment. The standardizing of hours was a more subtle matter. The unions wanted to eliminate work at undesirable times, and penalties (overtime premiums) are a way of doing it.

The second cause is less obvious, but students of labor and sociologists consider it to be a very important one. That is the desire of the hourly rated worker, so-called manual, blue-collar, or production worker to achieve the security and prestige of the salaried worker. For many decades the manual worker has been restive with his lot and, if you wish, envious of the status of the white-collar man. The salaried worker seemed to have had greater security against certain risks. He could fall sick without losing his income and could have vacations with pay. Perhaps the manual worker didn't need a union in all cases to get some of these fringe protections. But there is no question that the unions have seized upon these objectives, translated them into various types of plans, and in that way identified the fringe phenomenon with collective bargaining.

The third factor is a special element. The fact that the Great Depression was so long and so severe probably gave the American worker a consciousness of personal insecurity. This feeling has generated a really world-wide movement for security. The wage earner is determined he shall not suffer losses of income of any substantial sort arising from any cause beyond his power. This desire for security is a phenomenon of the modern age (with its attendant consciousness of the interdependent nature of our economic system).

Some of the real issues that you gentlemen may want to discuss are: Is there too much security? Can you carry it too far? Do you give up anything else if you do push some objective too far? In any case, certain categories of fringe benefits I think are tied in with the desire for personal security in a world of unexpectable change.

Next is the institutional interest of the union in strengthening its position with the membership. Union leaders face an age-old problem of keeping the membership interested in the organization, particularly where unions are in competition with each other. There is always the danger that, once a contract is settled and the gains won, the interest and activity of the membership will decline. Consequently, you have in certain types of fringe benefits a very useful device for constantly reminding the worker that it's his union that is responsible for and is administering the benefit. Even though the employers may be paying all the bills, in the politics of unionism, the union will get credit and strengthen its position as an institution.

A final reason for the growth of fringe benefits is the fact that certain types of fringe benefits are free of income tax; consequently they are worth more in the net than direct wage increases.

MR. BUCKMAN:

Dr. Hildebrand mentioned the effect of the Great Depression. However most of the younger workers entering the labor force have not had any contact with serious unemployment. They seem to have very little regard for

waiting and saving. They want the better things of life right away and they'll go into debt to get them. It may be that they want the security that these fringe benefits give them so that they can plan ahead, if only for their monthly payments. At the present time we have full employment and good incomes. But a youngster getting out of high school and college has, I believe, as great a lack of security as ever, based on the fact that the does not know where he stands in this new age. He feels the pressures of social status and prestige. He feels he has little control over the events occurring and the decisions made that affect his life. He doesn't know if he is going to be inducted into the armed services during a national emergency. It would seem to me that these considerations make for the insecurity of the present younger generation.

COMMENT:

I would say that the employees today do not look forward to providing for their own security in the future but they do think that the employer should supply that security. They feel that somebody else is going to take care of them -- their employer or their industry.

MR. HILDEBRAND:

I would quite agree with you. I find that I overlooked one of my own arguments here on why these things have grown. That is what is called the "doctrine of the plant as a community". What I mean is that the old notion of a temporary wage relationship, when the hourly worker was hired at will, here today and gone tomorrow, has disappeared. I think the last twenty years have revealed not only through the unions but through legislation and through studies of individual workers themselves that this philosophy of the temporariness of the relationship is disappearing. Today the employee is not considered a commodity, but a person who is to be granted protection in exchange for his services. As a result of this new philosophy, it's expected of the employer to provide that protection in lieu of the inadequacy of the government's protection. As Dr. Haber mentioned this morning, you have this enormous system of private social security, erected through collective bargaining or voluntary employer plans, on top of your public legislative system.

MR. MUNSON:

The bad part about this is the fact that unions are getting the credit. The employer actually foots the bill but he is not the one winning the employees' loyalty. The union is.

COMMENT:

Some people have suggested that the employer initiate benefits. However, one great fear the employers have when they consider taking the initiative and proposing fringe benefits is that these will be immediately taken over as bargaining issues by the union. Stock plans and bonus and profit-sharing plans are examples.

MR. HILDEBRAND:

If they're not wages, they're hours, and if they're not hours, they're working conditions under the Taft-Hartley Law. And so you bargain about them.

COMMENT:

It still remains, I believe, that the employers themselves are sometimes responsible for this state of affairs. The employers have allowed the unions to receive the credit without really trying to convince the employees that management deserves the credit. This is partly because management takes the attitude that these fringe benefits are something you bargain over and that once the contract is signed, you can take a breather until the next session. And even after a trust fund has been established, the employers just don't bother to send their representatives to the meeting of the trustees.

MR. HILDEBRAND:

Let's move to our third question, the cost of fringe benefits. I hasten to say that I am no expert on these matters. I have merely put together what few figures were readily available. I must warn you that all of these figures involve the year 1953 or 1954, because of the time it takes to process data of this sort. It is safe to say that the cost of fringe benefits may run somewhere between 15 and 20 per cent of payroll cost. I said that it may appear that they would do this; that's about as safe as any professor can be. The costs indicated by the Bureau of Labor Statistics' study are of interest here. They found 30.8¢ per payroll hour went to fringes, as they defined them. The important items were vacations, holidays, and sick leave amounting to 9.2¢; premium pay, 9.1¢; and expenditures on pensions, 7¢. In any case, if you take out of the Bureau figures the element of premium pay, you're left with about 22.2¢ per payroll hour in costs for all fringes. I think that's enough on what I have now. I'd like to call on our panel experts on this general area.

MR. BUCKMAN:

Where we talk of costs of either 41¢ per hour or 15 or 20 per cent of payroll, we must recognize that there is a drive on to increase pension plans. This is the most costly fringe benefit that an employer can be called upon to provide. In recent years, there has come into existence the concept of major medical insurance. This is going to add to the cost of fringe benefits. Employees want more and more protection. There is continual demand to improve all existing plans, and I think when we speak of 15 to 20 per cent this year, I'm sure that it will probably be 25 per cent ten years from now and perhaps even more in later years.

QUESTION:

What has happened to the cost of medical services?

MR. PFEFFER:

I can cite a few figures. The experience under hospitalization contracts shows an increase of about 15 to 20 per cent in costs between 1953 and 1955 for just this one benefit. I think there are a number of factors that are sort of engines for inflation. The doctor finds out how much he can get away with under these plans. The temptation of doctors and hospitals is to pile on services because the plans are doing the paying, rather than the individual. I might give one specific example. There's one hospital in the southern states which is being sued by an insurance company for having reported to that insurance company -- one insurance company, if you please -- that they had more bed patients in residence at one time than they had beds available! And consider all the other insurance companies that were perhaps

billed by that hospital. To the extent that the medical profession tends to run away on costs, the pressure has been building up rapidly on the part of unions and other groups to bring the medical profession under control by the use of fee schedules and panels of doctors. In a number of areas they have already done this.

I think that within this whole area of health, welfare, and pensions you have some self-destructive tendencies that can create tremendous problems for management. Let me just illustrate what I mean here. There has been a tendency in the past couple of years towards group life insurance. It is not uncommon today to hear of executives who are also getting group life insurance. Group life insurance under the law has been given rather special treatment because it was felt that this was a kind of private social security which the people needed as a base for their personal security. But as soon as insurance companies get into the area where they are supplying contracts providing for group life insurance in amounts upward to \$10,000, a tremendous amount of pressure is going to be built up to restrict some of the liberality of this type of life insurance. This is one area in which as things get better they are really getting worse.

Another area involves pensions. As the pension plans tend to be improved there's a tendency for the costs of these pension plans to become more and more flexible. There may be a choice of three kinds of plans: one that is unfunded and simply administered by trustees on a self-administered basis; one that is trusted with a bank or trust company; and one that's fully insured. Obviously, the best of these is a fully insured plan, because it's free from any of the variations in experience that might be had by the self-administered plan. The full resource of the insurance company stand behind it. But this also is the more inflexible plan. The premiums are fixed and must be paid year by year. If the business should be faced with decreased income because of a recession or a fall in sales the fixed cost would remain at its previous level. This inflexibility can be quite a serious thing, particularly for a marginal firm. Again, within the area of pensions, you have the same kind of tendency that as things get better they may in fact be getting worse. The moral of the story is the need for thinking of the long-run impact of whatever action is taken in the cost ground of these premium benefits, and the need for building in as much flexibility as possible. The profit-sharing advice is one idea to which more firms ought to give serious consideration, because it does have this great amount of flexibility. If income is low, then the cost is low. If times are good, the cost is higher when the firm itself can absorb the costs more readily.

MR. HILDEBRAND:

I'd like to push on to discuss the question: What future developments seem likely for fringe benefits? In a way we have anticipated this but I see no harm in our trying to nail it down directly. These are my crystal ball observations -- they seem to me to be things worth looking at. First, in certain industries you are going to get more of the supplemental lay-off pay type of plan, familiar in the automobile industry. An alternative plan is the "vested plan" as in the glass industry. Under the glass plan the employer sets aside benefits to an employee's individual credit for production-hour-work and the employee may draw upon these credits when he quits as severance pay, or for lay-off supplements, or for medical or disability purposes that go within the general concept of welfare. It seems to me that

there will be growth of this type of security measure. The question is: how far will these plans spread?

My guess is that there is less likelihood of SUB spreading in purely seasonal industries where the experience and nature of the industry make it clearly part-time, as, for example, in beet sugar refining, than there is in an industry subject to unpredictable sudden shifts that bring about fluctuations in the work force, such as automobiles and certain types of heavy manufacturing. Also, I think where the union has a very firm control over employment or lay-offs that industry will not be faced with the lay-off pay demand. For example, the principle of equal division of the work which is implied where you rotate jobs, as in maritime work and certain types of construction, lessens the need for lay-off pay.

Secondly, it would seem a pretty safe guess that there's going to be a demand for increased coverage and benefits in health, welfare, and retirement plans.

Third, I have suggested that it's possible that employers, in their concern over costs, and the unions, from the point of convenience in negotiating, may try to work out ways of consolidating benefits in one big package. These fringes will rise and continue to rise probably faster than basic wage rates because of the forces that we referred to earlier. Particularly in these prosperous times when, for many classes of workers, their incomes have taken them well beyond any conceivable basic minimum existence, immediate wage rates may not have quite the pressing importance they used to have.

Another prospect is increased government regulation of negotiated welfare plans. I feel that, in part, increased government regulation would be contingent on whether the unions try to police themselves better on the abuses in this situation and whether the employers take a more active interest in their own implied stewardship in this trusteeship relation. I have had some expectation that these two forces would assert themselves and take the pressure off legislation.

Let's go around the panel and throw this one out. What does the future hold for fringe benefits?

MR. MUNSON:

One thing that has been a controversial subject over a period of years in all management circles is whether or not once you give a fringe benefit you will ever be able to get it back. It seems to me that if we hit a real depression, unions and employees would be more willing to take cuts in their fringe benefits than in their wages. Especially if we are going to have continued rising inflation, I don't think there's any doubt that there will be an expansion of fringe benefits.

MR. HILDEBRAND:

It's very evident, I think, that if a company is up against a cost problem in a recession it can get a concession out of the union more easily if it can hide the cost change without cutting basic rates. You had illustrations of this at Kaiser-Willys and Studebaker-Packard where a very strong union, the United Automobile Workers, was willing to cut costs so long as it would be in the form of eliminating an uneconomic bonus system or,

alternatively, a loose piece rate system rather than cutting the hourly basic rate itself. But eliminating one or two paid holidays will not do much for your total payroll costs. However, if most of the money spent on fringe benefits is going into pensions, health and welfare, and premium pay, you've got the question: Is it likely that the unions, even under severe economic stringency, would concede on those categories?

COMMENT:

The main emphasis during the downswings of the business cycle should be raising productivity. In this connection, fringe benefits sometimes make up for their cost in terms of increasing productivity.

MR. HILDEBRAND:

I think that point should not be lost. When we think of these fringe benefits as employers, we think of the cost of them. But we shouldn't overlook the fact that some of them raise productivity and pay for themselves. Many benefits -- hospital plans, safety plans, and free lunches -- might be included.

This aspect of increased productivity leads to our last topic: What does all this mean for the labor market? This topic is related to the question of what the future holds, and we might discuss them jointly. I'd like to throw out a few ideas. One is that increased fringe benefits, along with expanding union organization, are going to result in high labor costs and inflationary pressures. Some economists like Summer Slichter think that in turn this higher cost pressure will stimulate employers to adopt more labor-saving devices. The consequence will be higher man-hour physical productivity which will absorb the inflationary pressures. If this isn't sufficient, because the pressure is too great or the response in increased productivity is just not enough, then inflation will result.

The other point I want to make is that the employer should be able to demand greater efficiency from his employees and their union in return for granting the greater security that these fringe benefits provide. A relaxation of seniority restrictions is one area in which the employer may exact concessions. I know those of you who may have rigid seniority systems will say nothing will ever get them to give any ground. But remember that seniority itself is essentially a security-giving device for the older worker in the union -- and in the company -- and I think the companies could trade it for flexibility by providing the security in other ways. Secondly, there will be a reduction in the turnover of labor as these security devices and other fringe benefits build up. I think that employers more than ever must and will fight hard to preserve their freedom to innovate, to make technological changes, so that they can combat higher costs with higher productivity. The unions will not, I think, take the ancient method of obstruction. Instead, the unions will take the new approach which is: "Make all the innovations you want. Just share the fruits with us. If you save money, we want a part of it." In other words, they will remove the barriers and promote change.

The last point I wanted to make was that, as you get health and welfare plans where the element of risk, age, sex, and other factors get into the cost of insuring groups of people, these cost considerations are going to work against the hiring of older workers. There's going to be a built-in

bias against hiring them on the ground you've got to keep the average age down if you want to keep your costs down.

MR. ANDERSON:

In discussing the future, I think we can go back to Gompers' famous answer to the question: What do unions want? His answer was they want more, more, more, and they want it now. And I think that's the way it's going to be with fringe benefits. The question which inevitably rises in this connection is whether the worker can have too much security and insurance. One of the major oil companies in Los Angeles recently completed a study of the decreasing efficiency of its entire labor force. One of the major factors that they discovered is that an individual employee is now covered in so many ways -- his security is taken care of not only now but in the future -- that he is unwilling to assume additional responsibilities. He becomes, well, lazy on his job. He does just enough to get by and that's about it. He doesn't want to progress to Bill Jones' job above him because he's being taken care of anyway. Now I don't know whether they are right or wrong, but I throw it out as something to think about. Maybe, as was mentioned earlier in the session, we're going a little bit too far with our fringe benefits.

MR. HILDEBRAND:

Bill Haber made a point the other day in conversation regarding the Supplementary Unemployment Benefit plan in the Ford plant. The original union demand would have worked out to about 100% of net take home pay -- about 85% of gross or something like that. As you know, the final settlement was 65% for the first four weeks. After this period 60%, including the state benefit. Is this 60 to 65% so close to what you get for working that the incentive to work would be lost, or is it still low enough so that there is no loss in incentive? You know all the debates here pro and con. Slichter thinks it's low enough down that there won't be any loss of incentive because the average American worker wants this high standard of living. He's got all these installment debts and he just can't afford a one-third cut in his income. In effect the incentive to work remains. But you can hear arguments on the other side.

You might say that increasingly in our society we are confronted with a choice of two kinds of income: money income and leisure. If we want more and more leisure then we have to face the possibility of reducing the rate of increase in the produced income. Increased leisure in modern times will not bring with it an automatic increase in productivity as was the case thirty or fifty years ago.

MR. BUCKMAN:

Besides the obvious answers that come into the minds of each of you that the unions are going to want more of what they already have, there will also be pressures to have new things. I think that Dr. Hildebrand here has listed some of the things that a good crystal ball gazer would list. In the latest issue of Time magazine someone came up with the idea that the future may bring not only a reduction of hours worked per week, but increased vacations up to the point where an employee might receive a whole year's vacation after twenty years of service. Well, that's something else that might be brought up in the future.

Group permanent insurance is becoming more popular. This is coming about because retired employees are eliminated from group insurance as it is customarily constituted in most group plans. Once they are no longer working for the employer they are out. At 65 these people want insurance. They have a right under their group insurance to convert to individual insurance without showing evidence of insurability. They might be in poor health, but they can still continue insurance. However, they have to pay premiums which are **very** exorbitant for retired employees. For this reason there's been pressure to keep retired employees under group plans. Because the rate of group life insurance depends upon the average age for all the employees covered, whether they are retired employees or active employees, this increases the cost of the group plans. The group permanent plans are plans of insurance like ordinary life insurance which become fully paid up upon reaching age 65. These plans are far more costly than term insurance plans and they develop cash values. Now, these cash value at 65 may be converted into a provision for part of the pension plan.

One word more about increased regulation by government. Last year, 1955, the State of Washington enacted the first piece of legislation in the United States compelling all welfare plans in operation in that state, approved by that state's insurance department, to be made open for examination. Furthermore, all the books and records of all welfare plans must be open for inspection by the insurance department. Every plan must be fully disclosed to the insurance commissioner both by the policy holder and by the insurance company. If the two disclosures don't tally with one another, of course, there's going to have to be a reconciliation. I understand that there has been pressure to have similar laws enacted in other states. There is some indication that the high officials of the AFL-CIO are in favor of such legislation because they want to screen out any undesirable elements that have arisen in the union movement.

MR. PFEFFER:

I'd like to make a comment here. Our social security system has grown like Topsy, with additions and amendments added here and there over the years. I have a feeling that a complete revision of the whole social security system probably will be considered. If we compare the American social security system with that in quite a few other countries, we find that there are lots of benefits that we hadn't thought about yet, which many other countries take as a matter of course. Two examples are the family allowance system and maternity benefits. We have something like a family allowance in our deduction for income tax, but our system is such that it gives the benefit only to those who have quite a bit of income. If your income falls below the level necessary for reporting purposes, then you're not getting the full benefit out of the deduction. I have a feeling that there will be a radical change in the old pattern of social security, making a perhaps more rational system.

Just one closing comment which is, I feel, rather an optimistic one. In all of our discussions and questions we've been very much concerned with the risks and the costs and the difficulties in giving them long vacations with pay and giving them expensive retirement plans and giving them expensive medical and hospitalization plans. The optimistic note is this: we have all recognized that they have a very strong desire to security. They are also us. To the extent that this movement continues, we, too, are beneficiaries of the whole development.

Workshop Session

September 14, 1956

HIRING AND RETIREMENT POLICIES

IN THE NEW LABOR MARKET

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HIRING AND RETIREMENT POLICIES  
IN THE NEW LABOR MARKET

William H. Smith, Discussion Leader

Thomas C. Campbell

Margaret S. Gordon

Frank Wickhorst

John V. Zuckerman

MR. SMITH:

The subject of our discussion today is: Hiring and Retirement Policies in the New Labor Market. Mrs. Margaret Gordon of the University of California has prepared some very helpful material which will assist us to better understand this new labor market. Some of that material was discussed yesterday by Professor Haber. I'd like to ask Mrs. Gordon to discuss some of the implications of that material which were not covered by Professor Haber.

Mrs. Gordon, who is Associate Director of the Institute of Industrial Relations at the University of California, Berkeley, has done a great deal of work in the field of population and labor force research. She has written extensively in this field and has studied much of the literature. Moreover, she is very familiar with our California situation as well as with the national situation.

MRS. GORDON:

One of the points that I want to stress in talking about population and labor force trends is that there are some things that are likely to happen in the next ten years that we can predict with a great deal of certainty. There are other things about which we are much less certain. The thing that we can predict quite confidently is the rate of growth of the population in the adult age group in the country as a whole. The people who will comprise the adult population in the next ten years are already born. The only problem about predicting the size of the population in these various age groups is to predict mortality rates: that is, the rate at which people will die. Since mortality rates change very slowly, this is fairly easy to predict, at least if we are prepared to assume that there will not be a major war.

One of the points that Mr. Haber made was that population growth during the next ten years would not occur evenly throughout our age structure. We know that the adult population will be growing most rapidly in the age group 15 to 19 and in the age group from 45 years on up. The reason for this is, I think, familiar to most of you. Remarkable changes in the birth rate have occurred. The people who are 20 to 35 were born during a period of declining birth rates. The birth rate started falling in the early 1920's and reached a low point at the bottom of the Depression, but began to rise slowly from 1933 on and increased sharply during World War II.

To summarize: there will be a marked increase in the 15 to 19 age group who were born in the war years, when birth rates were high. There will be relatively little net growth in the age group from 20 to 44 years in the next ten years, although the number of persons aged 20 to 24 will increase appreciably between 1960 and 1965. Finally, there will be rapid growth in the 45 and older age group and particularly, of course, in the 65 and older age group.

Labor force participation rates enter into the picture when we try to estimate the size of the labor force. The labor force participation rate for any given age group is the percentage of the population in that age group actually in the labor force. These percentages are somewhat more difficult to predict than the size of the population in the various adult age groups, although the uncertainties relate more to some age and sex groups than to others. The labor force participation rate for certain groups has been changing quite strikingly. The most marked change has been occurring among women aged 35 and older. If you look at Chart 1 [reproduced at the end of this section], you will notice a very large and persistent rise on the right hand side of the chart for all of the age groups of women 35 and older. In this connection it is interesting to note the difficulty this phenomenon has created for those who prepare labor force projections. The most recent detailed projections that I could find were some that were prepared by the Bureau of the Census in the early 1950's. When I looked into these figures I discovered that they were pretty far off so far as the situation in 1955 was concerned. The fact that the labor force participation rate of older women would continue to rise appreciably between 1950 and 1955 was simply not anticipated.

The increase in the proportion of older women in the labor force is likely to continue so long as we have high levels of employment which tend to encourage these older women to seek jobs. Mr. Haber talked yesterday about the possible impact of shorter hours on the proportion of women in the labor force. It is likely to be easier for housewives to work if hours of work are shorter; on the other hand, young women are being affected by the earlier age of marriage and by the tendency to raise larger families. Between 1950 and 1955 there was a slight decline in the percentage of young women aged 20 to 24 in the labor force, and only a moderate increase among those aged 25 to 34.

Chart 2 [reproduced at the end of this section] shows the proportion of men in the various age groups in the labor force. You will notice that

there has been very little change except for the steady drop in the labor force participation rate of men aged 65 and older. That drop was interrupted by World War II, when the proportion of elderly men in the labor force increased markedly, but it has reappeared in recent years. Nevertheless, the supply of older men in the labor force may rise somewhat, since the number of older men is increasing appreciably.

What these trends imply for the country as a whole is that, given a high level of employment, we are in all probability going to have a very marked shortage of young adult workers in the labor force, while the available supply of workers aged 45 and over will be increasing.

I'd like to discuss a subject which hasn't been touched on so far: the California situation. It's much easier to predict the growth of the adult population by age groups for the country as a whole than it is for a single state. We are all familiar with the fact that California's population has been growing very rapidly and that a substantial proportion of this growth has been attributable to in-migration. Over the course of the first half of the present century about 80 per cent of California's population growth came about through the migration of people from other states and to some extent from foreign countries. In more recent years, as a result of higher birth rates, natural increase (the excess of births over deaths in the state) has been responsible for a somewhat larger proportion of the state's population growth. Available estimates suggest that, in the first half of the 1950's, about 45 per cent of the state's growth was attributable to natural increase, and about 55 per cent to in-migration. But the rate of in-migration is not easy to predict. It fluctuates with changes in economic conditions. If job opportunities in the state continue to rise rapidly, we may anticipate a continued sizable influx of migrants.

An important element in this population picture is that the migrants into the state are predominantly young adults. The age groups that are represented among the migrants are chiefly those in the 20 to 45 age brackets. This, as a matter of fact, is contrary to a widely held impression that most migrants to California are elderly people who want to retire. It is true that older people do come to the state to retire, but these elderly persons represent a relatively small proportion of all migrants to California.

In view of the predominance of young adults among the migrants, it is quite possible that California may experience a more balanced growth of its labor force during the next ten years than the country as a whole. In other words, the in-migration of young adults may help to counteract the anticipated shortage of workers in the younger age groups. But I am not at all confident that we can count on this. If, as we have every reason to expect, the labor market remains tight and job opportunities remain extremely favorable for these young workers throughout the country, they may tend to stay where they are. My best guess, however, is that they will continue to migrate to California in substantial numbers.

This is all I want to say about the background. We can come back to some of those points as we get into the policy problems they create.

MR. SMITH:

Thank you very much, Mrs. Gordon. Yesterday we received quite a few statistics and today also. Those are absolutely essential for our understanding of this important subject. A number of questions may have arisen. You may want some interpretation of the material that has been given you both in written form and in Mrs. Gordon's remarks. I want to call your attention also, if I may, to some other source materials. The Bureau of Labor Statistics', Monthly Labor Review is carrying a series of articles on this general subject: population, the labor force, and the relationships between the different age and sex groups and the labor force. They are published in the issues of April, May, June, July, and August -- five months so far. Those are all on a national basis with no localized statistics, unfortunately.

Would you like to ask any questions or ask Mrs. Gordon for any further explanation of the points she has mentioned? Any interpretation?

QUESTION:

What will be the effect of the relative shortage of persons between 20 and 44 on hiring policies or promotion policies within our various organizations? Will older workers be hired for jobs that would ordinarily go to the younger work force? Do you think that will have any effect on qualifications of workers either in new employment or promotion?

MRS. GORDON:

I think there will have to be some modification of present policies. But that really is the primary purpose of our whole discussion: to determine to what extent employers may be forced to change hiring policies in order to adjust to the new labor market situation. I think what we need to explore here particularly is what factors lie behind present widespread policies which discriminate against workers aged 45 and on up. What are the ages at which employers tend to impose limits, formal or informal, on hiring? These appear to vary a great deal by occupation and industry, but on the average tend to be around age 45.

COMMENT:

I think there might be slight changes of policy when the pressure gets great enough. I don't think we'll change our policy until we have to. Maybe we are not so smart, after all.

MR. SMITH:

But at least you represent the thinking of a very large group of people. I'd like to hear expressions from some of the other people.

QUESTION:

But hasn't that pressure become great already? It's reflected in the statistics. Haven't we already been forced to go into the older age groups?

MR. SMITH:

This is a matter of degree. In other words, you are asking at what point does the straw break the camel's back.

MR. WICKHORST:

It's partly broken already. I think the pressure may be on, but some people don't perceive it. For example, there are some managers that don't admit to themselves that there is pressure. They are still trying to act as if it weren't that way and then they get unhappy because they can't find the source of their problems.

QUESTION:

Do we know anything about the education of the labor force? Do we know the proportion, say, of high school and grammar school graduates? Are there any changes likely?

MRS. GORDON: Yes, I don't recall the exact figures but there's been a steady increase in the proportion of workers who are high school graduates and, of course, a steady increase in the proportion of college graduates.

QUESTION:

Has this been different for California? Do we know anything about that?

MRS. GORDON:

The California figures are not very different from the nation-wide figures. I think that you would find the median number of years of school completed, which is the form in which the figures are usually presented, would be slightly higher for California than for the nation as a whole, but there isn't a marked difference. The proportion of college graduates in this state would probably be somewhat higher than in the nation as a whole.

MR. SMITH:

We have found from some fragmentary studies, however, that the proportion of college graduates who enter the clerical labor market has markedly declined over the previous years. A survey made in San Francisco a few months ago showed that the proportion of college graduates among clerical employees of the so-called non-exempt group was very small, and that the college group as a result represents a poor supply of clerical employees.

MRS. GORDON:

The decline in the age of marriage may be a contributing factor. Girls who go to college get married during college or almost immediately after and do not enter the labor market until their children are older.

MR. SMITH:

There are two or three other points we ought to add to the figures. One of those is the fact that in California we have virtually full employment. We have the highest peace-time employment and conversely the lowest peace-time levels of unemployment that we have ever experienced. In addition to that we have the highest wages and salaries in our peace-time history. Now if we take those two factors together, it seems to me that the inescapable conclusion is that we are going to have, assuming always the high level of demand, an intensification of the cycle of wage increases. Frequently we are asked the question: How long is this going to continue? I think the answer is fairly obvious. It is going to continue, with some modifications, for a considerable period of time so long as we have a high level of demand

and a labor shortage. One of our problems today is to see whether or not there are some ways to cope with this shortage problem and give us a better utilization of our labor force. We all have these problems. We sometimes approach them in ways that are not rational in view of these facts.

Kaiser Industries, one of the companies that has had a phenomenal growth in recent years, covering a variety of industries and employing all types of personnel, is one of those companies which has had a great deal of experience in meeting some of these problems. Frank Wickhorst is the fortunate or unfortunate person who has much of the responsibility for meeting some of these problems. Frank, what has your experience been?

MR. WICKHORST:

Our experiences, I'm sure, are similar to those of other firms facing labor shortages in all classifications. At the present time we have a critical shortage of clerical, stenographic, and secretarial help. This seems to be a widespread problem. Also, as far as engineers are concerned, it's getting so bad that we have to declare a moratorium on pirating. That's really bad. (Laughter.) One of our solutions has been to intensify our training program.

For clerical positions we have altered our hiring specifications and have undertaken a training program to raise skills. Mainly this program consists in retraining women whose skills have become rusty. This is especially valuable in attracting older women. We haven't done this in the past, but we're trying to do it now. We are hiring younger women, too, and then try to upgrade them through skill training.

QUESTION:

Would you hire a person as a typist and then make it possible to develop her skills as a stenographer?

MR. WICKHORST:

That's right. One of our initial problems is to convince the people in the operating departments of the magnitude of this problem. We in Personnel are trying to educate the operating people in the various departments to the fact that they just can't put in specifications for the ideal person and then expect to get them. Someone asked if we have a nursery for children of married women. We haven't gone to that point but we have set different hours in certain departments to accommodate women with children.

MR. SMITH:

How many of us use training courses to upgrade people that we already have on the staff? In other words, how many of us fill jobs from within with persons who don't have the requisite abilities but who have the potential and therefore give promise if they have the proper training?

COMMENT:

We do with our industrial engineers. Our most successful industrial engineers are people we have promoted to these jobs and trained in our type of work. We think this is properly utilizing people as industrial engineers rather than going out and competing with Frank Wickhorst or someone else.

MR. SMITH:

Earlier, Mr. Wickhorst discussed the problem of training younger people. Now there's also the problem of training the older persons. In your comments, Frank, you assumed that the older person had adequate experience. But some don't have. Would you train those people?

MR. WICKHORST:

The answer to that question would depend upon the type of job. For some time now we have worked on the problem of trying to train older women as office workers or to bring up their skills so they can be used.

COMMENT:

Instead of up-training, as you mentioned, we've taken the job and applied new machines. For many of our secretarial jobs, for example, we acquired dictaphones. We have duplicating machines which eliminate much of the extra typing that would be necessary. That's the way we have been approaching this problem. Rather than teaching the secretarial skills, we have down-graded the job to some extent so that we can make use of less skilled workers.

QUESTION:

I wonder if there isn't a fear of losing the people we train to some other firm; this is not an acute problem when we train the people for specialized duties. But when you get into this question of training general typing that is one big fear because the competition is intense. Some firms are frankly afraid that if they train a lot of them they would lose them as soon as they were trained.

MRS. GORDON:

Wouldn't there be less risk with the older woman than with the younger one? That is, wouldn't she be more likely to stay with you?

MR. SMITH:

We have been speaking of clerical employees. We all know that there is a particularly short supply of clerical employees in certain age groups. And yet we have the pattern of recruitment directed at that very age group while at the same time there is a good supply in other age groups. We've checked with the Department of Employment and with employers themselves and find that jobs are available in the lower age group but more applicants are available in older age groups. So you have an intensification of the competition for a very narrow supply of clerical employees. It happens to be in the very age group where the incidence of marriage and child birth is very high that 75 to 90% of your turnover occurs.

Now let's add that all up and see what it means for our recruiting policies. We are scrambling for this very small supply of people who are highly unstable for reasons beyond anyone's control. What does it mean for rational people, so far as recruitment policies are concerned? That's the kind of thing we ought to stop for a moment and digest. You have the same problem with engineers for different reasons. One of the more popular solutions has been to take the employee away from the other employer if you can.

COMMENT:

We have partly solved the problems of a shortage by our policy of pooling the services of clerical employees.

COMMENT:

We've tried that. I think there is a loss of efficiency in pools. At least we have been quite unsuccessful and I've never seen more unhappy people than those in a pool.

COMMENT:

I have to disagree with that. We have used pools very successfully.

MRS. GORDON:

Are people in the pools used by farming them out to the departments that need them, or is the work sent to the pool to be done there?

COMMENT:

Some of each. When a particular department has a large sized job the people will be farmed out for a period of time. But for a normal day's operation the work is sent to them.

MRS. GORDON:

That comes as a transcribing assignment, doesn't it?

COMMENT:

Yes. In our engineering group we used a small pool and the dictaphone system. Each of the groups of engineers calls the pool itself. If one girl is busy he gets a second, if the second is busy he gets a third, and so forth. It's a regular purchase system which is quite successful.

MR. SMITH:

Some companies have used a variation of the pool idea by assigning a secretary to four, five, or six individuals, depending upon the workload that is involved. You do have some problems of priority in a situation like that, but it does get away from the pool problem where you have this distinction between secretaries in the pool and those who are not in the pool. Because of status and preference many employees do not want to work in the pool but prefer to work for an assigned group of persons, given equal pay for equal work. Have you had any experiences with that?

COMMENT:

Of course. I should add there is continual movement through this pool. Some of the newer employees may look upon the pool as an unhappy but temporary stage in their work.

MR. SMITH:

Do you promote from the pool?

COMMENT:

Yes, the employees know that this is the spot from which selections are made.

COMMENT:

That makes it quite a different thing. That makes it a training pool.

COMMENT:

Well, call it a training pool if you wish, but it is a work pool.

COMMENT:

But the labels are different and the reactions are different.

MR. SMITH:

Let's get into this question of training against the background of these statistics which describe the labor market of today and for some time in the future. Some of us merely hire the skills that we want to buy. Some of us have extensive training programs. How many of us look for good potential material and then supply the skills that are lacking?

COMMENT:

Some companies in the metal trades have gone so far as to make arrangements with the colleges and universities to get college students on a part-time basis. This policy has been working out quite successfully. The men will be on the job only from two to four years, but under today's market conditions that's acceptable. There is a training problem involved, but you are dealing with a fairly intelligent group and the training needs are minimized for that reason.

MR. SMITH:

Is there any experience in the room with part-time employees, either clerical or production?

MR. ZUCKERMAN:

We have had a similar experience at Ampex where tape recorders are manufactured. We've been using part-time people in drafting, in junior engineering, and in working with key punch machines. Some of these people are going to school, some of them have family obligations, and some are people who only work part of the year. We have people who come regularly every summer, and then return to school for nine months. We take summer high-school students at their junior year and expect to have the same men work every summer until they finish university. We have a number of them on the semi-skilled electronic assembly jobs. These programs have been quite successful.

QUESTION:

Is your motive recruitment or the desire to get people on permanent status? Or do you actually get production from most of these people?

MR. ZUCKERMAN:

The motive is to get permanent people, but the supervisors at our main factory told me this summer that they were very well satisfied with the productivity of these young men. Some of the employees who were only sixteen were as productive as some of the electronic assemblers they have had on their staff for sometime. We are introducing young people to the company at an early stage, hoping that they'll eventually end up as electronics engineers who want to work for us, but at the same time we get our money's worth.

MRS. GORDON:

Do the part-time workers create complications in scheduling production?

COMMENT:

I have heard of an interesting way of scheduling. Some companies hire part-time housewives for morning and part-time university or high school students for afternoon and evening hours. You get a whole worker out of that combination. I think the telephone company does that.

MR. SMITH:

Suppose we open up another broad area of discussion -- the area of employment restrictions, restrictions such as policies that prohibit employing members of the same family, age restrictions, sex restrictions, race restrictions, and so forth. Let's start out with the question of age restrictions.

On the matter of age restrictions, I find formal policies vary from group to group: a different policy for clerical work, another policy for women as contrasted to men, a different policy with respect to plant people, and another policy for management people. There is good justification in each case for those variations -- at least a logical explanation for them. In addition to these formally stated policies there are exceptions to the rule on a case-by-case basis, most of which make good sense. And then there are the unwritten policies over and above these formal policies. Let's start out with the formal policies. Let's talk about female clerical employees, a subject close to the hearts of all of us. Do any of you have age restrictions?

COMMENT:

We have a policy of not hiring females over 40, but that is company-wide and not restricted to clerical employees.

MR. SMITH:

Is there a reason for that?

COMMENT:

It's a historical reason and goes back to the inception of our retirement benefits.

MR. SMITH:

It has to do with the number of years of service?

COMMENT:

That's right. The number of years of service before retirement. They retire at 60, and must have twenty years in the company. We have the same policy on men aged 45. We don't hire them over 45.

MR. SMITH:

How many of us follow the policy of specifying in our request for clerical employees to the personnel department that they not be over a certain age? How many of us from personnel departments, for example, characteristically receive job orders which indicate that a person over a certain age is not desired by that particular department or for that particular job?

COMMENT:

We get such job orders.

MR. SMITH:

How do you handle them?

ANSWER:

Well, we send it back to the department and tell them to leave it off. We'll send them a qualified person. I'm sure that in our company, if anybody is ever turned down because of age, the person who turned him down would be in difficulty.

COMMENT:

We find some interesting things in our company. Although we have a stated policy that the only qualification is the ability to do the job, older people are not being hired. We happen to be a company with very young supervisors. The average age of the middle management supervisor is the early 30's and they want to hire people who are either around their own age or younger than themselves. In the case of the clerical workers they all want younger women. When we refer qualified women to them who are their ages or older, they turn them down. It seems they have an unconscious age bias.

COMMENT:

Human nature operating. (Laughter)

MR. SMITH:

Who else has this problem of the age bias against new employees? Actually it could occur at the point of final decision when a person is brought in and introduced to the supervisor for whom he is going to work. He might be turned down at that point rather than at the personnel office. Have the rest of you experienced that problem?

COMMENT:

It depends on the individual. If he is good in supervising older people it is minimized a great deal. Initially you might have a problem. We have a number of younger supervisors who are supervising older people with no problems whatsoever.

MR. SMITH:

How do you account for that? Was it consciously met in your company or just something accidental?

COMMENT:

One of the reasons is the age group in our company -- 30 to 40. If we were to hire continually into that age bracket we would face a period 20 years hence where most of the people would be retired. Therefore, we want to spread it out and hire younger people.

MR. SMITH:

That's looking way ahead, but it is a very unusual point of view. People usually look back when that problem arises and wish that they had done differently. It's a rare firm that visualizes the risk in advance and does something about it.

COMMENT:

We have no age limit on the applicant. We will test anyone of any age. But in the two years that I have been in personnel I don't believe we have hired one over 45. That is because they are unable to cut the mustard, as it were. We happen to be a production shop, so it's just a question of dexterity and speed and **accuracy**.

MR. SMITH:

How long do you give people to attain the approximate speed? Do they get any kind of probationary period?

COMMENT:

We have a 30 day probationary period. But we have a screening process where we attempt to test these people ahead of time to determine their dexterity and the amount of speed they can attain prior to actually putting them on the job. There is no question of the attitude of the younger man supervising the older man. We're getting requests for people who can get in there and make 800 postings a day or make a thousand units a day on a specific machine. The older worker just can't reach these standards, and that's the reason that supervisors won't accept older people, rather than any particular bias against the older people. If you have older people on the job, in most cases they are particularly skilled. There you can use a person with greater mental ability and experience, which an older worker would have. But those are not the type of jobs that we are getting requests for.

MR. ZUCKERMAN:

Research data that I have seen shows there is some evidence that, given a little opportunity to come up to speed, the older person can make that speed and that the older worker in general has more motivation to maintain that speed over long period of time because he or she needs that job more than the younger worker. Of course, this is a problem that you don't get a chance to solve with your men.

MR. SMITH:

We all know that one of the classical reasons for not employing production workers over 45 is that they cannot meet production standards. Now one of our problems, as Mr. Zuckerman has just pointed out, is that this reasoning may not be entirely valid. One of our problems in the future will be to re-evaluate the reasoning that's involved. Certainly our supervisors do take that point of view and certainly our personnel officers do act on that assumption. But one of our problems today is to re-evaluate those views and those assumptions and see to what extent they hold water and to what extent they don't.

QUESTION:

Mr. Zuckerman, have you had any experience with these older workers?

MR. ZUCKERMAN:

Well, ours is a relatively young company. We've only been in business for about 15 years. We do have some older workers, of course, who have started with the organization and have remained with it. Most of them are, as I said, in the higher skills. Instead of running an automatic screw machine the older worker is running an engine lathe where it requires a greater

knowledge of blueprint reading and a higher degree of skill with not as great an emphasis on production. They work on higher price units where greater skill is required. In our company the older workers have been given positions of greater responsibility with less emphasis on the dexterity requirements.

MRS. GORDON:

There are data on just those factors, particularly on older women in factories. They did turn out to take a little more time to come up to speed, but in the long run they stayed longer with the company, had less absenteeism, and their production was more steady.

MR. SMITH:

So far in speaking of hiring practices we have assumed an equal supply of older and younger worker. But we don't have that. What we do have is an adequate number of persons over a certain age and an inadequate supply under a certain age. What do you do under these circumstances? What we do, of course, is try to hire where the supply is short and neglect the group who are available for work.

COMMENT:

In our company we have had some resistance from our supervisors on the matter of hiring older people, but each time we convinced them that there wasn't anyone else available.

MR. SMITH:

How did you do that?

COMMENT:

By showing them samples of the labor market. When a requisition comes in from the supervisor we, of course, do what we can to hire people who meet the job requirements as specified. However, if the available labor supply happens to be below the specified standards, then we show the supervisor where he is going to have to modify his standards.

MR. SMITH:

Do you do the actual hiring, or do you do the preliminary screening and interviewing and then depend upon the supervisor to make the final decision?

COMMENT:

We do it both ways, actually; it depends on the job classification.

MR. SMITH:

Are there a lot of people over 45 looking for jobs, Mr. Campbell?

MR. CAMPBELL:

National and California figures seem to be about the same. Thirty-five per cent of all applicants who register for work at the local offices of public employment services are over 45. Only 16 per cent of our placements are in that group, and that's an improvement in the last year or two. So there is a reservoir of people over 45 years of age and under 65. Our registration of people over 65 is quite small. I think it runs around three

or four per cent. Roughly a third of all applicants are 45 to 65, and less than half of them get placed.

MR. SMITH:

A study has just been completed nationally in some of the major cities, one of which is Los Angeles, which proves that a person over 45 years of age has much more difficulty getting a job than a person who is under 45 years of age.

At the age 45, for some mysterious reason, workers become unemployable in eyes of the average employer. Now, there are variations to that. A machinist has little difficulty finding a job regardless of the fact that he is over 45. For the most part, people in the construction business have little difficulty if they are journeymen. For the person in skilled clerical work, managerial jobs, and for a very highly qualified person in a technical field -- an engineer, a scientist, or a highly qualified technician, as well as a highly skilled craftsman -- there is little difficulty finding employment. In some cases there is the barrier that company policy will not permit hiring over 40 or 45 for the sole reason that it will have an impact on the retirement program. The reason is not because they wouldn't want the person and not because they don't need the person, but because they have never done it and for some reason they are not willing to change. And that's typical, I'm sorry to say, of what we are facing in the next ten years in dealing with this problem of placement and recruitment of workers.

I have a bit of information from a survey made in San Francisco earlier this year covering 161 employers. This survey showed that for male clerical employees, 16 per cent of the employers had a maximum hiring age of 41 to 51; six per cent had a maximum hiring age of 51 to 65; and 41 per cent said they had no limit. Now, contrast that with the figures for female clerical help: eight per cent of the employers have a maximum age of 31; 28 per cent had a maximum age of between 31 and 41; 30 per cent had a maximum age of 41 to 51; eight per cent, 51 to 65; 26 per cent said they had no limit. These are stated policies. The actual placement patterns probably would show less older people hired than these percentages indicate.

I think that, for example, promotion-from-within policies, and various types of testing devices can restrict the employment of older workers -- not consciously, but the result is very much the same. These are some of the contradictions that seem to be apparent where there is no stated policy of restriction, but, nonetheless, we get a pattern that looks as if there were. How many have promotion-from-within policies, for example?

COMMENT:

We promote almost exclusively from within. The promotions are usually gradual, from one grade to the next. The exceptions are for positions like engineers. Before we go on the outside to hire, we look on the inside to see if we have the proper skills, and if necessary we transfer employees.

MRS. GORDON:

Is there much chance, though, for an ordinary production worker to advance? I was interested in a recent study which emphasized that there was little chance for the ordinary production worker in an automobile plant to get promoted.

COMMENT:

I think, Mrs. Gordon when you say the "ordinary production worker," that's true. But the guy that gets in there and pitches and stands head and shoulder above the ordinary worker, has, in my opinion, no difficulty in promoting himself. But the proportion of managerial jobs to workers in the automobile industry must be below one to ten. It's a small percentage, so the share in opportunities is small.

MR. SMITH:

Is it potentially possible for a man who is rank-and-filer to advance up to and beyond the general foreman level?

COMMENT:

It certainly is, at least up to a certain level, in my company. Let's take an operating group. All of our shift foremen and some of our general foremen came up through the ranks. The only limitation is where they really must have technical background. This is common when you get to the superintendent level. He has charge of a number of operating units in which it's just plain necessity that he have technical qualifications. Otherwise, all our people come up from the bottom.

MR. SMITH:

Where you have this technical qualification your company has, as I understand it, additional policies which make it possible for the employee to gain this technical assistance and education on the outside with the assistance of the company.

COMMENT:

That's right. We have a reimburseable program. Of course, it would be a pretty long job for him to complete his college course on outside time, unless he wanted to take a leave of absence. Even there we would help him financially. At the so-called superintendent level, those men have usually been selected from engineer and technical groups. In our mechanical shop groups our shop foremen have all come through the ranks. Of course, we do hire directly where we don't have enough of our own coming through the apprenticeship program. Therefore, in practically all cases there is the opportunity, I would say, for the working man to get into the supervisory group.

Speaking of the over-staffing, we had an interesting case a number of years ago in a very technical department. The top man was the kind who felt that everybody had to have a college education. Over a period of three or four years he got to the point where he had a very dissatisfied crew because he had college graduates working around the clock. It got so bad that we just had to take a number of people and scatter them to the other places in the company.

MR. SMITH:

Our time is running out and I think we had better move around into the area of retirement policies. Before opening a general discussion, however, I would like to ask Mr. Zuckerman if he, in his capacity as an employer as well as psychologist, would outline some of the problems not only that the employer faces but those the individual faces when he approaches retirement.

MR. ZUCKERMAN:

The problems that I see in retirement situation generally look like these. One is that companies which have a retirement policy have tended to follow two different kinds of policies, either the chronological age policy or a graduated age policy. In the chronological age policy where there is a strict retirement at age 60 or 65, chronological age doesn't mean much in terms of the person's capacity to do a job. Some people are ready to retire quite a bit earlier than age 65. Other people are productive past this age. There are some companies that have a graduated retirement policy. They start somewhat earlier than the fixed retirement age and begin to lengthen vacations and drop incomes slightly. With this policy the person gets adjusted to the notion of retirement. He begins to find other activities to fill his time and also becomes accustomed to the income level that he will have at retirement. In companies where the policy is flexible they use physical examinations and evaluations as the determining means for either unilaterally or mutually arriving at a decision to keep a person on for a certain period of time. Sometimes that's reviewed annually.

Another problem in any retirement program is to get the person to quit when he ought to. Another problem that is faced in retirement comes when most of the people in a company happen to be around the same age; with a chronological age policy, the mass retirement which will occur is likely to leave the company completely headless -- without experienced people. One of the solutions which is often taken is to use retired people on the staff as consultants to the younger men who are put in the managerial jobs. This gives some of the retired people a chance to contribute their services after their retirement with one or another kind of financial compensation for them.

As an example, we have a man who is 71, our oldest employee in the company. He's been in the company almost ten years. He is not as productive as some of his supervisors think he should be. One claimed that only about 50% of this man's work was productive, and yet the company is essentially afraid to make an issue out of this man because we do not yet have an appropriate pension plan. His case will probably set a precedent. I think this happens to young companies without their being conscious of it.

MR. SMITH:

This may be solved in time by your negotiations with the Machinists for a pension plan.

MRS. GORDON:

Do you have many cases in which you have to reassign a man in the later years?

COMMENT:

No. I think that over a period of time they gravitate to jobs they can do, so it hasn't been a problem as far as age is concerned. We have enough jobs that older people can do, so it isn't a difficult problem. We call it a promotion. It doesn't make any difference whether it is down or up.

COMMENT:

We have a problem retiring executives. They put some people on a consulting basis. There are some others who are more valuable; they made some of them heads of other companies. Of course, there has been some retirement. It's going to be quite a problem with us in the next few years.

MR. SMITH:

Do you have an actual shortage of top executive skills? In other words, can you justify the Company's actions economically or is this purely disinclination of the individual to let go.

COMMENT:

That's an open question. I'm certainly not going to decide that one.

MR. SMITH:

Well, let me put it another way. What's the effect of this attitude of these older executives on the junior executives?

COMMENT:

So far it hasn't had any effect because we are in the same position as other companies. That is, we have had plenty of opportunities, but I am sure that within a short time the junior executives will begin to quit. At least they would resent it. So far we haven't had that problem. And of course as long as those older men, who are owner-managers, are holding the purse strings, there's not much you can do about it.

MR. SMITH:

It's very difficult for an owner to let go. After all there is a large part of the individual owner-operator in an organization and one can understand that attitude on their part.

COMMENT:

I'd like to comment on graduated retirement. We think it makes a very difficult situation for a man with a responsible position. We do have a month's vacation for the executives with 25 years of service. It's difficult enough coming back after one month's vacation. If you increase the vacation to two months and then to three months, you might just as well retire the man, because the job has to go on. We do start at age 55 a general scheme of preparing. Because we are so scattered we can't do too much on a group consulting basis, which we think and feel would be very fine. In fact we have it on trial, with the doctor, the benefit man, and the general advisor present to discuss the matter. That could be very satisfactory, but it just isn't possible to do it in all of the towns all around the country. So it's done entirely by correspondence. We have prepared a series of pieces of literature that we send them. We have observed that they won't pay much attention to it at age 55. But when they reach 60 they go back and read some of the earlier things. They get serious about it about that time.

MRS. GORDON:

Have you ever conducted any sort of survey on how much they do pay attention to the material?

COMMENT:

Yes, we have done that and we have taken people who have been out for one, two, or three years and asked for their criticism of the plan. But that's what I meant when I said that between 55 and 60 they haven't paid much attention to it. But as a rule they have kept it or if they haven't they ask for the back issue and at the age of 60 they really begin to work on it. Our greatest problem is that some of our top executives are too busy or too disinterested to think about it till the day before.

MR. SMITH:

If any of you have read the case history of Carson Pirie Scott you'll find a discription of the way that firm is preparing older workers for retirement. This is, to me, an exceptional article telling of the interviewing and the consulting in their preparations. I'd like to ask how effective you think going through the mail is.

COMMENT:

You mean, whether it's effective or not? We're sure it's not as effective as a personal interview. In some trial cases we ran we had their wives in with them. We made it kind of an evening session. All of them that took it were quite enthusiastic about it. That's what we anticipated, but it is very difficult to do on a very broad scale.

MR. SMITH:

Someone questioned whether people want to retire. I think most of us don't want to retire.

COMMENT:

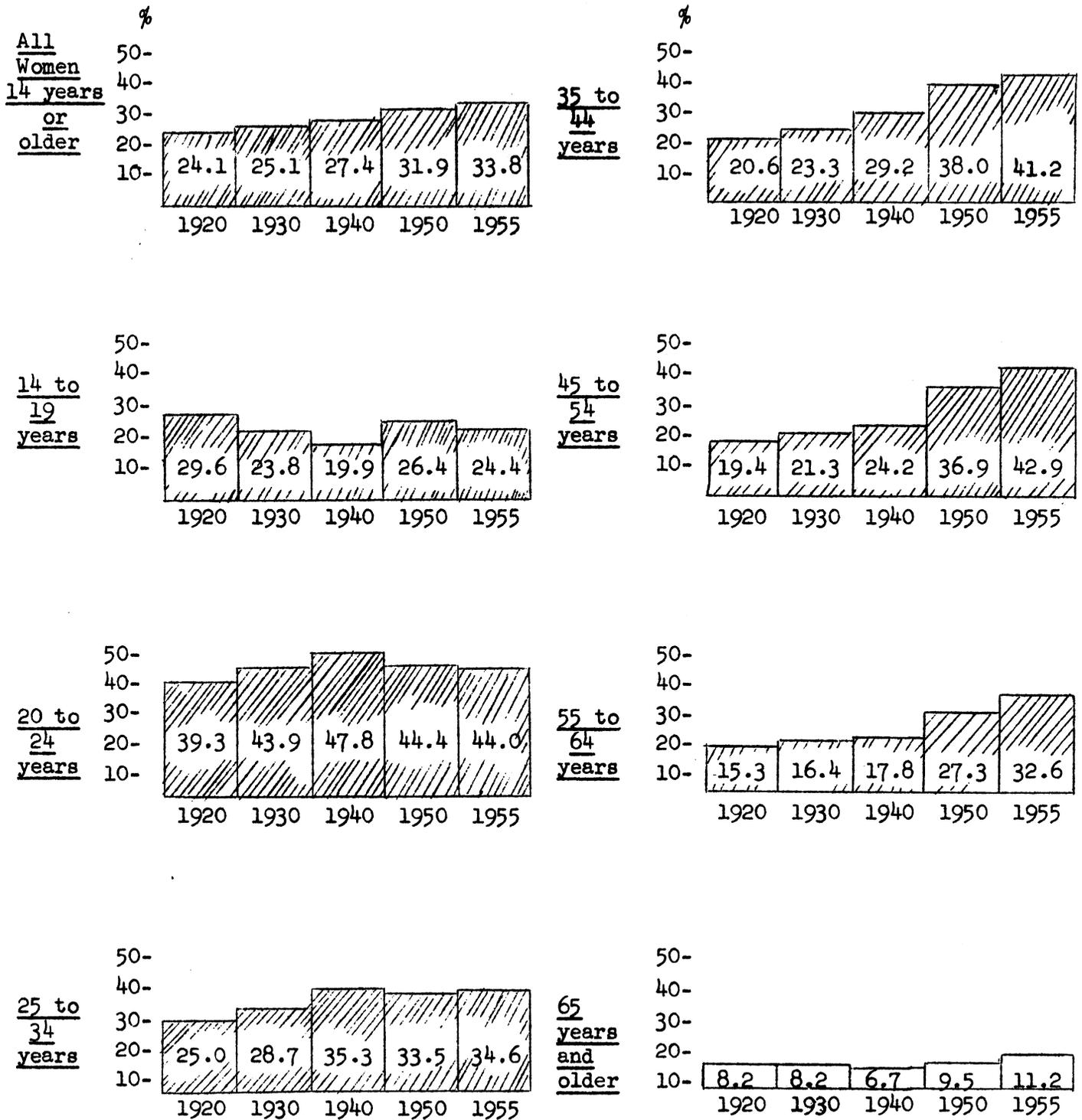
Perhaps I should amplify my remark about this. What's bad is to have an intellectual void, especially for managerial and technical people who are used to using their mental capacities. I think that some of the pre-retirement plans, which provide more time off before retirement and some kind of direction into other activities, give a person a chance to engage in fruitful mental activity while they are still capable of it. Sometimes we ought to shift them to completely different kinds of activity before they retire. Sometimes they can use new activities to make a living if they are on a small pension. If they are not worried about finances they can just enjoy themselves. I have known in some cases where industries have taken advantage of retired people and employed them.

MR. SMITH:

Does that point to one of the difficulties in the whole retirement concept? We have a tendency to associate stopping work with retirement. In other words, retirement to some people means not doing anything useful. Actually, it could mean merely changing one's job within the organization or moving into another organization. I think this would take care of the point you raised, Mr. Zuckerman, that people need to feel they are doing something useful, even though it isn't as useful or valuable as it has been in the past.

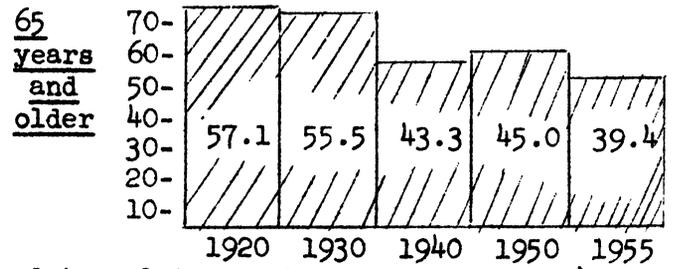
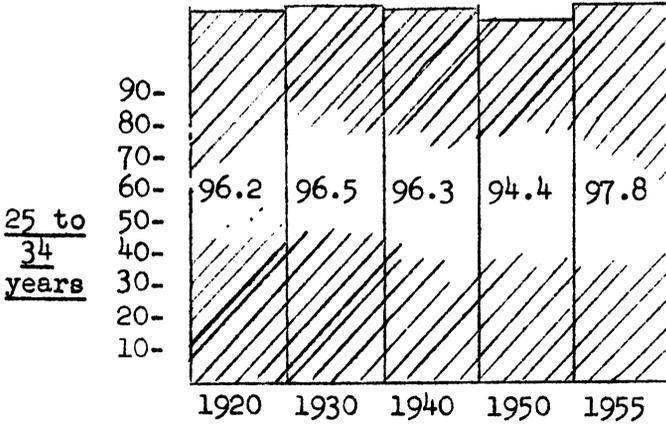
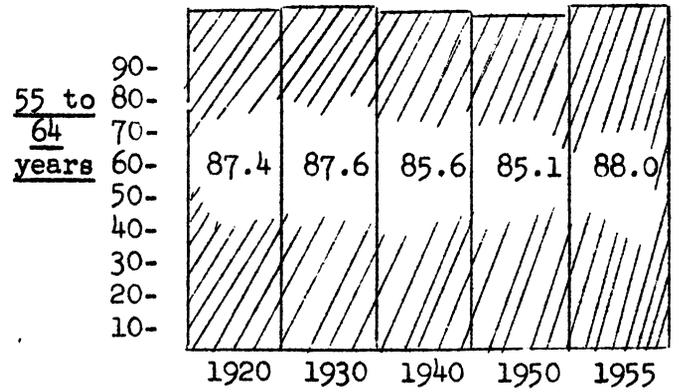
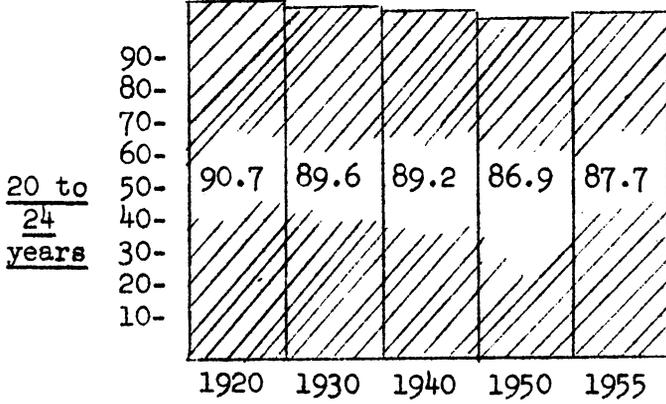
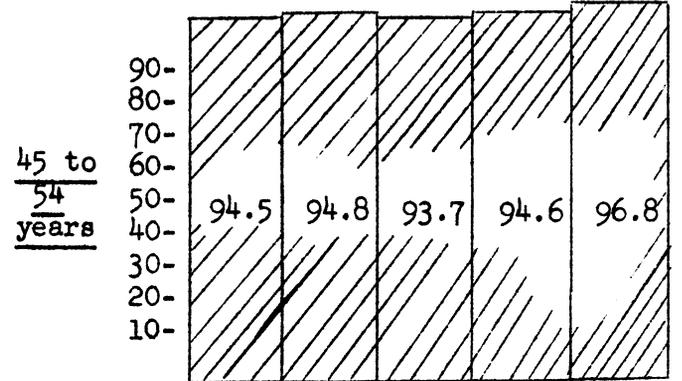
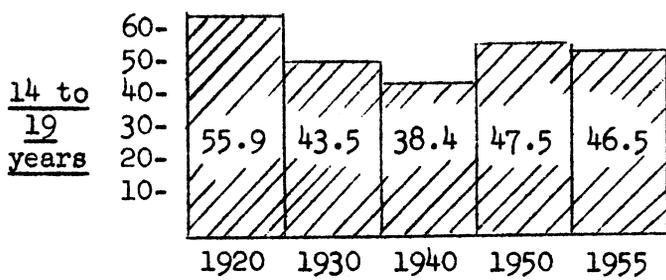
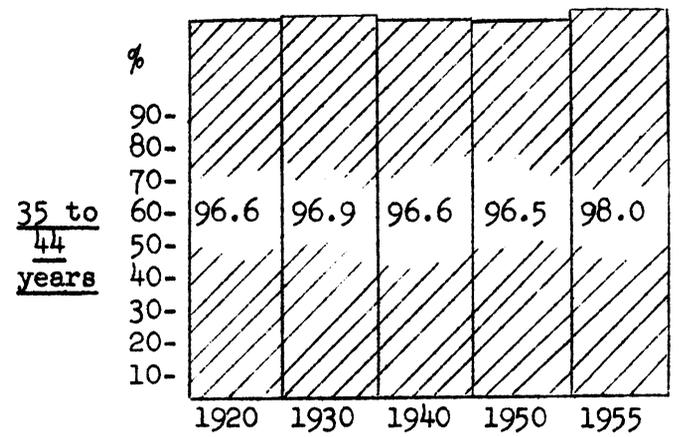
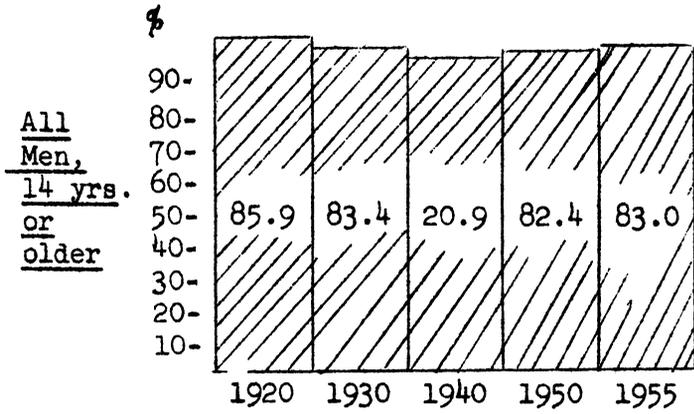
We have come to the end of our time. I know we haven't answered all your questions today. We have enjoyed the discussions and I appreciate very much your interest in the subject. After all, beautiful Yosemite Valley is a terrific attraction for us to overcome, so I want to pay tribute to your strength of character.

Chart 1. Per Cent of Female Population in the Labor Force, 1920-1955



SOURCE: U. S. Bureau of the Census (The data relate to the month of April.)

Chart 2. Per Cent of Male Population in the Labor Force (including Armed Forces), 1920-1955



SOURCE: U. S. Bureau of the Census (The data relate to the month of April.)

THE FUTURE OF THE OFFICE WORKER

Discussion Leader: Eugene W. Burgess  
Visiting Professor of  
Industrial Relations,  
University of California,  
Berkeley

Resource Members: Edward B. Matthews  
Operations Analyst,  
Industrial Indemnity  
Company, San Francisco

Joseph P. Williams  
Assistant to the Controller,  
Bank of America NT&SA,  
San Francisco

THE FUTURE OF THE OFFICE WORKER

Eugene W. Burgess, Discussion Leader  
Edward B. Matthews  
Joseph P. Williams

MR. BURGESS:

In our workshop we have a subject that needs remarkably little introduction. No one need explain to any of you gentlemen the short supply of office workers, and each of you has heard often enough that the supply is going to become relatively smaller. If this conference has presented one point beyond question, that is it. But we are faced with a shortage of competent workers that goes beyond a shortage of mere bodies. I suspect, though, that we will hear more later about this from our resource panel members.

We are all aware that some quite extraordinary changes are in store for clerical workers with the application of electronic data processing and other technological changes to clerical operations. It will be one of our major concerns in this workshop to explore some of those changes and to see what quantitative and qualitative effect they may have on the office worker group.

To begin, I should like to call on Mr. Joseph P. Williams to discuss the application of technology to certain banking operations of the Bank of America and its probable impact on the workers affected.

MR. WILLIAMS:

Thank you, Mr. Burgess. First I think it would be well to give you a picture of our operations. The Bank of America is a state-wide institution with 23,000 employees, and of that number approximately 19,500 are clerical workers. There are 586 branch operations and nine headquarters or staff operations within California. In the branches about 85% of our 18,500 employees are office workers. About 92% of our administrative headquarters employees are office workers. We do not have a large variety

of job classifications among clerical workers in our branch operations. Of the 18,500 employees, 4800 are commercial tellers, 2700 are commercial bookkeepers, and from 800 to 900 are proof machine operators. These are the girls who work behind the scenes batching checks on other banks and getting them ready to send out throughout the country. The same is relatively true of the staff headquarters where a few centralized operations are conducted. There are two very large proof operations at staff headquarters that do the work for a number of the branches.

With large numbers of employees doing similar work there are fertile opportunities for automation. Bank of America has done more with automation in office work than any other company west of the Mississippi. And yet if we continue to increase in business and California continues to increase in population, installing all this automated equipment will do no more than enable us to maintain our current employee level or, possibly, hold us to a slight increase each year. In other words, this is not going to solve the problem of an aggravated shortage of labor in the clerical market in California. It is very clear from this that we are not in the position of some of the other companies who expect to reduce their clerical work force. Therefore, I'm just as much interested as any one else in solutions to some of the problems concerning office workers. We're going to have the problems with us for a long time and in very large numbers. We are seeking solutions in two approaches: one is on a cost basis, and the second is on an employee-saving basis, cutting down the staff as best we can to meet these arising needs in California.

We also conduct a certain amount of research about our employees' attitudes. We not only have exit interviews where possible, but have made an opinion study among separated employees during the last six or seven years. This consists of a questionnaire which goes out 30 days after termination. It does not have to be signed. We use it to try to confirm the reasons for separation given at the time of the termination. Incidentally, they have not been confirmed. The answers we get from the questionnaires have not been the answers we received when the people separated. I think that gives you the general picture of what we are doing.

MR. BURGESS:

Thank you, Joe, for giving us that sketch of the clerical problem where many thousands are involved. Now we will hear from Mr. Matthews, an operations analyst for the Industrial Indemnity Company of San Francisco. This is a relatively small employer in California, but, nevertheless, one which is using application of technology to office procedure to a very advanced degree.

MR. MATTHEWS:

Thank you, Mr. Burgess. In terms of the two companies, Bank of America and Industrial Indemnity Company, there is a great deal of similarity in our operations. The major operations of both companies are in the state of California, and this is the labor market with which we are presently concerned. We have about 800 employees in our company. We are divided into approximately eight major offices spread throughout California, with two more offices in Idaho and Utah. Of the total of 800 employees about 130 are what we consider supervisory personnel, which leaves about 670 in the clerical or white collar area. Surprisingly enough, in our company we

have an unusual ratio of males to females for a financial institution: about 52% of the 800 are females and 48% are males. Generally, financial institutions have a larger proportion of female workers. I also would like to point out that we have rather high educational qualifications. The average female in our company has almost two years of college, and the average male has more than three years of college. This is considerably higher, I think, than most financial institutions.

We are developing an approach to automation in terms of its total concept. Every single employee in our company has been thoroughly indoctrinated with what our whole program is, what our goals are, and what his or her relationship will be to this whole program. This has been an educational and training process to prepare each employee for the new developments. We've been very successful. We've stressed the fact that while new skills will be needed, there will be no loss of jobs.

Everything we do now is under consideration. What are we doing? Is this the best way to do it? Can it be done more effectively some other ways? Are the machines that we are adopting or considering now the machines that can best accomplish what we must do? Is there anything else available that would be economically sound and effective to accomplish the same operation or the same type of work? And then in the area of re-training: Are all of our personnel sufficiently qualified now to go along with what we consider the total concept of data processing? What more do they need to know and how do we get this re-training started and accomplished in order to complete our total program? And of course we want to know how to avoid having to lower our personnel standards. I think, Dr. Burgess, that that is about the background of my company.

MR. WILLIAMS:

I'd like to make one additional comment here. I hope we don't spend all of our time just worrying about the impact of automation. I am virtually certain that even with our large number of employees, we probably can't automate much more than 17 to 18% of our office jobs. That still leaves us with a very large number of employees and concomitant problems which aren't going to be solved by automation. I think this is true in almost any kind of business, with the possible exception of the insurance business because it is one business that works almost completely with fixed data, fixed premium amounts, and fixed clauses that go into written contracts. Everything we do is at the whim of the customer. Each business transaction is different. This is true of other industries where customers' orders vary. In most industries there may be a whole series of jobs which may be similar from one office to another, but the offices in themselves are quite small. The median size of our 600 offices is 23. Of that 23 we might eliminate four -- if there is no increase in business. That's about the extent of the impact of automation -- at least in the next 15 years. Beyond that we can envision automatic tellers and other advancements, but not for the near future. I think automation is overly stressed today. It is far from the solution to the office worker problem.

MR. BURGESS:

One factor that seems to come to the surface in discussing office workers today is our failure to distinguish between male and female employees. It would seem that there is quite a difference in the problems that could

and do arise, or that are complicated by the fact that women, numerically at least, dominate the clerical force. I'd like to ask both of you if you find any particular differences that stand out in this application of increasing mechanization because of the predominance of female over male.

MR. WILLIAMS:

There are plenty of differences. There is quite a bit of difference in motivation. Surroundings mean more to a woman than to a man. Economic factors have far greater importance for the man than they do for the woman. The attitude of the boss influences the woman much more than it influences the man. If he is being paid a salary which is better than what he may get somewhere else, he'll put up with a lot from his boss. The girl won't necessarily do that.

Now when you translate this into the field of automation you have some basic problems. There aren't too many jobs right now, though there will be later, which are open to women in this field. There are very few female programmers in the financial field. The reason for it is that very few girls have ever been exposed to all the details of the operations. About 99% of the operators are male today. About the only jobs which are open to females in automation are those which have to do with conversion of data to the media which have to go through the machine -- the ones who maintain the tape libraries, as they are called, which are used to house and store all of the information. So that particular field isn't too open to women today, but I think it will be when they can get more into the general operations and understand the details. Automation is a peculiar type of business. There is no such thing as an error in automation. If your operation is going to work, it has to work 100% perfect.

MR. MATTHEWS:

In our situation we find we have to consider men and women as two separate categories because of the terrific variation in personnel turnover between them. At the present time the personnel turnover among our female personnel is running at about six per cent per month, whereas among our male personnel it's running about one per cent per month. That's quite a difference.

QUESTION:

I am interested in Mr. Williams' statement that automation in the Bank of America will enable you to maintain about the same level of employment as your organization expands. If it is true that automation closes the door to some extent to women workers, how can you re-assign those replaced by automation, when you also say that there will be no loss of jobs?

MR. WILLIAMS:

There are two means of coping with this problem. Women will be transferred to some jobs formerly held by men. I don't think there is much dispute today that female tellers are much better than male tellers, so we have been converting our teller lines more and more to women. As we grow there will be a proportionate increase in tellers' jobs. The girls that are bookkeepers, safe deposit attendants, and new-accounts clerks will go into those jobs. The second way is to take advantage of the normally large turnover among female employees.

QUESTION:

I wonder if I could ask just what a "program" is, and what a "programmer" does?

MR. WILLIAMS:

I think the best example I could give you is our ERMA, the electric bookkeeping machines that we developed at Stanford Research Institute. The two men who programmed ERMA for Stanford Research had to pick the brains of two of our men who knew most about our bookkeeping operations. This meant starting from the very beginning to get in minute detail every single step that had to be followed in the processing of a check, from the teller's receiving it until it appeared on the customer's statement. This information is recorded in symbols so that the machine can be instructed to do something with it. A program is the minute instruction material that has to be fed into the machine to tell it exactly what to do and how it is to react to each particular symbol that is given. Perhaps Ed Matthews can offer an example.

MR. MATTHEWS:

An overall program is a very broad analysis with symbolic representation of what you want to do. Then you put it into extreme detail by the use of symbols. These symbols have been standardized in the data processing concept. Circles mean one thing, squares another, triangles a third, and so forth. Those figures are then translated into mathematical figures. This step is called coding.

There are two job categories in the whole process: programming and coding. The programmers actually analyze and develop the symbolic representations of the operation, and the coders translate that symbolic representation into mathematical figures. These figures are then punched into some kind of media -- into punch cards or punch paper type or in some instances directly to magnetic tape -- and they are stored in the electronic computer itself. These, in effect, are the instructions to the machine to tell the machine exactly what to do with the data in order to get the proper answers. That, basically, is the whole area of programming.

QUESTION:

You mean this is all done in advance before the machine actually operates on a particular transaction?

MR. WILLIAMS:

It's done normally before you even receive the machine.

QUESTION:

If changes in your operations are required, does this necessitate changing your programs? Then do you have to have a staff on hand to consider the changes that might be involved?

MR. WILLIAMS:

Yes. You cannot change any operation without changing the program in detail.

QUESTION:

You have to change the machine, too, don't you?

MR. WILLIAMS:

Not always. Our ERMA, for instance, works on a fixed program. If we wanted to change that operation, it would cost thousands of dollars because the program is built into the machine. A programming operation may cost around \$75,000. However, in the IBM 702, which is similar to a Univac, the program is not built into the machine. There are signals, and you signal the machine what to do according to a particular program. That kind of programming is not difficult to change over. But you do have to test it in it's entirety because it must be 100% correct or you will only get question marks on the typewriter which produces the answers. That's the difference between a single purpose machine with a built-in program and a general purpose machine where the program is on paper.

QUESTION:

What's the advantage of not using the general purpose machine?

MR. WILLIAMS:

If you have sufficient volume it's much better to use the single purpose machine. The mechanism itself is not as difficult to build. A single purpose machine can generally be built much more quickly and much more cheaply than a general purpose machine, which has to have far more so-called "thinking avenues." They are not "thinking avenues," but that's what we call them.

MR. BURGESS:

Joe, in the Bank of America have you found that your hiring qualifications have to be changed after you have automated some operations?

MR. WILLIAMS:

There isn't any question about that. The skills required in automated office work are much higher than the skills required to do the jobs we now have.

MR. MATTHEWS:

At the same time there will be some jobs that require less skill. As I have mentioned before, the average female employee in our company has an average of two years of college. We have had up until a year ago a very high standard of hiring. As a result of putting 30 IBM 884 machines in operation, there is a certain monotony in some of the new jobs. In using the electronic typewriter tape punch there are certain highly repetitive duties. The female employees that we had hired previously who are doing this new work are failing miserably because their intelligence, training, and education are above what is necessary for operating this kind of equipment. We are considering lowering our hiring standards, and also lowering the wage, for this particular job. We may hire high school girls on the understanding that all they are going to do is just sit down and type a typewriter and take information from this document and put it on a hard copy all day long, eight hours a day. I just wanted to point that out, because I think in the field of automation and data processing there are at least two phases. There's the one phase where you need higher skills and another where lower skills are required.

QUESTION:

If you raise your hiring requirements, will you have to do more training within your own organization? If not, how are you going to get the schools to educate specifically for what you might need?

MR. WILLIAMS:

I think there are two problems there. One is the need for greater cooperation between industry and education, which is coming gradually, and the second is increased demand on in-company training. Of the work force for these new functions we have trained about 60% or 70% of the personnel within our own organization. We've hired about 30% of them. But the 30% we then had to convert to detail training rather than training on the equipment, whereas we had to train our own people on the equipment.

QUESTION:

What kind of education do you want for these new jobs?

MR. WILLIAMS:

It's difficult to answer this. Some of the fellows who turned out to be our best programmers were men with only a high school education. They had indicated in their progress with us that they were first class operational men with good imagination. Now, I think usually you'll find imagination in those who have pursued higher education. But, in itself, I don't think advanced education is a qualification. We will have to look over our people and find those who seem to have the necessary qualifications.

QUESTION:

Where do you train them?

MR. WILLIAMS:

Some of the colleges are giving this training today. My guess is that every college will have to have some courses in this field in the future. Some of the companies that build the equipment run schools which offer various kinds of training.

MR. MATTHEWS:

I dispute the assumption that we need greater skills. I think it's a matter of re-training for different skills, not additional skills. I think you'll agree that much of the accounting taught today in the Universities is passé. Within the past two years some universities have made great advances, though. Four years ago one university held the first conference to establish the responsibility of the educational institutions for developing the skills in this field of computers, automation, and data processing.

MR. BURGESS:

Perhaps you will recall one of the articles in the workbook talks about the current shortage of office workers amounting to about 600 thousand. Also, companies complain that the office workers offering themselves on the labor market have less training than they used to have, particularly in the operation of office machines, typing, and dictation. But perhaps that's a reflection of what industry requires rather than any lessening of available specialized training in the vocational and high schools.

MR. WILLIAMS:

I'd relate the problem to something else rather than that. Prior to World War II we had rather high unemployment. The survival of the fittest in most cases is what determined continuity on a job. Thus, in the labor market probably 80 to 90% who were unemployed were those not acceptable in the competitive field for jobs. Today I think you can say, for all practical purposes, that there isn't any unemployment. What we have is a shifting labor market more than anything else. This means that each of us in our office fields is employing those who couldn't qualify in previous periods. Ed Matthews stated the need for re-training the people we are reaching for. Some of these people you just can't re-train. They just don't have the ability to begin with, because you are hiring that lower level of the labor market. We tend to think that this has something to do with the increased skill of the job. I think it has to do with the decreased knowledge or intelligence or basic abilities of the individuals we are employing.

MR. BURGESS:

One of the principal problems that has arisen in practically every industry with the application of automation and mechanization of the operations has been the effect on supervision. The question arises whether supervision, as we have traditionally known it for the past 20 or 30 years, has to undergo a rather decided change in orientation, because the attitudes and motivations of the workers (particularly the white collar workers) are quite different today than they were prior to World War II.

MR. WILLIAMS:

When most of us started to work, our supervisors, by and large, were successful because they used fear. The employees were afraid of losing their jobs and would respond to the dictates of the supervisor. Since jobs have become more plentiful, the employee has lost this fear and he reacts on a basis of respect more than anything else. Most of us recognize there has been a failure on the part of management to actually do something about the process of selecting supervisors. This gets into the field of motivation research. Now, most of us who propose this have not succeeded, but my own proposal is that for every dollar we put into methods research we add a dollar for motivation research. Today, to get quality work out of the employee, I believe we have to have supervisors who achieve respect by their personalities, and not through fear. Therefore we have to change old habits and customs of supervision. We have to get close to our people.

I believe we have to reduce the size of the work units, and this would apply even to automation. Rather than have these giant machines with a large work force concentration in one or two areas, I believe we would be better off to spend a little more money and have 25 or 30 areas with a smaller number of people in each area. Even the most junior employee could be much closer to the supervisor. This, to me, is vital, because the clerical cost is the most pressing problem to management today. In the white collar field it is generally recognized that we are getting less productivity than before. I think the basic reason is supervision.

MR. BURGESS:

Have you found that the size of the work unit makes a difference in productivity or turnover?

MR. WILLIAMS:

Yes. Our branches vary in size from two to 225, with a median figure of 23. Our turnover is less in the small branches, even in small branches within a large city, than in the large branches. I think there are two reasons for this. One is the personal contact the manager of the small branch has with each of his employees. Also he is close enough to the operation to have some appreciation of each job operation. The managers of our large branches are concerned with million dollar loans. They're not concerned with Mary Jane as a bookkeeper, and most of them forget the complete operation of the bookkeeping unit. The manager in the 20-man branches doesn't. He passes that girl as he moves around the branch. He can see if she is in trouble. He can see the expression on her face, and he might say something to her. He might give her a little pep talk. You don't get this in the large offices. You may get it from the lower level of supervision, but I think Mary Jane likes the big shot to pay some attention to her. This was a basic finding of the Western Electric experiment many years ago. I think management has forgotten it.

COMMENT:

Some supervisors do get more out of their work force than others. I think that what a supervisor expects from the employee makes a tremendous difference. When I worked with the Bank of America in various jobs, the thing that was important to me was the expectation that my supervisor had of me. If he expected and assumed that I would take responsibility, that I could do the work, and gave me the opportunity and helped me when I needed it, then I did take more and more responsibility. If the supervisor has the attitude that you can't trust anybody and the best you can expect of employees is that they will put in their time, then motivation and productivity will be low. I think that the supervisor who has that attitude loses the people who would take responsibility, and he is left with those employees at the bottom of the barrel.

COMMENT:

I agree that the attitudes of employees largely depends on the supervision that they get. I recently read a survey in which some 240 employees were asked to list in order the occupational considerations they considered most important. They named, first, their recognition that what they were doing was important in the scheme of things. Second, that they were in on what was going on. Third, that the supervisor was someone to whom they could go with their problem, either personal or otherwise. Then came wages, working conditions, and so forth.

They asked the supervisors of these groups to name what they thought was important to the group in order of their importance. The supervisors started out with wages, working condition, and things of that sort. The point is that the things that the supervisors thought were most important were the things that they themselves couldn't give. The things that the people wanted were the things that the supervisors could give.

MR. WILLIAMS:

We have not saved one penny with our automated installations as yet. These are all future savings you start writing off for a couple of years before you start getting in the black. It's going to be a question of supervision whether we get in the black in the third year, the fourth year,

or the fifth year. It's not going to have anything to do with the efficiency of the equipment. It's going to be a matter of supervision.

I think there is something else that we might discuss as a possible aid in solving the problem of the shortage of white collar workers. This is the use of the older worker. There is in the labor market today, clearly, a large number of men and women over 45 and 50. If you examine the records of these people and the records within your company, I believe you will find that on the whole their absenteeism is much less than that of the younger workers. I think you will find that it will pay you to offer certain benefits to those people and have them for merely 10 or 15 years instead of trying to employ some of the undesirable employees that you're hiring today. This is a partial solution to the office worker shortage problem.

MR. BURGESS:

Hiring of older workers could bring considerable stability to any work unit. Yesterday Professor Haber stressed the growing number of what he called the mature worker, those from 45 to 65. This is going to be an increasing problem to society and industry. The problem of unemployment or under-employment of these workers will increase in severity if there is any slack in our present full-employment prosperity, or if automation eliminates more jobs than it creates.

COMMENT:

I think the unionization of office workers should be a major subject of today's discussion. Maybe it's worse today in some offices. It may be worse tomorrow. Or we may be able to overcome it by intelligent supervision.

MR. BURGESS:

Has anyone here had any direct experience with unionization of office workers?

COMMENT:

Our office workers are almost completely unionized. We have a problem because of the restrictions on managerial prerogatives contained in the contract. For instance, in our employment we can't take a person off one desk and put him on another to help in case of backlog. It's a violation of a clause. There are many areas in which the immediate supervisor is similarly restricted.

COMMENT:

I think there is no question that unionization limits management's flexibility. But how can you prevent union organization?

COMMENT:

Every time we have a unionization it's because management has fallen down on the job. And there isn't anything that the unions have ever brought up that management hasn't already given or hasn't already started in the past.

MR BURGESS:

Well, the history of unionization in this country has shown that it occurs even where management has been way ahead of what you might call union demands. There are many reasons why the unionization of office workers has been relatively much slower than for hourly paid workers, and in many cases hasn't even taken hold. But the idea that unionization is the result of agitators simply trying to gum up things is incorrect. Throughout the world, workers form unions for what they feel is their own protection. It is really a protest movement against a change in their habits and ways of life. We could very easily have social forces that may cause a rapid increase in the unionization of office workers. We may find them organizing for many reasons that have nothing to do with whether the employer was or was not being fair. That could very well happen. For example, in my own experience, in all our plants the production workers were highly organized and their union was concerned about the possibility of rival union raiding. To close off every opening they would try to organize the office workers in our plant office.

COMMENT:

In making comparative work surveys throughout the San Joaquin Valley I found numerous places where the office workers were not interested in forming unions, but in the shops and in the warehouses workers were forcing the issue. There are a number of very large concerns which are not unionized today. No major banks have any unions. There is a good possibility that unionization will not make much headway for a long time, because of the heavy predominance of female workers and the large turnover among office workers. These people don't see far enough into the future to expect to get anything out of unions.

MR. BURGESS:

The union organizer will tell you that it's very difficult to get women interested and to hold their interest in union organization. I can recall a very long and costly strike where the majority of the workers were women. But after the strike was over and the contract was up for negotiation the following year I was delightfully surprised when the lady who represented the women workers addressed her fellow male stewards on the negotiating committee, "If any of you SOB's start talking about strike this year you won't find the women with you." We didn't have too much of a problem negotiating after that. Some union men have said that once women had taken part in one strike, they couldn't get them in on another one. I suppose the high percentage of women among office workers and clerical workers in one of the highest walls they'd have to scale if they wanted to do it on a sheer organization drive.

COMMENT:

In a recent magazine article a union spokesman said that if automation brought increased skill requirements, there would be greater resistance to unionization. Resistance increases as the level of the job increases. Leaders of certain unions would have no appeal to more highly skilled people.

MR. BURGESS:

The other side to this picture is the fact that automation may decrease the skill requirements of many office workers. It may make them

feel that they are no longer close to the management elite and no longer have the upward mobility that, generally, the office worker is presumed to have. However, this question of unionization of the office worker is big enough for a whole conference, or at least a workshop to itself. We have only touched on it and we certainly haven't settled the question. But we have talked about many of the problems of the office worker so that I hope we all may understand a little better what we have to face in the future. I'm only sorry our time is up.

I want to thank all of you for your interest and participation. To Joe Williams and Ed Matthews -- we are particularly grateful for your fine contribution here today.