RESEARCH AND DEVELOPMENT OF HUMAN RESOURCES

29 October 1954

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INDUSTRIAL COLLEGE OF THE ARMED FORCES

Washington, D. C.

Dr. Eli Ginzberg, Professor of Economics, Graduate School of Business, Columbia University, was born in New York City. He received his A.B. degree in 1931, A.M. in 1932 and Ph.D. in 1933 at Columbia University and was Cutting traveling fellow, Columbia, 1933-34; director of research, economics, and group behavior, 1939-42; research on occupational choice, 1948-49; and director of the Conservation of Human Resources, 1950 to date. In 1941 he was director of research, United Jewish Appeal; consultant, Executive Office of the President, 1942; consultant, Group Advancement of Psychiatry, 1946; director, state hospital study, N. Y., 1948-49. He was a member of the Committee of Wartime Requirements for Scientific and Specialized Personnel in 1942; medical consultant, Hoover Commission, 1946-48; adviser, Committee on Chronic Illness, 1950-; director of research, National Manpower Council 1951-; U. S. delegate on reparations for nonrepatriable refugees, Five Power Conference, 1946. During the years 1942-44, he was special assistant to the chief statistician, U. S. Department of War; to the director of hospital division, Surgeon General's Office, 1944; director of resources, Analysis Division, 1944-46; department consultant, U. S. Army, 1946-; member of the medical advisory board, U. S. Secretary of War, 1946-48. He is also a member of the Economics Association; Academy of Political Science; American Friends of Hebrew Universities (director); and A.A.A.S. He has published several books in the fields of economics and human resources.

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COLONEL MURPHY: Admiral Hague, General Niblo, members of the class, and guests: In preparing our manpower lecture program for the class preceding yours, our invitation to Dr. Ginzberg to speak reached him in Switzerland, and he accepted. He was resting there prior to his return to the United States after having completed a mission to the Near East for the Department of the Army and the Department of State. Incidentally, the invitation was forwarded to him by his secretary without benefit of a scope. Later, after he returned to his office in New York and reviewed the information contained in the scope, Dr. Ginzberg decided that the altitude in the Swiss mountain retreat must have been responsible for his hasty acceptance without knowledge of the scope.

We have been easier on our friend, Dr. Ginzberg, this year by accepting a topic of his suggestion which reads as follows: "Problem Areas of Research and Development of Human Resources from the Viewpoint of the Needs of the Armed Services in the Fields of Training, Classification, and Leadership."

Gentlemen, our speaker has earned many titles in his field. To mention a few, he is Professor of Economics, Director of the Conservation of Human Resources Project at Columbia University, and Director of Research for the National Manpower Council.

Many of you have had an opportunity to review some of his reports for the National Manpower Council and I am sure those working in Area 3 have used his book "The Uneducated" during their research.

It is my pleasure to present to you Dr. Ginzberg.

DR. GINZBERG: Admiral Hague, General Niblo, ladies, and gentlemen: The Good Book says that at some times one should speak and at others he should be quiet. After that introduction I really ought to be quiet.

When I received an invitation to return and lecture to this class after my performance last year, I tried to figure out the reason.

I decided that your institute resembles an evangelical group that has a hard time finding converts. Hence it encourages the same person to come back and testify again and again. Apparently, I belong to the relatively small group who not only talk about research but does research. I am therefore in a good position to repeat my testimony.

I gather that you were supposed to look at the lecture that I gave last time, but, using the experience I have had with my own students at Columbia, I will proceed on the assumption that you have not looked at it. Colonel Murphy said that you are not like my students--that you read exactly what you are told to read. In any case, I will remind those of you who have not read my previous lecture that last year I undertook to review the range of research going on in the major educational institutions and tried to relate that research to problems of direct concern to you in the services. This year I plan to turn the approach around and begin by delineating those major aspects of military manpower that research might illuminate.

I plan to do three things. First, I will give you in capsuled form an assessment of the major factors that are determining the nature of research in human resources both in and out of the armed services. This, in condensation, is the major theme that I dealt with last year. Then I plan to take up four major problem areas: selection, training, promotion, and premature separations or discharges. The choice of specific problems makes little difference. They are used only for illustrative purposes. Finally, I will try to draw some conclusions from the consideration of these four problem areas for what might be called the principles of a human resources research program in the Armed Forces.

You have already heard my official titles from the introductory comments of the chairman, but titles do not qualify a man as a competent research person. You may know considerable about the chief executive of a large corporation when you know that he is the president, but in research titles and positions do not tell much. Hence, I will call your attention to three or four of our books to indicate the scope of our research work at Columbia.

Colonel Murphy mentioned one of them, that was the study that Dr. Bray and I did on "The Uneducated," which bears on the first problem area--selection.

Another little book related to selection is called "Psychiatry and Military Manpower Policy: A Reappraisal of the Experience in World

War II." That is part of a much larger study that General Eisenhower was particularly interested in when he was President of Columbia, and to which we have devoted five years of work. It is a study of personality and performance, based on the ineffective soldier. It will seek to explain the circumstances that led to the rejection for military service of roughly 2 million people in World War II because they were considered to be too nervous or inept, and the approximately three-quarters of a million who had to be prematurely separated from the services because they were suffering from a psychoneurotic or a related disability. That is our major research effort in the field of military manpower.

The National Manpower Council's work on "A Policy for Skilled Manpower" (December 1954), includes a chapter on skilled manpower in the armed services. That has a bearing on what I hope to talk to you about in the field of training and skills.

Next, a book has recently been completed on the theme, "What Makes an Executive: Report of a Round Table on Executive Potential and Performance" (April 1955). Some of you may be interested to know that one of the members of the Round Table was the former Secretary of the Army, Frank Pace, who is now in business in New York. There is considerable discussion about military leaders in this volume.

I am referring to these books in an effort to establish my acquaintance with the subjects with which I plan to deal. We have studied these subjects. Whether we have learned much that is significant is for you to judge.

Let me move now to a brief discussion of the major background factors in social science research that I hope will help to set the stage for later questions. In discussing this subject, I will make sharp and sometimes extreme statements in order to save time and to set the stage for a stimulating discussion. I always look forward to the second hour of discussion, to which this first hour of formal presentation is preliminary.

Up to World War II the armed services never really concerned themselves seriously about manpower. They did not contemplate that they might encounter manpower shortages. This is an extreme statement because in the Civil War we had boys going into the Marines at the age of 11 and the Army qualified anyone who was tall enough and weighed enough. But it is true to say that the recognition of manpower

as a limiting factor in defense or war is an outgrowth, qualitatively and quantitatively, of the experience of World War II. Manpower was not even a major part of the planning for World War II; we had just come through a big depression with an excess of people for the jobs available.

The second statement is that research as a handmaiden of military policy is still relatively new. All of the services are still attempting to learn how to use modern science in the solution of strategic and logistical problems.

I served two years ago on the Secretary of the Army's review board of the Operations Research Office. It was clear to me then that the Army still had a long way to go in learning how to use most effectively this type of research organization. And the scientists still have some things to learn about the military.

The third proposition is that in the human resources field there is a great tendency to generalize by analogy from what is going on in physical science and to assume that the social sciences will yield the same useful applications that can be derived when one moves from weapons engineering into weapons improvement. I think that is a gross error but it is widespread.

The fourth proposition is that research is frequently confused with the accumulation of facts and figures. The essential reason for research is to get new understanding of old facts. There is no substitute for brains in research; calculating machines and clerks can never produce results. I wrote an essay not too long ago, published in the "Monthly Labor Review (August 1954), in which I argued that it is much easier to appropriate money and hire clerks to accumulate data than it is to find competent scientists to plan and carry out worthwhile research.

The next point is that modern psychology which is the discipline most closely related to the field of behavior, promises much but unfortunately, so far, has been unable to deliver nearly as much as it has promised. This is not a criticism of psychology for new knowledge comes slowly, but it is a criticism of psychologists who have oversold their discipline.

There is one further point that I want to stress about research before proceeding with a discussion of selected problem areas, that

is, the uniqueness of the armed services as a laboratory. They are unique in three ways: First, they represent an organizational structure that possesses a tremendous number of records about human beings. There is no other place in our society--there may be in a police state, but not in our type of society--in which there is so much cataloged information about individuals. The recognition of this fact led General Eisenhower to take an active interest in establishing the research which we have under way at Columbia. His idea was to utilize the rich personnel records of World War II before they were destroyed.

The second reason that the armed services are unique relates to their opportunities to set up experimental situations involving human beings without exploiting them. You are able to change your methods of selecting people, of training people, of discharging people. One way to learn is to experiment. Here are very large organizations that have opportunities to learn much that is new by designing and evaluating new ways of doing things. There is no group in a democratic society that is able to experiment as freely as the armed services.

Thirdly, and perhaps the most important, is the fact that the armed services are able to tie in research and experimentation with policy. These organizations need not let the research go off into limbo as sometimes happens at universities. They are always able to make tests to determine whether the research is contributing significantly to the solution of their key problems. I am not arguing that all research should be that closely associated with policy; I am suggesting that much of the unfocused activity that is permitted under the name of research goes on because it cannot be tested in life. This opportunity for reality-testing gives the military an important research advantage.

Let us now look at the four selected problem areas against this general background. I will consider the question of selection first. The armed services are interested in a selection device which would give them the best manpower available within the limits of their quantitative requirements. When they require only a few hundred thousand men, they can use a different cutoff point than when they require a million or the many millions they need in times of general mobilization.

Let me suggest three or four questions around which experimental inquiries should focus. In order to refine the selection process, it

is essential to know much more than the armed services now know about the specific assignments that men are required to fill; they must know more about the specific qualifications which their men must have.

I am reminded of the way in which R. H. Macy & Co. behaved in 1932. Proceeding on the assumption that the more education, the better the person, Macy hired Ph.D.'s and put them behind counters to sell stockings. But by looking for educational achievement, the company did not get the best people for sales jobs. It got, if not the worst, surely some of the worst people for the particular job at hand. There is no known relation between higher education and selling ability--especially ability to sell stockings at Macy's.

The constant problem in the armed services is specifying the qualities they require. This is the point I argued with a former Chief of Staff, who like Macy's, believed that the more education a man had, the better soldier he would be. I took the position that the better educated men would shy away from the Infantry, which is the backbone of the Army.

The second point to remember in selecting individuals in terms of specific background factors is that their suitability will depend in large measure on how you handle them after you accept them. This is a lesson that industry is learning and the armed services ought to learn--and in part is learning. It is not enough to read a man's qualifications at the moment of induction or enlistment. They tell you something about him. But what you do with him, especially in the early period of his service, will largely determine his future contribution.

In World War II the Army had to handle large numbers of illiterates. The Navy escaped from this problem, since it was able to rely on voluntary enlistments until the end of 1942, when it was forced to come under the Selective Service System, and even then it accepted only a few illiterates. The Army found that by providing special instruction in special training units for illiterates, it could quickly enable most of them to perform at an acceptable level. The men in these units quickly learned to read and write at a minimum level and to handle their pay. It was quite different when no special training was provided--most men failed to make the grade.

This experience with illiterates points up the fact that a man's qualifications at the time of his induction will not foretell his military career. Much depends on what happens to him after he puts on his uniform. In the old days the toughest sergeants were put in charge of

the recruits; they were big men, tough men, and their job was to separate the inductee from his civilian habits as quickly as possible.

Another point of significance relates to the impact of social trends which help to determine the broad outlines of a military manpower policy including selection. The armed services are now operating under a Universal Military Training and Service Act. The key word is "universal." If the armed services violate the concept of "universality," they will suffer consequences. At some later point in time, they may be forced to pay a very big price. No single facet of manpower policy can be appraised by itself. It must be considered as part of a larger framework. The methods used to select men for service must be consistent with the basic philosophy of the Nation or sooner or later there will be serious conflict between the military and civilian sectors.

Without further elaboration, I should like to suggest it would be desirable for the armed services to set up an experimental situation which would enable them to study in a statistically meaningful fashion the consequences of using different selection criteria. It should be comparatively easy to establish the costs and returns of setting different cutoff points for induction or enlistment, maintaining the broad concept of universality. The typical line officer is not attuned to this type of approach. He thinks in terms of the extreme case. What I am suggesting is a study in probability which should yield reliable measures which could be used for the total population.

Let us go on to the next field--training. Current military policy is to train the available manpower as rapidly as possible for the assignments that are available. A major research question that is hidden behind this apparently simple policy is the value of any specific system of training for later performance. It would even be interesting to try to estimate the specific impact on your own future of this particular course of a 10-month duration. Although I have been teaching for the last 20 years, I am quick to admit that I have no clear ideas about the relation of my pedagogical efforts to the later career of my students. We are just beginning to open up these questions. The armed services are a wonderful laboratory in which to seek out the relationships between particular training efforts and later performance.

A second question of importance for the field of training derives from the variations in the capacities of men who report for duty. Every large organization tends to ignore these variations and proceed in

terms of an "average" trainee. A major gain in efficiency would result from the introduction of a flexible system which would enable individuals to move, not at a stipulated speed, but at their own speed. Significant gains can be secured under such a system. The armed services have begun to recognize the importance of the fact that a man who comes on active duty with a background in mathematics and physics can be trained as an electronics technician much more quickly than someone who does not know how to add and subtract.

Here is further room for experimentation. We know that learning depends on more than native intelligence. Motivation is not always positively correlated with intelligence. People learn, not because they are smart, but because they want to learn. The military can order people to do things but they are impotent when it comes to forcing people to learn. They must rely on the individual's motivation.

Another major question relates to the desirable amount of training. Is it better to train a man for one assignment or for many? In a period like the present the military is faced with rotational problems and with the rapid turnover of men. Industry has the same problem, although it is not nearly so severe. Your goal is to find the right balance between training and optimum utilization.

The more training a man has received, the easier it is to assign him. But the amount of training you can afford to provide at any time depends on whether the country is in a period of war, partial mobilization, or peace. Studies of the cost of training and the advantages of more flexible assignments emphasize that the military can make a greater investment in its manpower in times of peace.

Let us consider the question of promotion. The services must make their promotions primarily on the basis of seniority; such elasticity as this system permits must be based on written officer evaluation reports. One question that is obscure to me after 12 years around the Pentagon is why most senior officers feel so deeply committed to the seniority system. I agree that a promotion system must be acceptable to most of the people in an organization. They must at least recognize that it is a basically fair and unbiased system. I think it would be worthwhile to appraise much more carefully than has yet been done the attitudes of junior and senior officers toward the existing promotion system. Admittedly, this would be a difficult investigation, but by no means an impossible one, and the results could prove highly constructive.

On the basis of the results of the studies which we have been making about executive development in civilian life, it seems appropriate to recommend a similar approach as an important area of research within the military. I refer to the systematic study of the careers of successful officers--the pattern of opportunities presented by their varying assignments. There can be little question that there is a close relationship between the development of potential and the presence of opportunity. Since officer assignments are generally subject to more control than are executive assignments in industry, it should be possible to delineate several different career patterns. These could then be assessed in terms of their relative contributions to the development of an officer's full potential. For instance, one question that could be asked is the relative advantage of providing junior officers with assignments carrying primary responsibility for a specific mission over giving them the same amount of time in special schools.

The point I want to stress most in connection with promotion is the desirability of shifting emphasis from evaluating the individual officer in terms of his traits and qualities in favor of a more detailed evaluation of the performance of the unit for which he has responsibility. Since the military has a large number of similar units performing more or less similar missions, here is a real opportunity to develop objective criteria. The largely arid work in the study of leadership that has been done up to now might well yield results following such a shift in emphasis.

With respect to leadership, I think that much of advantage could derive from affording individuals greater opportunities to volunteer for interesting, if difficult, assignments. There is very little self-determination with regard to a career left in industry, at least in the large corporation, and there is also very little self-determination in the military services. A man's superior or the personnel office determines whether he shall be sent to Africa or attend an advanced school; whether he should be given a staff or an operating job. Since most people prefer to coast along rather than to put out special effort, this absence of self-determination makes it very difficult to distinguish between those who have energy and drive and those who do not. Yet to distinguish between the work-oriented minority who are concerned with advancing their careers and the vast majority who are willing to move along when their turn comes is perhaps the major challenge with respect to executive or officer personnel that every large organization faces. And one lever on this situation would be a system of

volunteering. There is much more scope for such a system than most personnel managers in industry and the military recognize.

However, a shift in favor of a higher degree of self-determination carries with it not only a promise but a risk. An organization that permits men to volunteer for the more difficult assignments must counter with the probability that some of these men will fail. Of course, some men will fail even if they are selected by the most expert personnel departments. An organization that will not run risks cannot develop leaders.

This brings us to the fourth aspect of personnel policy with which I plan to deal--premature separations or discharges. The basic doctrine with regard to this problem appears to be that if a serviceman is not effective, it is wasteful to attempt to struggle with him; it is best to discharge him. This is an attractive theory for an organization that has such a major responsibility as the defense of the Nation or the winning of a war. Yet its attractiveness is less obvious in view of the actual experience of World War II. At that time military experts, on the advice of the psychiatric profession, agreed to an emotional screening procedure of approximately three minutes in duration. This mechanism resulted in the rejection for military service of approximately one million young men on the ground that they were "too nervous to serve." A critical review of this experience tells us more about military manpower planning and psychiatric theory than it does about the emotional health of young American men!

Separation problems can never be considered independently of selection procedures. Because of a series of errors in evacuation policies of soldiers who broke under fire in the North African Theater in 1943, the General Staff of the Army decreed that any man with a psychoneurosis should be separated from the service forthwith. During the early summer of 1943, when the Army was trying to build up its total strength, it was letting men out at a rate only slightly less than it was taking men in. At this time General Hershey pointed out that unless separation policy were tightened, he could never find the manpower to expand the Army to its required strength.

Another important lesson learned during World War II was that every man, no matter how sound at the time of selection, may break if he is under sufficient pressure. If men are kept in isolated areas for years on end; if they are forced to fight until they are injured; if most of the awards and honors are reserved for those behind the front--in

short, if men are asked to endure too much or are treated unjustly, a large number of them will inevitably break. Thus we see that the key to obviating premature separations is to increase the effectiveness of military manpower policies.

It would be an error, however, to assume that the military services have total responsibility for policies affecting the morale of troops. The armed services operate within the context of a larger society, and the services are very much affected by conditions prevailing in civil life. Most men are willing to make sacrifices for their country, but they do not want the country to make martyrs of them. It is not easy to explain to a soldier or sailor why he must stay month after month, year after year, on a humid, disease-ridden island in the Pacific without proper food or opportunities for recreation, while a classmate of his who has poor eyesight or a perforated eardrum remains at home earning $150 a week as a machine operator. There is a clear and obvious relationship between military morale and a system of equitable distribution of risk and rewards among the total population. The really amazing point is how tolerant were the men in uniform, considering the gross inequities that permeated our total effort during World War II.

This brings us to the concluding section of this presentation, which will focus on human resources research in the armed services. By way of setting the stage, let me present you with three pieces of evidence, all out of my recent experience. Within the past fortnight I was visited at Columbia University by a senior Air Force officer who was in charge of important research in the area of military ineffectiveness. In reviewing his problems with me, he mentioned that during the past several years he had built up not one but four research teams. Each time that he succeeded in getting a balanced group of specialists together, one or another person was withdrawn, usually because of a military reassignment; sometimes because of a temporary shortage of funds to pay for civilian personnel. The likelihood now is that he himself will be moved to a new assignment, with the result that several million dollars of research effort may be dissipated.

Some time ago a professor at one of our large universities submitted a proposal to the Department of Defense for funds to study women executives. In commenting on this proposal, one of the senior women officers wrote as follows: This project has no specific value for the military because it plans to explore, among other things, the

personal factors that determine the promotion of women in civilian life. In the military such personal factors do not exist! Research can help only those who want to learn.

Because of the work which we are carrying on at Columbia University, we are on the mailing lists of the armed services and receive a plethora of studies that have been carried on in the field of human resources. Some of these are clearly valuable and significant, but a disturbingly large number appear to us to have little relevance either for the armed services or for social science. Let me provide you with a few titles: "A Statistical Analysis of the Parameters of Motor Learning," "Evaluation of a Special Live-Firing Trigger-Squeeze Exercise," "Nervous Control of Shivering," "Performance of an Effortful Task with Variation in Duration of Prior Practice and Anticipated Duration of Present Practice," "Prerequisites for Pair-Scores to be Used for Assembling Small Work Groups," "The Soviet Doctor," "Some Latent Functions of an Executive Control Device," "Measuring Followers' Perceptions of Leaders' Human Relations-Mindedness in a Military Organization," "Some Patterns of Bomb Squadron Culture," "Avoiding Spuriousness in Biserial Correlations Used as Coefficients of Internal Consistency."

It is not my intention to use these admittedly biased illustrations as a basis for my conclusions about the present status and future prospects of human resources research in the Armed Forces. However, they do help to point up some of the inherent difficulties of developing and carrying forward a sound research program. The following are the major considerations that I would like to leave with you concerning the progress that has been made and the obstacles that must still be overcome.

The armed services are to be commended for having recognized that there is a place in their operations for human resources research and that such research can contribute to the improvement of tactics and strategy. This may look like an unimportant gain, but in my opinion it is the single most important evidence of progress during the past 10 years.

I am further impressed that the armed services have come to recognize that despite their preference to do their own work and control the resources required for the performance of their missions, the field of human resources research demands that they engage in cooperative undertakings with civilian scientists. The armed services

have sought and gained the cooperation of psychologists. You will recall that in my introductory remarks I put forth the proposition that psychologists have oversold their discipline. There can be no question that psychology has an important contribution to make to the deeper understanding of the behavior of individuals and groups in the military environment. In my opinion, however, the research work that is going on under military auspices is out of balance largely because of the predominance of psychologists whose theories and techniques are not broad enough to encompass the necessary managerial and logistical considerations in addition to the purely behavioral factors.

The entire program of human resources research is still far from entrenched within the military program for the simple reason that most of the senior officers were not trained to understand the potentialities of research during their early military careers, with the result that they are usually lukewarm and frequently hostile to such work. In addition, since so much of the work is of dubious quality, it is not easy to gain support from the line.

As in every organization, there is always a shortage in the military of good people for important assignments. The shortage is intensified for research, since one can become competent in research only if he is permitted to work for a long time in the same area. However, this opportunity is frequently denied the military man. Unfortunately, most senior people responsible for the assigning and reassigning of personnel do not understand that every research program is as strong and no stronger than the people involved in it.

This leads me to five conclusions:

1. The success of research in human resources in the military will depend upon the ability of the armed services to attract and hold the interest of a limited number of imaginative research investigators for a prolonged period of time. Unless such a long time relationship can be worked out, no program can succeed.

2. There is a definite need to define and delineate the major areas in which a continuing research program should operate. Earlier I called your attention to four major problem areas. Obviously, the list could have been extended but, equally obviously, it should not encompass all the minutiae suggested by the titles which I put before you. What is needed is a strategy for research which insures that the major problems will be attacked and that the bypaths will not be followed.

3. Those responsible for the planning and operation of the research program must be willing to take risks and must convince the Congress to take risks in supporting the program. It is necessary to escape from the annual contract. It is even more important that the planning preclude projects which are not likely to yield results. Good research results, like high profits, cannot be achieved without risk-taking.

4. Special advantage should be taken of the unique opportunities presented for human resources research within the military environment, where records of individuals and their performance are, or surely can be, more complete than in any other sector of life; where assignments can be determined and performance criteria established to yield the advantages of a true laboratory situation.

5. Finally, there is need to redefine the goals of a human resources research program in the military. At the present time the objectives are both too ambitious and too modest. It will not be possible through research to increase the effective utilization of military manpower a hundredfold or two hundredfold. But research, if it is well planned and well implemented, can make a significant and continuing contribution to the more effective utilization of military manpower.

QUESTION: You said that the strongest man could be broken. Is that right?

DR. GINZBERG: Yes.

QUESTION: I would like to hear your viewpoints of the recent POW trials as regards the sentences handed out.

DR. GINZBERG: I do not consider myself an authority in this area, but I will venture a reply. I have been impressed with the fact that the basic policies of the armed services with respect to the treatment of its manpower have been worked out over 150 or 200 years. This means that the armed services should use great caution and circumspection when they start to develop new policies. In particular, they should seek to avoid responding to external pressures, public excitement, and the emotions that run riot when we are confronted with new and terrifying conditions.

It seems to me that we should spend more time investigating how the Communists succeeded in influencing these people than in punishing

them. I would not like to sit in judgment on an act the nature of which I do not comprehend.

I have been very distressed by the way in which the armed services buckled under to the demagoguery of McCarthy and are handing out administrative discharges which are punitive for actions unconnected with a man's military service. It seems to me that this is a violation of every code of common decency, and certainly of our national traditions.

QUESTION: From your remarks I gathered that you at least implied that we don't want a nation of doctors of philosophy 100 percent nor a nation of morons. In the event of mobilization, what do you consider reasonable national goals as to the level of education we should have? That is, is it 1 percent with doctors' degrees, 30 percent with degrees of bachelors, 40 percent with high school diplomas, and the remainder from public schools? Has your research come up with national goals that are reasonable to attain?

DR. GINZBERG: We have been proceeding on the basic assumption that in our type of democracy each individual ought to have maximum opportunity to acquire as much education and training as he will be able to profit from. We are not worried about the United States becoming an overeducated country. Nor are we worried about the situation which confronted Germany prior to Hitler when that country had a very large number of unemployed intellectuals on its hands.

We have faith in the potentialities of the American economy to continue to expand and to absorb a larger number of professional and well-trained people. What we are worried about is not overeducation but undereducation. If our economic progress and our national security depend upon the full use of our brainpower, we are doing a very poor job in this country. Less than half of the people with an I.Q. of 120 or above graduate from college. Since the United States won the race to produce the atomic bomb first because Hitler chased such great scientists as Einstein, Szilard, Meitner, and Bohr, out of Europe, we have no reason to feel conceited about our trained manpower.

One of the serious mistakes that we make in this country is to equate education with the number of years a man has been exposed to school and the number of degrees he has accumulated. I am uneasy about the constant extension in the years of formal schooling. I see

no reason to believe that after a certain point the net increment is very great. In fact, it may even turn out to be negative. In this connection it may not be out of place for me to raise a question about the exceedingly elaborate structure of special schooling which the armed services have developed.

QUESTION: With reference to your remarks about deemphasizing the importance of psychologists as major directors of this research--which I am sure most people in the military agree with--I wonder what type of professional man you had in mind for the overall direction, a philosopher, a sociologist? Certainly not an electrical engineer. Just what type of professional man did you have in mind?

DR. GINZBERG: I would not like to answer in terms of a particular discipline because I could even conceive of a smart engineer who could fill the job well. On my own staff at Columbia I have an economic historian, a psychiatrist, two psychologists, a statistician. The director of a research program should be an individual who is not dogmatically oriented toward any particular discipline, but who has a high degree of tolerance and understanding and respect for what individuals with differing backgrounds might contribute. I could conceive that a philosopher, a mathematician, or even a psychologist could set up the program--but I would like to select him.

QUESTION: An industrial relations lecturer recently indicated that a survey he had made of industry showed about three-fourths of the companies reported as having research programs in industrial relations at the rate of $1.19 per employee. If at all representative of industry, this would indicate that the amount of 30 to 40 million dollars is spent on this type of research in industry. What is industry getting out of that?

DR. GINZBERG: Frankly, I question the figure which you have presented, for I think that it covers not only research expenditures but other types of expenditures. On the whole I have not been impressed with the results that have been published of human resources research undertaken by business, and I question whether very important research has been completed which has not been published.

QUESTION: The fact has been presented that 24 out of 25 people capable of acquiring a Ph.D. do not do so. What do you think about this manpower waste?

DR. GINZBERG: First, I would like to suggest that it would not be an advantageous situation if all who were capable of it acquired a Ph.D. degree. After all, the degree has value only in relationship to specific work careers. However, I would like to add a few words about our national attitudes toward education. As I see it, we are schizophrenics. On the one hand we are deeply committed to the doctrine of free education for all. On the other hand we really are suspicious of the educated man. We don't like "eggheads"; we don't like "longhairs." I recall my first days in the War Department when the general I worked for wrote on the margins of my first report such terms as "crazy professor."

We fail to realize that the educational process cannot be understood without considering those who teach and those who are taught. Some of our high schools look to me like modified detention camps. We do not know what to do with our youth and we therefore force them to stay in school. Merely sitting at a desk for five hours a day is not education.

QUESTION: Should the military take a percentage or slice of the average manpower of the country in order to gain experience in working with all sorts of people, so as to be more competent in the event of full mobilization?

DR. GINZBERG: I stressed repeatedly with both Mrs. Rosenberg and her successor, Dr. Hannah, that in my opinion a period of partial mobilization should be used primarily for gaining experience of value in the event of full mobilization. I was trying to convince the Department of Defense to be less selective in its intake of people in order that it might gain experience with the uneducated and the less stable. However, the armed services have done what every organization tends to do--they have sought to decrease rather than increase the problems with which they currently have to cope, and are hoping that the future will take care of itself.

QUESTION: With the problem of rotation of assignments that our military forces face and with your expression of concern of what the composition of people going into human relations research in the military should be, would you comment on whether you feel the military establishment is capable within itself of generating and conducting adequate research or how do you feel it should be conducted.

DR. GINZBERG: As I see it, this is the key point. I have had continuous exposure in the Pentagon during the last 12 years. Despite

this experience I do not know anyone within the military who by training, inclination, and ability is capable of heading up the human resources research program. If the Chief of Staff were to ask me for advice, I would recommend that he seek to find a social scientist of sufficient stature, with sufficient knowledge of the military, and with a sufficient interest in the military to take control of the program and to agree to stay with it over a period of years. Obviously, the Chief of Staff would have to make commitments to such an individual in order to interest him in the assignment. There are obvious advantages in having a civilian as technical director of the program. Each of the services would need only one director. If they find the right one, he will do the rest of the job for them.

QUESTION: We have a situation in the Army today where, by reason of this promotion by seniority that you mentioned, we have junior officers who have performed well in their capacity as troop leaders but who are getting way past their depth when they get to the field grade. I don't know whether this relates to the OCS, induction, or what, but would you care to comment on that?

DR. GINZBERG: I believe that the heart of this difficulty can be traced back to the errors of integration made at the end of World War II. At that time the selection boards, heavily weighted with line officers, gave great emphasis to a man's performance in combat and did not consider the missions that would confront the armed services in peacetime or in partial mobilization. The only constructive approach that I see would be to divide the group, into three: To say to one, we will keep you on but we will be unable to promote you rapidly. However, you can stay if you continue to perform effectively. Those who have high potential but poor educational background would be worth special investment. To the best of my knowledge, this is just what the Air Force has done. A third group I would try to separate, making sure to ease their readjustment to civilian life by some special financial allowance.

COLONEL MURPHY: Dr. Ginzberg, again you have made a major contribution to our Manpower Unit. On behalf of the Commandant and the students, I extend my congratulations for a very fine talk and question period. Thank you very much.

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