

RESEARCH AND DEVELOPMENT IN HUMAN RESOURCES

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INDUSTRIAL COLLEGE OF THE ARMED FORCES

Washington, D. C.

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COLONEL MURPHY: General Niblo and gentlemen: This is a manpower lecture, an added attraction, as it were, to consider another and different viewpoint on the subject of "Research and Development in Human Resources."

The previous lecture covering this topic during the Manpower Unit touched upon some areas of a controversial nature. Since it is the policy of the Industrial College to present both sides when controversy is involved, we have arranged this special lecture this morning by a prominent scientist who has devoted a considerable portion of his career to research and development in the field of human resources. As Director of the Commission on Human Resources and Advanced Training, sponsored by the Associated Research Councils, as Administrative Secretary of the American Association for the Advancement of Science, and as a consultant to the Assistant Secretary of Defense (Research and Development), I believe Dr. Dael Wolfle has a very instructive message for us this morning.

I take pleasure in presenting Dr. Dael Wolfle as a member of our guest faculty lecture team. Dr. Wolfle.

DR. WOLFLE: General Niblo and members of the college: The current interest in using research methods to study some of the manpower problems of the Nation is of relatively recent origin. It follows, however, a long history of practical work: we have had census activities; we have had other counts of the number of men and women in and qualified for a variety of types of work; we have had much experience in selecting people for special duty; and, of course, training has been one of the primary responsibilities of the military services ever since there has been an Army.

But research studies have been of relatively recent origin, and have come about partly from the fact that manpower shortages are of only fairly recent date in our history. In 1917 and through World War I we did not begin to run out of manpower. During World War II we had a large industrial buildup and a large military buildup which followed on the heels of as deep and prolonged a depression as we have had in all

our history, and so we did not run out of available men, to anything like the extent of more recent years. Since 1950 we have felt pinched, and, feeling that pinch, there has been a growing interest in the kinds of studies that are classified under the heading of human resources or manpower studies.

There are, three additional reasons for the recent interest in manpower studies. One is the great birthrate changes which have taken place since 1920. With a falling birthrate from 1920 to 1940, and then with a suddenly increased birthrate during and since the war, we now have a somewhat unbalanced population structure. We have a very large number of young children. Because of the increases in medical knowledge, we have an increased number of oldsters. To support the larger number of youngsters and larger number of older people, we have a relatively smaller number of young and middle-aged adults in the most productive years.

Second, we have considerably greater uncertainty than has usually existed in the past as to the number, the nature, and the duration of future requirements. Military planning in some respects is more difficult than it used to be because of new weapons, because of the loss of our own water barriers protecting us from attack, and because of all the uncertainty over the possible nature and duration of a future conflict.

Third, there is greatly increased emphasis on science, technology, and special weapons, with all the implications that emphasis brings for increased reliance on specially trained people--men and women who are specialists in this or that, sometimes esoteric, branch of knowledge.

Growing out of these reasons, there has developed, during and since World War II, a great expansion of effort devoted to manpower studies. Let me list briefly four general areas, and then describe each in a little more detail.

There is a series of studies which consist of statistical descriptions of population supply or of supply and demand relationships. Second, there is all the work on the selection of men for specialized types of duty. Third, there are studies of training programs. And fourth, there are studies of the design of various types of equipment to make them most accurately and easily used by men with all of their limitation of physical and psychological abilities.

The first of these four areas, the statistical description of populations, includes mobilization studies. It includes a study which was initiated several years ago by the Air Force, known as project SCOOP, which has since been phased out, but which was an effort to relate some military service needs and to the manpower needs of the Nation as a whole.

Under this heading also are school enrollment studies, for educators are interested in the increasing number of youngsters and want to be able to predict how many will be in high school, in eighth grade, or in college in the years ahead.

There are also recent studies of the census type which provide a more detailed analysis of types of people in the total population than characterized earlier census enumerations.

Within this general area, the prediction of the total manpower available for some years ahead is comparatively easy, for we can predict reasonably well the total population of the country, or the population of any sex or age, as far ahead as 1960, 1970, or 1975. But when attempts are made to project the number of people who will have any special special skill or knowledge which may be important for military or industrial use, the figures get considerably more uncertain and difficult to work with.

I had an interesting illustration of the uncertainty of some of the available statistics when I was asked last summer to attend an informal committee meeting at the National Science Foundation (NSF). At that meeting, representatives of the Bureau of Labor Statistics, the Office of Education, the Census Bureau, NSF, and one or two other agencies got together to decide how many engineers there were in the United States in the middle of 1954--not how many there ought to be, or how many could be expected in 9 or 10 years, but the simple fact of how many there were in the middle of 1954. When it takes a committee decision to find out whether there are 500,000, 600,000, 400,000, or some other number of engineers in the United States now, you can readily guess that estimates of how many there will be 10 years from now are likely to be pretty far off.

One interesting and potentially very useful development in this area is a study being conducted by the National Bureau of Economic Research in New York, a study devoted to testing the accuracy of a number of different methods of estimating future manpower demands.

For many purposes it is desirable to be able to predict the future demands for engineers, scientists, military personnel, school teachers or members of some other specialized field 5, 10, or 15 years later. This study of the National Bureau of Economic Research is an attempt to determine what kinds of statistics and what information about trends will lead to the most accurate forecast. There is nothing from that study which is helpful yet, but the study gives hope for better predictions in the future.

Another kind of manpower study (which is not actually under way, but which has been much talked about, particularly in the Air Force) is a national census of skills which might be important for military use. How many people are there in the United States who have one or another special skill which might readily be converted to military application. The Air Force has conducted some sampling studies and some studies on how feasible it would be to conduct such a census, but has not yet seen fit to do the big job, primarily, perhaps because it is not really the responsibility of any one service. Although such a study would be of interest to a number of Government agencies, no one yet has been found interested in picking up the check for such a large undertaking.

Turning now to the second general area that I mentioned--studies of personnel selection and classification--there is continuous selection in the military service from the time a man enters throughout his whole career, whether that career lasts for two years or for a lifetime. Men are selected for special schools or special types of duty. Officers are selected to attend this college. Scientific personnel classification is, historically, the area of manpower studies which has had the longest military history. It started in our own Army in World War I and has spread to become standard practice in all military services, not only in the United States but in many other countries as well.

Most of the work in the area of selection research has been on the measurement of ability to do some special kind of work. Thus there have been medical examinations, physical examinations, intelligence tests, tests of aptitude for special types of training, such as for electronic maintenance, or for piloting, or for officer training, or for learning radio code, or for some other special form of duty. Because of long experience, this is the field of manpower research in which we have the greatest accumulation of practical know-how.

There is beginning to be a substantial amount of work on a harder to measure aspect of human behavior, such as attitudes, motivation,

general adaptability to military service, motivation for military duty, and motivation for combat service. This last is an area in which the Army has been particularly interested.

There has recently been a growing interest in the pressing problem of reenlistment. With reenlistment rates unsatisfactorily low, it is natural to ask what characteristics are likely to mean that a man will, and what characteristics are likely to mean that he will not, want to reenlist at the expiration of one period of service.

The Air Force has been particularly interested in this problem because of the large number of people scheduled to go out of service in 1955. The Navy has also been interested, and gave me a few days ago, some figures which indicate how wide the difference in reenlistment rates can sometimes be: In one class of ship at the same time in recent months, reenlistment rates ranged from a low of 3 percent to a high of 65 percent.

When you have a range that large, naturally the question comes up of seeing what can be done about it. I don't know the answer, but motivation is obviously involved, and that is an area into which selection research studies are now spreading.

The third general area of manpower studies is that of training. Military training became an object of research later than did military classification. Like classification studies, however, research on training has been primarily aimed at special types of duty--the training of electronic maintenance men, the training of operators of new weapons, the training of sonar operators, the training of radio code operators, survival training under adverse conditions, and a variety of other special types of training.

Some of the results of such studies have been outstanding. One of the Army research groups has recently been interested in basic riflemen training. After trying out some modifications of training methods under experimental conditions, they applied the new methods to the training of marksmen in an entire division. In the first training division in which those new methods were used, they report that 90 percent of the men qualified as marksmen. How much of that spectacular result was due to improved training methods and how much resulted from added interest and effort can only be told after the new methods have been tried out longer.

I would like to ask one general question about both training and classification, because that question is basic to the practical evaluation

of much of the experimental work. The question is this: How much expense of selection or how much expense of training is justified by how great an increase in the effectiveness of the man coming through the selection or training process?

It is probably a safe generalization that in almost any kind of military duty improvement can be brought about by the systematic study of what the men must do, of what characteristics enable them to do that job most effectively, of how one can select men with those characteristics, and of how one can develop those characteristics through training. But it may frequently be that the cost is more than the increase in effectiveness is worth. This question must be considered in evaluating manpower research because the enthusiast interested in the research may truthfully be able to point to improvements, while the cost accountant may also truthfully be able to say, "Yes, but the cost of securing that improvement is greater than the improvement is worth." This is not always the situation, however, for as all of you know, research frequently more than justifies itself in increased effectiveness and sometimes in decreased cost.

The fourth of the four manpower research areas is the most recent of all in point of the amount of history lying behind it. It consists of studies directed toward improving the design of equipment which men use. The controls of a weapon or of an instrument, the conditions under which operation can be carried out most safely, the types of controls, the types of data-presenting devices which minimize errors and which lead to most accurate utilization are all matter which have come under research attack first in the Navy and the Air Force, and more recently in the Army.

A single illustration will point out the general nature of the problem. When the flexible gunsight and computing director of the B-29 was introduced, the task of tracking a target was one which the engineers who had developed the devices felt could be adequately handled by the controls they developed. But the task was extremely difficult for the ordinary airman gunner. Some of the things he had to do with his hands interfered with other parts of the task. Frequently he became too tangled up to work accurately. Studies of different kinds of hand grips or controls on the gunsight demonstrated that the accuracy of shooting could be significantly increased by a fairly simple retrofit change in the already mounted gunsight.

How many military items there are which might be better designed so that they could be used more accurately, nobody knows. The Army

is planning to investigate several hundred items to determine which are in greatest need of detailed study.

There is a close interrelation among these last three fields--selection, training, and equipment design--because improvement on one makes easier the other two. If you can design a piece of equipment so that it is easier to use accurately, you have simplified your selection and training problems. If you can bring about improvement of the selection of the men to be used in some particular type of duty, you have simplified your training problems and may have made unnecessary the reengineering of the equipment they use. Similarly, if you can bring about improvement in training, you can relax the methods of selection and also the equipment design. The fact that these three areas are so closely interrelated in their effect, the fact that improvement of one simplifies the work necessary on the other two, means that it is desirable to plan the three kinds of studies together, applying the results of one into the planning of studies in the other two.

Turning now to a slightly different topic, I would like to consider some of the problems of carrying out manpower research under military conditions. Let me mention three or four of the hurdles that both the military organizations and their research branches and consultants encounter in trying to carry out such studies.

The first is the fact that any research in this area is superimposed on an organization which has long experience and which has developed standardized, traditional, and accepted methods of carrying out its work. Training has been a primary function of all military service, and a great deal of practical experience in training has accumulated through the years. When some energetic, research-minded officer or civilian consultant suggests that perhaps it would be possible to improve training, he has to overcome the inertia, the established acceptance, and the fact that, in the main, the standard methods have proven reasonably satisfactory, or that their unsatisfactoriness has not been generally recognized.

Overcoming this inertia points up the second of the difficulties I want to mention, and that is a basic difference in attitude which exists between the research man and the military expert. The research man emphasizes the large range of individual differences. He agrees that in a political and moral sense, all men are created equal; but he knows that in terms of their height, weight, ability, skill, knowledge, and interests, they range all over the map, and that there are wide differences in practically every aspect of ability that one can measure.

Military thinking has also recognized differences, but at the same time has placed considerable emphasis on interchangeability. Much of the training, much official doctrine in the past has accepted the general policy of training large numbers of men who are considered to be equivalents of each other and interchangeable in their assignments.

The third hurdle is the lack of background on the part of men engaged in human resources research to apply their methods and ideas practically. It has been only in recent years, as I pointed out earlier, that this has been an active field of military research. Consequently, we have brought into the middle of military problems men with little background either in understanding military problems or in knowing how to apply research findings to those problems. That is a handicap which will be overcome with time and is already being overcome.

I mentioned earlier that selection research is the area of longest tradition. It has now reached the point where, the personnel experts are fairly successful in developing a new test which, without tryout, works moderately effectively in selecting men who can be trained most readily for work on one or another of the new weapons which are coming into use, or in selecting men for assignment to some special kind of duty.

The fourth and last of these hurdles is the difficulty of securing adequate measures against which to evaluate the findings of research studies. When a research man is asked to try to improve a selection procedure, or to improve training, one of the first questions he is likely to ask is: "By what standard are we going to measure the result? How good are the available measures of proficiency or of effectiveness?" That thorny problem comes up again and again in trying to conduct research in this area, because if you cannot measure satisfactorily the practical working skill with which men are able to do a job, you are at a loss to know whether or not you have improved the training or made more efficient the selection.

While I do not want to overemphasize these hurdles, I point them out because they have been characteristic of the past years, and to some extent they still are, for the whole history of really active research on human resources is encompassed in the last dozen years or so. Even so, the changes which have taken place in those few years are almost revolutionary. The amount of understanding by one side of the problems which face the other is very much greater than it was during the early stages of World War II. The research man has learned to think in military terms, and the military commander has learned to talk some of the

research man's language and to understand his problems. They are getting together at a rate which is highly encouraging.

The problems still exist and they must be understood by people who are going to work in this area, but they are problems which can be overcome. It is natural that such problems should arise. Each man tends to think in terms of his own background of experience. My own first encounter was early in World War II, when I was given responsibility for setting up some schools for the Signal Corps in which we trained electronic and electrical maintenance men. I found that I could talk radar problems to lieutenants and to captains, and sometimes to majors; but when I paid calls on the generals I had to talk about code training and field telephones. They were thoroughly familiar with those problems, and I could always get an interesting discussion. But radar involved a new set of concepts, which were new and strange to many of the generals in 1941 and 1942. The fact is that we naturally think in terms of our own backgrounds, of the things with which we are familiar, and it takes time to gain familiarity with a new set of ideas.

And certainly research in the manpower field is relatively new in terms of the history of military organization. But the rate at which people have been learning about these problems and their military aspects has been most encouraging and will be helpful to the services and to the men who are conducting research for the services.

Now, finally, a general question which I understand has been of some concern to this group, is: Does the work going on in these areas, both on a national scale and specifically in a military program, add up to a valuable and well coordinated set of studies? Is it heading anywhere and do we know where it is heading? Are the results going to be of sufficient value to justify the greatly increased effort of the past few years?

As to the first part of this question--does it add up to a coordinated and sensible program?--my answer would be an unequivocal yes. Moreover, if it does not, the fault lies to a considerable extent with the civilian experts on whom you have called for advice; for practically all of these programs have been under the guidance of panels, or committees, or boards of civilian consultants, from the Department of Defense (DOD) level through the individual service level, and frequently down to the level of an individual research laboratory.

There have been very many meetings called to discuss the research program on this or that human resources problem or to coordinate the

research in one direction with the research in another direction. Civilian consultants from industrial laboratories and from universities have been glad to give what contributions they could to advise the military services. Moreover, the services have had experts of their own, both in and out of uniform, and have sent a number of officers to civilian schools to gain additional knowledge in this area. If the program does not add up to a sensible, coordinated one, it is a black mark against a lot of people, both in and out of the service.

There are, of course, difficulties; there are headaches; things get started enthusiastically and then, with a change of policy, get canceled in midstream; there has been rapid expansion, with all the difficulties that frequently accompany rapid growth; there have been misunderstandings; there have been premature efforts to do something because some glib and enthusiastic person sold an idea which was not ready for practical application. One can go down a long line of criticisms and faults and difficulties, but we can also forgive a good many of these faults, partly because responsibility has been diffused--partly because the work is new, but chiefly because, on the whole, the program has made good sense.

I have already given its main characteristics. Basically, the four points which I tried to cover fit together to make a total pattern.

First, what is the population from which the services draw? What are the manpower resources of the United States, not only in total number, but in characteristics, in abilities, and knowledge, and skill?

Second, how can we select from this total population those people who are best able to do the necessary kinds of work? How can we classify and assign each man to the place which he can fill best?

Third, how can we give training most effectively and most cheaply to develop the kinds of skill and knowledge which do not come ready made from the civilian population.

Fourth, how can we redesign the jobs to be done and the kinds of equipment to be used so that we take best advantage of the abilities and are least handicapped by the shortcomings of the men we have to work with?

Within this whole program, probably the keynote, the single, most important idea to keep in mind, is the wide range of individual differences and the advantages of knowing and using those individual differences.

In conclusion, just one set of illustrations on how that is being done: The Navy is paying greater recognition than it has in the past to civilian experience in making initial ratings of enlisted men. The Army is planning a project which I believe is not officially named yet, but which unofficially is called project "Manowar." It is an effort to determine how the Army can most effectively use some of the less apt men; what kind of differential training is best adapted to different levels of ability; and even what kind of differences in equipment may be desirable for men of different levels of ability.

The Air Force, in a parallel fashion, is putting into use a personnel idea which is called "Qualitative Personnel Requirements." For each new weapon system being introduced, the Air Force is asking: What are going to be the personnel demands? What kind of men will be selected? How will they be trained? What will be necessary to operate and to maintain each of these new weapons and weapons systems?

Through all three of the services, the adaptation of the variety of jobs to be done and to the variety of men available and of the available men to the jobs which must be done, is in one sentence, the goal of research studies on human resources.

COLONEL MURPHY: Gentlemen, Dr. Wolfle is now ready for your questions.

QUESTION: Dr. Wolfle, in your research have you come up with any ideas on what would be the optimum rotation policy for various military personnel, to get the most efficiency?

DR. WOLFLE: No. There are a few obvious things that I can say that are no more profound than anybody here could say. There is lost motion in the fact that short terms for highly specialized people are too much used up in training, so that you don't begin to get an adequate pay-back from them. But beyond that I don't know of any real answer to your question.

QUESTION: Dr. Wolfle, I was very much impressed with the program you outlined. Do you think you can sell it to the DOD and have it actually stated as a policy and a program? From my own experience in it, I don't think they are doing what you say they are, although I think they should.

DR. WOLFLE: At one time you could. We had an effort at real coordination of the three services in the Research and Development Board and, prior to that, in the Joint Research and Development Board. Those agencies have now been done away with and the present structure under the Assistant Secretary (Research and Development) is essentially a much weaker organization from the standpoint of departmental control and coordination. That is, a policy decision which may or may not be right. If it is correct that the DOD should not attempt to coordinate the studies in the three services, there is still an opportunity for the services themselves to work out a pretty well coordinated program each for itself.

There is another opportunity, and one which I would not discount; that is the kind of informal coordination that goes on by the men who are most actively engaged in research. The men who are working in the Army know a good many of those who are working in the Navy. There is exchange of information. They get together for planning purposes, formally and informally. Frequently, informal discussions are as valuable as the formal ones.

Even if we do not have an overall program sold to the DOD, that does not mean that everything is necessarily going to be haphazard and uncoordinated. Whether or not we can get DOD top-policy decisions to support such a program as the one I have outlined is going to depend, as any such decision does, on whether or not we do--as you say--sell such a program to the top level.

Let me say one more sentence on that. Considering the relatively short history, and considering how different things are now from what they were 10 or 15 years ago, it seems to me that we have made enough progress to be encouraged, and that we ought not to give too much weight to the difficulties, the disappointments, and the lack of understanding which we do still find.

Is that too hedgy an answer?

COLONEL MURPHY: Are you satisfied, Fergie?

STUDENT: How about the NSF? Can't they get in here and throw a little weight around in making a recommendation that would stick?

DR. WOLFLE: The NSF has in its congressional charter responsibility for reviewing the research activities of other Government agencies. There is also an awfully cautiously worded addition to that sentence

"and for coordinating," but coordinating is to a considerable extent the coordination of its own program with those of other agencies. The other agencies, the military, and the National Institutes of Health, were casting very suspicious eyes on NSF when it was being debated by Congress and on the rights and privileges it was going to be given. Some of the earlier versions of the bills gave it a greater responsibility than it now has for directing, for coordinating, and for establishing national scientific policy.

As a second handicap, the primary interest of the NSF is in basic research rather than in the applied developmental aspects.

The third handicap is that the NSF has been feeling its own way fairly cautiously. The general policy has been that it had to establish a reputation, had to gain acceptance, before it could begin to throw its weight around. It is only three or four years old. Maybe it can exert considerably greater effort than it has in the past three or four years on the research activities of the other Government agencies.

It has deliberately moved slowly into the field, because, as a brash newcomer, as a relatively small agency, as one which did not have as many lines of communication and as high prestige as the military services, it has hesitated to try to say to the DOD, "You should do thus and so." They have been watching their step.

QUESTION: Sir, in the last three or four years, in the brackets of, say, 10 to 15 years' service, especially in the Air Force, which I know of--and I am cognizant of some in the other departments--we have had many boys of high caliber, especially officers, who have been resigning. Quite a few of those boys have masters degrees and doctors degrees and have taken quite a bit of graduate work in studies which are given and conducted in this area. It has been my opinion that the men who are now resigning are more or less high-caliber lads.

Is any study going on in that area on which you can give us comments? It is my impression that these high-caliber men are resigning to go out into industry. What cognizance are the departments taking of this?

DR. WOLFLE: There is certainly the general impression that the ablest ones are getting out in larger number than some kind of statistical chance. Now, there are lots who resist the blandishments of industry; but, if industry is looking for men, it is going to look for and prefer the better ones to the less good ones.

There has been the same kind of feeling about the enlisted men-- the reenlistees versus those who don't reenlist. Six months or so ago I had an Air Force report that the men who reenlisted came predominantly from the lower-quality levels. More recently, with a wider survey, the differences did not seem to be as great as six months ago, I was told. To be more specific, the airmen who reenlisted after one period were a reasonably good cross-section, in terms of scores on the Armed Forces qualification test of the whole range of enlistees.

There is some bias in the direction of the abler ones getting out, but not as great a bias as had been feared earlier. I don't know the comparable figures for the officers.

QUESTION: Doctor, are there any experimental studies along the lines of selecting and developing potential leaders?

DR. WOLFLE: Yes, there is quite a series of studies, and I don't know any of them which does not leave a good deal to be desired. The problem of selecting a leader has, I think, to a considerable extent been oversimplified in thinking; the simple attitude being taken that leadership is some kind of trait or attribute of a man and, if you can identify and isolate that trait, you can pick out leaders.

The problem is more complicated, because leadership in one situation may not be highly correlated with leadership in another situation; and leadership in any situation is a function of the relation between the characteristics of the leader and the characteristics and the goals of the group which he is trying to lead. You probably could not very well switch Secretary Wilson and Walter Reuther and have each of them be equally good leaders in their new jobs. They have all kinds of skills and characteristics, and both are obviously leaders in one field; but, in a totally different sort of situation, they would run into a variety of conflicts with the group of men they were trying to lead.

In the Army the most active work on this problem is under the Human Resources Research Office. I don't know what, if any, work is going on directly under Marine auspices on this problem, but the Army and the Navy and probably also the Air Force have been interested in the leadership problem. There is some headway--but a long way to go.

QUESTION: I would like to come back again to the Colonel's question. It seemed to me that his question was, as I understood it, a little more particularly about people who were changing careers. As I understood

your answer, you talked about the field of motivation. You were talking about people under first enlistment. As a layman, I would think the problem in that field would be a psychological problem of people changing careers after 15 or 20 years, and would be different from one in which a young man is looking around to select a career.

The Colonel must have read the things in the paper about the morale of the people who are to be leaders, which is not so good. Are there any specific programs that you know of dedicated to this problem? What about the morale of the people about to be leaders, which is evaporating?

DR. WOLFLE: I suppose I gave more attention to the first-term enlistees because, as I explained, I don't know anything about the ten-to-fifteen-year career men who are changing careers in midstream. I don't know of any studies on that problem. There are all the factors which are open and obvious to anyone and get talked a great deal about in the services, of the gradual whittling away of fringe benefits, of the pay differentials, and of the dissatisfaction, sometimes of the officer and sometimes of other members of his family with the conditions of the service and life. But, I do not know of any research other than some attitude surveys and studies of a Gallup poll nature which tried to find out what are the principal irritants. I think the Strategic Air Command, for example, has conducted some studies of that kind and, as a result, has tried to put some changes into effect.

QUESTION: Somewhat the opposite from the Colonel's question about the leadership, I recall that about five years ago we estimated that the disciplinary problems were costing the three services somewhere in the neighborhood of 75 million dollars a year. I doubt very much if that figure has declined. Probably it has increased. Are there any studies now being made to better enable us to screen out these problem children at the recruitment level?

DR. WOLFLE: The Bureau of Medicine and Surgery has been very much interested in the psychiatric marginal cases. The Navy and the Army have made some followup studies of what happened to the limited servicemen in World War II. They are one of the groups of people who contribute to disciplinary problems.

A sort of secondary aspect comes from some of the studies of the number of disciplinary cases which arise under different policies of selection, classification, and assignment. There is some little evidence that the more attention paid to the selection and assignment of men the

less dissatisfaction with duties arises and the less disciplinary difficulty one has.

Initial screening on a psychiatric basis, through good assignment on a personnel basis, seem to be ways of diminishing the amount of disciplinary difficulty; but both of those are efforts which are only partly successful. There is a long way to go in terms of psychiatric screening before it is thoroughly successful, and it is made difficult by the fact that, with a relatively short supply of manpower, it is questionable whether or not you want to screen out as many as possible. The more completely you screen out the possible troublemakers, or the possible slow learners, or the possible ones of other kinds, the better you can make the picture look in terms of selection, in terms of training, in terms of discipline; but you are doing so at the cost of not being able to get in as large a number of men as would be desirable.

Consequently some of the thinking has been not in terms of screening out everybody who may be a potential difficult case, but rather screening in as many as can be fairly effectively utilized some place or another. So it well may be that disciplinary problems and some other problems of that kind are a necessary cost of getting in as large a group as can be effectively utilized.

COLONEL WIRAK: Doctor, one of the practical problems that face the services is, Which key positions in the administrative and logistical fields should be occupied by officers and which by civilians? Periodically, there are drives to replace officers by civilians, and the pressures for those drives usually come from the Congress. As a matter of fact, the fiscal-year-1955 appropriations contain a provision for converting the military money saved by eliminating officers to civilian personnel money. It seems to me that in the past the guidance for which positions should be occupied by officers and which by civilians has been pretty feeble, and the thing is important enough for a little scientific thought. Do you know if anything is being done to establish criteria in that area?

DR. WOLFLE: No, I don't. The establishment of criteria to determine which would be the more economic or the more effective in the long run would be a slow and laborious job. If you were setting this up as a research job, you would have to compare the two methods over a period of time. That leads to all kinds of practical difficulties. There are problems on which it may simply be inappropriate to attempt what to the research man looks like a well-designed study.

You say that this is an important problem on which it would be well to devote some careful scientific thought. Perhaps so, but perhaps also, the difficulties of doing it are too great. There is probably never going to be a time when people at top-policy level are going to be relieved of the responsibility of making judgments on the basis of what the scientist looks like inadequate data. The commander has to make policy decisions, and he has to when he doesn't know all of the facts and all their detail, and doesn't know all of the results that are going to come. He has assumed the responsibility of making those decisions.

Now, if you want this kind of study, it is going to cost a lot of time and a lot of manipulation and interference with a going organization. I am not sure that it is worthwhile. That is not to say you can't make some cost-accounting studies and combine the best judgment you can get from the recommendations, and see if the top command and if Congress will buy them. But I would be a little skeptical about setting this one up as a well-designed piece of research which you would regard as an assignment investigation.

COLONEL WIRAK: Would you do it, Doctor, by including the research and development in that part along with the administrative?

DR. WOLFLE: I have had trouble in the past trying to find what is the difference between research and development, where one stops and the other begins. I don't know whether it is any easier in this case.

QUESTION: Doctor, this is merely an observation. I should like to suggest that if you attempt to conduct any studies in the area of officer morale, we could direct the researchers to no more available field than to study the speeches and actions of the Members of Congress. I think a companion field would be to study some of the speeches and actions of our own leaders who seem to outdo themselves in thoughts of abject humility when it comes to stating our case in a forthright fashion. I think there is really where the core of the morale situation lies.

COLONEL MURPHY: That's an observation. You don't have to reply to that, sir, unless you like.

QUESTION: I have talked to a number of young ROTC officers in their period of active duty after putting in ROTC training, and my impression is that a very high percentage of these officers have never once entertained the idea of making the Navy their own career. They have the attitude, "I have my education. I have returned my obligation

to the Government. I am not going to stay in the Navy." They have no desire to stay. This is a serious point. Some of these young men are at a point where they talk to petty officers. An enlisted man is not going to stay in the Navy if the officers don't. Is there any progress in the ROTC in trying to recruit people who desire to stay in the Navy as a component career? There's a lot of selection here.

DR. WOLFLE: On the question of whether or not there is progress in trying to select those for ROTC training who are interested in making the Navy their career, I don't know. On the more general problem, one which also affects ROTC graduates in other services and also affects enlisted men in the services, it seems to me--this is also an observation--that we do, through Congress and through out public policies, just about everything we can to make it desirable to have been in military service, and relatively little to make it desirable to be in the service. We provide educational benefits, we provide veterans' benefits, we provide a certain amount of prestige, and all sorts of things to the man who has been in; but, as long as he is in the service we whittle away at some of the long-standing benefits. And then we regret the fact that more men want to leave.

QUESTION: That problem is being recognized more and more, isn't it?

DR. WOLFLE: It is being recognized, as is also the general problem that was mentioned of congressional attitude. I think there are a good many people who are recognizing that the old popular spirit of demeaning the Government servant, whether as a civilian or as a member of the armed services, is a shortsighted bit of effort to get publicity and resounding headlines.

COLONEL MURPHY: Dr. Wolfle, you have been very kind in making your speech short enough to accommodate the students with their numerous questions. I am sure they enjoyed the question period as much as you are supposed to enjoy it. On behalf of the Commandant, the faculty, and the students, I thank you for coming here today.

(18 Feb 1955--250)S/gmh