

GOVERNMENT AND BUSINESS PARTNERSHIP--ITS  
UNIQUE POTENTIAL

20 August 1956

CONTENTS

	<u>Page</u>
INTRODUCTION--Major General R. P. Hollis, USA, Commandant, Industrial College of the Armed Forces.....	1
SPEAKER--Mr. Frank Pace, Jr., General Dynamics Corporation.....	1
GENERAL DISCUSSION.....	9

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1012

Mr. Frank Pace, General Dynamics Corporation, was born in Little Rock, Arkansas on 5 July 1912. He received the following degrees: A. B., Princeton, 1933; LL. D., Harvard, 1936; LL. D., University of Louisville, 1950; M. A., Princeton University, 1950. He was admitted to the bar in 1936, and practiced law in Arkansas from 1936-42. In 1936, he was appointed Assistant District Attorney, 12th Judicial District in Arkansas. From 1938-40, he served as General Attorney, Revenue Department, Arkansas. He became a member of the law firm Pace, Davis and Pace, 1941. In 1946, he was Special Assistant to the Attorney General of the United States, Taxation Division. He served as Executive Assistant to the Postmaster General of the United States, 1946-48. Mr. Pace was Assistant Director, Bureau of the Budget, 1942-49, and Director, 1949-50. He was appointed Secretary of the Army in 1950. In 1952, he became Executive Vice President and Director, General Dynamics Corporation. He held the following positions: Director, Carriers and General Corporation; Chairman, Arlington Memorial Amphitheatre Commission; Chief, U. S. Delegate, Conference Postal Experts, Lake Success, N. Y., 1946; Universal Postal Congress (vice president), Paris, 1947. He was a member of: President's Advisory Committee on Management Improvement, 1950; Deputy Advisor, NATO Defense Ministers Conference, Brussels, 1950, and Canada and Italy in 1951; visiting committee Law School, Harvard, 1951; Advisory Council for the Woodrow Wilson School, Public and International Affairs, Princeton, 1952. Mr. Pace is currently a member of: American, Arkansas and D. C. bar associations; Presbyterian Clubs: National Press, University, Burning Tree Golf, Chevy Chase (Washington); Merion Cricket (Phila.). During the war he was a Major, USAAF.

003

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GENERAL HOLLIS: Admiral Wooldridge, Members of the Joint Colleges: Our speaker this morning has chosen for his subject "Government and Business Partnership--Its Unique Potential." In no other country, perhaps, in history has this potential burgeoned to so great a degree as in the United States in the present decade.

The importance of technology in national defense has been increasing in geometric progression within recent years. This partnership has, therefore, become a keystone of national power, and the subject is accordingly of great significance to the curricula of both Colleges.

To present it to us, we have been fortunate to secure a recognized authority--the Honorable Frank Pace.

Mr. Pace's career in Government started at the state level in 1936, at the early age of 24. After an interval in the Armed Forces as an officer during the war, he resumed his public career in the National Government. Before he was 40 years old he had held such high offices as Director of the Budget and Secretary of the Army. Since 1952 he has had an outstanding career in business and at present is Executive Vice President and Director of General Dynamics Corporation, a progressive entity which is heavily involved in production for national defense.

His experience as a Government executive and manager, a business leader, and a wartime military man particularly qualifies him to bring us a message that will broaden our horizons.

It is a pleasure to welcome Mr. Pace back to the Industrial College and to introduce him to this audience.

Mr. Pace.

MR. PACE: General Hollis, Admiral Wooldridge, Members of the Joint Colleges: A great many addresses that one has to make are difficult chores, but some are real pleasures. This, fortunately,

6074

comes in the latter category for me. I say that for two reasons. One is because in the years that I was here in Washington both Mrs. Pace and I came to know the military well, to make many real friends among them, and to have the feeling that we were not only associated with them but a part of them. I was young enough when I was Secretary of the Army to acquire many intimate friends among the younger officers, and I think it is fair to say that, in the three years that I was Secretary, I made as many lasting friends, as did Mrs. Pace, as at any time in my entire life.

The second reason that this is for me an unmitigated pleasure is that I had the opportunity of really seeing the advantages that accrue from the educational system in the military. During the period that I was Secretary of the Army, the men with whom I was most closely associated militarily were Generals Bradley, Collins, and Vandenburg, and Admiral Sherman. This was during the difficult period of the Korean War, and I can't help, as I think back over that period, being impressed with the enormous contribution of these men, not just in a military sense, but in a broad political and economic sense.

Of course they always prefaced whatever they had to say by saying, "speaking from a purely military point of view." Then they hastily got into the broad geopolitical and economic factors that every man must touch on when he is in that field. I never knew whether it came from a consummate sense of modesty or from a desire to have the record established in the event the situation necessitated it. But, in any event, these people were so magnificently qualified that, frankly, one will never know what it meant to us in that period to have that type of thinking available to us.

One thing that I think I can say to you is that, while it will always appear, sad to say, that the military man can point out the broad aspects of the military problem and the civilian can work on it from an economic and political point of view, it just won't work. Basically, the three are so deeply intertwined that to assess a matter purely militarily is meaningless unless it is tied also into the economic and political problem involved.

I remember particularly that the whole layering of the budgetary process was most unsatisfactory to me when I was Director of the Budget. I felt that, beginning almost two years before a budget was formulated, going through a piecemeal process of review month after

month did not generate either a confidence in the system or a satisfactory result over a period of time.

One of the things that I was able to do when I moved from the Budget to the Pentagon was to establish a system whereby the budget people worked in the defense establishment with the defense budget people so that the double layering was eliminated and, more importantly, the people in the budget acquired a more intimate knowledge of the problem that was involved. Again there, I cite it because I am convinced that for you to do your job effectively a knowledge of only the military aspects of a problem today is far from sufficient. You must have at least a grasp of the broad implications of both the economic and the political aspects of military development.

I also was impressed with the impact of the military men abroad. I remember one day being called into General Marshall's office and he said to me, "Pace," he said, "I am Chairman of the Defense Ministers who will meet at Brussels to reorganize NATO and to appoint a Supreme Command." He said, "I think that I will send you in my place. Can I have your judgment as to whether you are qualified?" "Well," I said, "General Marshall, I'd rather think that over." So I spent a relatively sleepless night, and I came back and said, "General Marshall, I think that you had better send another man, not because I don't think I can do the job, because I think I can; but I believe that Europeans respect maturity, and I think you would do well to select a more mature man." He said, "Thank you, Pace. I have decided to send you." I said, "General Marshall, you could have decided that yesterday and I would have had nine hours' sleep." He said, "I thought if I did you would not do the job as well."

Again, in dealing with broad international problems as I did at Brussels, where I took both General Collins and General Gruenther with me, and in participating again at Ottawa, at Rome, and at Lisbon-- and in this area I remember the effectiveness of General Beebe of the Air Force, Admiral Wright of the Navy, and Colonel Abe Lincoln of the Army--I could not get out of my mind the enormous advantage that the military man had over the civilian because of the educational process to which he had been subjected. Now this process, quite naturally, stems partially from the fact that it is necessary to over-staff in peacetime so that you will not be too badly understaffed should war come. That allows you in the military an opportunity that is not available to us to the same degree in industry to educate yourselves consistently throughout your career, and therefore I feel that the men

1078

who have represented us abroad militarily, not only at the top of NATO, but in the MAAGs and in the military training organizations, have this advantage. Goodness knows, when I was in Turkey I could not get over the feeling that fellows like Duke Arnold were the best ambassadors we had abroad. The whole gamut of responsibility of commanders abroad, the technique of causing the sailor, the airman, and the soldier to recognize his responsibility, constituted one of the major broad-scale political problems of our time. Again, I felt that the men who did it were educated for it.

When I left the Government, and I had had 16 years in Government, at county, state, military, and Federal levels, I think probably one of my greatest concerns was that I would be bored. I just could not conceive that the problems of business could possibly approach, in scope, magnitude, or interest, the problems of public service. But yet I found to my intense satisfaction that there was no sense of boredom when I went into private life. I was fortunate in going into an area that was related to the field that I knew and, frankly, loved so well. I have always felt that a man's most critical assessment of himself is whether he is growing internally. If a man continues to grow internally, his life is, in my judgment, a meaningful thing. When he ceases to grow internally, it ceases to be meaningful. I think in this whole educational process in which you are presently engaged that this opportunity is available to a maximum degree, and I think that the way you use it will be the measure of what it means.

Of course one never attains ultimate growth. I had that very forcefully called to my attention about two weeks ago. I have a young daughter named Priscilla, aged 11, a blithe spirit if I have ever seen one. Down the road lives a young man, aged 12, named Clay, and he is a favorite of mine. I asked Priscilla how she was getting along with Clay and she said, "Clay and I are just friends." So I asked her, "How about Sam?" She said, "Sam is my boy friend." I said, "Priscilla, can you distinguish for me the difference between a friend and a boy friend?" She looked me straight in the eye and stated, "Daddy, if you haven't learned that by now, I doubt that I can explain it." I cite that to you only because in my estimation no one ever reaches the ultimate in growth.

Turning to the topic at hand, there are two things that stand out in my mind in this government-business partnership. The first is the tremendous impact that the military has had upon business; not

207

only that business which is associated with defense dollars, but all business. I think that the first thing I would say to you is that, in my estimation, one of the real challenges of the future is how effectively government and business can work together.

The whole spectrum of military-business relationship has certainly changed with the advent of the airplane, the missile, and the tremendous change in all military technology. It was not so long ago, as you all know, when the problem was: How quickly can we mobilize our industrial strength and prepare ourselves for a battle that has started on some foreign soil? Quite obviously, that problem is no longer the problem of today. The problem of today is one not only of constant readiness to provide the kind of strength that can avoid war or fight a war if it comes, but also is one of keeping up with a technocracy that moves so rapidly that what comes off the end of the production line is very often obsolete at the moment it is produced. When you think that in many instances you are dealing with a weapon system that requires from 6 to 8 to 10 years to develop from the moment of inception, you can understand the enormous importance of, let us say, the businessman being knowledgeable not only as to the specific weapon or weapon system that is to be developed but also as to the time of development; so that you can fit it effectively into the military program as a whole.

Today the scientist has become an important factor in American life. One of the scientists who works for us told me that as recently as ten years ago you had to palm a physicist off as a chemist in order to get him an industrial job. Yet today, with the growth and development of scientific requirement, the physicist is in as great demand as the engineer.

Under the system that we operate, private business can attract and can hold scientific competence because of its capacity to pay higher salaries and because of the greater incentive involved than can the Government or the military. Therefore, it becomes essential, in my estimation, that each of the services utilize at the very start the major competence that is available. One of the things that concerns me as I look back over the period when I was in Government is that, sitting on the other side of the fence today, I am convinced that we did not make the most effective use of the contractor. In many cases you are dealing with big business, where the vice president in charge of engineering is paid 50, 60, or 70 thousands of dollars. He is a man of vast experience and great competence. If the imagination

0012

and competence of that man are not utilized, then basically, in my estimation, the Government is not getting the most for its money. Not only must he be utilized but, in my estimation, that man must have a general grasp of the total problem when he gets into the operation, in order for him to get the maximum value out of the advantages that the total organization has to offer.

In our total company we employ over 80,000 people. Of that number over 15,000 are technicians; and the mass of brain power that we have available to the armed services is enormous. Now, the technique of today is the utilization of that brain power. Is it to be used wisely? Is it to be used to its maximum? If it is, then this country benefits immeasurably. If it is not, we are the losers.

As an old Budget Director, I am perfectly aware of the importance of economizing in the areas in which monies are being expended. But I am likewise equally aware that in many instances economies can be costly. I mean by that that today one really outstanding man--one really outstanding man--can make a difference of two or three years in a program--in a missile program. If that man is not encouraged to stay on, if that man is not given an opportunity to utilize his talents to the nth degree, if there are barriers set up against his economic progress, then, despite the fact that you might produce more cheaply, you will not, in my estimation, produce as effectively, nor will the overall economy benefit to the same degree.

What I am really trying to say is that there is no broad rule of thumb in this area that is compelling, because today so much of advance lies in the talent that is locked up here in the minds of the few. I have had occasion to sit in the same room in the past three years with Dr. Teller and Dr. Bethe, two of the great minds of our time. They had not sat in the same room for many years. I am impressed with the fact that one of our great problems is to insure that you in the military and we in business utilize these people, not only effectively, but in a fashion that generates the maximum for what we need.

Now, the second factor that stands out very strongly in my mind is the tremendous change that has been wrought overall by military developments. When one cited, as one did in the past, the contribution that the military has made to the civilian economy, one normally talked about medicine. One went back to the days when typhoid was eliminated, and one cited various contributions; but rarely in the

industrial field. In my estimation the military development of the atom has, frankly, been one of the great contributions of history in the total growth of this Nation. We achieved from that not only a knowledge that can lead to unparalleled scientific development but likewise a lead in the use of the peaceful atom that was not vouchsafed to other nations of this earth. This atom is so intriguing in terms of its total capacity to contribute to a peaceful world that it frankly has taken my mind tremendously. Out of this initial development for the military has come an opportunity for a new source of energy that is unique. Its potential is so exciting that its ultimate is bound to be enormous.

When you recall that one pound of uranium can generate energy that is the equivalent of 1,400 tons of coal or 2.3 million gallons of gasoline; when you conceive that it is weightless, and therefore mobile; when you conceive that it is in the ultimate sense almost costless; and when you conceive that it is capable of reproducing itself, you can see that ultimately it is bound to change both the political and the economic, as well as the military, face of this globe. It is not beyond the power of man's mind to conceive that this product that has come out of an original military application will one day find a cheap means of extracting salt from the sea water. When one thinks of that in the total economy of the world, one begins to see an opportunity where the "have" nation can make it operate properly for the "have-not" nation. In certain backward areas it is possible that one whole stage of transportation can be bypassed by reason of the potential that is locked up in the atom in the air. It is conceivable that the whole process of agriculture might be changed; and certainly it has brought about a total change in the technical thinking of this Nation.

It is certainly true that for the past two decades this Nation has contributed more to technical development than any other nation on earth. We could take an idea and refine it to the ultimate. But in terms of basic research we did not attain a similar peak. I recall when I was Secretary of the Army that two things fascinated my mind. Number one was research and development. Number two was intelligence. I found that the hardest thing to move up in research and development was basic research, largely because the results of that basic research were in the indefinite future, whereas the results of applied research were very likely to occur in the lives of the men who were functioning at that time. And yet today, as we in industry travel in Germany and England and areas where basic research reached the maximum in the

past, I keep coming to the conclusion that we have made enormous strides forward in this Nation in the scientific field and that no longer will you find basic developments coming out of the old countries that will replace the things that we are doing here. Ideas, yes--but today we are developing a whole new crop of scientists and scientific thinking that, in my estimation, can again change not only the whole military approach but the whole industrial approach in this Nation.

We compete, largely because of military reasons, with Russia for the development of scientists in the school. In our company, for instance, we are planning on making movies about the atom, and we are also distributing books in the secondary schools to encourage the development of scientific thinking in this country. I feel that a whole new era is being ushered in.

I think likewise that the military does not have to bow its head to anyone in the field of management. The whole philosophy of decentralization that has been basically a military one for years has been adopted by General Motors and General Electric, and certainly we in General Dynamics have adopted it to the nth degree.

I find that in the area of personnel training the whole governmental development is one that has taken great strides forward. Because of Government's size, because of the nature of legislative controls, there is, in my estimation, a limit to what you can achieve vis-a-vis the man in private enterprise. But the point that stands out in my mind, as I have lived for 16 years in Government and 4 years now in big industry, is that Government, and particularly the military, does not have to bow its head at all for the techniques which it has developed over the years.

I feel that a major contribution has been made by the military in the whole scientific research field, and I feel that the future success or failure of what we achieve will be based largely on how wisely the military uses its industrial potential which is being developed, not on a standby basis, but on a ready basis, not in terms of something that can be developed in two years, but in terms of something that can be developed in 8 to 10 years, and in terms of the capacity of this group of men 4 or 5 years from now. In the taking of industry and directing it to use these men effectively, in my estimation, lies the whole future success or failure of our military system.

Thank you very much.

MR. PACE: Colonel, before we start, may I have the privilege of telling a little story?

COLONEL BARRETT: Gentlemen, Mr. Pace will be ready in a moment for your questions. He would like to tell a story first.

MR. PACE: Before I answer any questions I have asked for the privilege of telling a story which some of you may have heard before. It is a story of little Johnnie. He is seated with his father at the fireside. Little Johnnie is reading the paper, and his father is reading a detective story. Little Johnnie looks up and says to his father, "Is the Empire State Building the tallest building in the world?" His father looks down and says, "Johnnie, you know I am not an architect. Are you trying to embarrass me?" Little Johnnie looks up and says, "Tell me, Pops, why is grass green?" His father says, "Look, son, I am not a botanist. Are you asking these questions to embarrass me?" Little Johnnie by this time is almost in tears. He feels the paper and he says, "Pops, can you tell me why this paper is so slick?" His father says, "Look, son, you know I am not a chemist. Do you ask questions to embarrass me?" Little Johnnie, with tears in his eyes, says, "Pops, you don't mind my asking you questions, do you?" His father says, "Certainly not. How do you expect to learn anything if you don't ask questions?"

With that in mind, I will entertain any and all questions; and I will say that there has never been a time when I have refused to answer any question, except on the grounds of lack of knowledge--never.

QUESTION: Sir, I would like to ask you, in the light of your recommendation that the military use to the utmost this potential that is available in industry, whether or not you feel that our existing framework of procurement regulations in the military does not often militate against this.

MR. PACE: I think clearly the answer to that is yes. I think that regulations in the military change more often than laws of Congress, but I think that it is impossible to keep them up to date. I think that, strangely enough, the requirements of relationship and liaison have changed almost as rapidly as technocracy. Just as today the missile adds a whole new facet to the planning of all three services, so the technique of using the people who can develop it and can develop the countermeasures that relate to the utilization of the missile is

0072

away behind the times. I frankly think that a review and a reassessment of the whole regulatory system in the light of the changes that have occurred might well be in order.

QUESTION: My question has the same basis as the previous question, utilization of potential. One of the complaints on the industrial side has been on the security restrictions. In fact it has been on both sides. Do you think this complaint is justified?

MR. PACE: I know there is a reason for everything. I had been, of course, Director of the Budget and Secretary of the Army, and had been fully cleared. When I went back out into industry, they had to go through the same process for each of the three services and for the Atomic Energy Commission, which meant that whatever value I had for some four months was restricted by my inability to deal in areas in which I had been informed and at the highest level.

The whole problem of security is, of course, one that troubles all of us. One takes papers and places them in requisite steel files, and then reads infinitely more informative articles in The New York Times or in Aviation Monthly. It is something that really has concerned me deeply. Quite clearly we are losing a great deal by it.

I come into it to a high degree in connection with our Canadair Subsidiary up in Canada. No one can sit by and think that we can adequately defend North America without the utmost cooperation from the Canadians, and at the same time they are not only providing us with the means of setting up the bases of our air defense but are also providing some of the people and some of the hardware. In many instances it has been impossible to clear Canadians whose personal security qualifications are above reproach.

I doubt that either you or I will see the ultimate solution of this problem, but it just does not make sense in many instances. On the other hand, it is a little bit like the tax law. Nobody can possibly conceive that tax laws are equitable, sound, or just; but when you go to revise them your problem is that they are likely to become more inequitable, more unsound, and more unjust. The security problem seems to raise the same situation every time anybody looks at it.

This is a long, roundabout way of answering the question very simply, which is that quite obviously the contractors could do a more effective job if the security limitations were not as great.

Let me say, however, that in my estimation the services have done a uniquely fine job of keeping these limitations at a minimum, certainly as far as we are concerned, in providing complete knowledge.

QUESTION: My question relates to your comments on the first question and your comments on our not utilizing industry to the fullest extent. It seems to me that our problem there is the political aspect of the problem in not keeping our regulations up to date. I would like to hear how can we do this, and how can we, from a practical point of view, shall we say, educate the politicians so the regulations will permit us to fully utilize industry.

MR. PACE: Are you speaking of regulations or law?

STUDENT: Procurement regulations--I am speaking of both, I believe.

MR. PACE: Well, this process of education is well under way. I think probably one of the most satisfying things to me was the recent congressional investigation by Congress in Mr. Herbert's committee. I was most satisfied with the complete investigation involved. They really went into the situation quite thoroughly. They went into it on the premise that vast amounts of money were being used unnecessarily and that this was equally the fault of the services and of the contractors.

Then they came out with what I regarded as an enlightened report and with certainly a considerably broader basis of understanding of the total problem on the part of the Congress.

This whole problem is one, again, that I have thought about a great deal. The Congress has traditionally been the watchdog. Its function has been to prevent overexpenditure of public funds. Again I think the whole function of Congress has grown well beyond the solution of this problem. The way they appropriate money and the laws that they pass have a direct effect on our capacity to be strong enough to avoid war or to fight one if it comes. I think that the whole tendency to chip away and limit military operations, saving maybe 100 million dollars, and driving a billion dollars worth of talent out of the Armed Forces, is evidence of a pennywise and pound-foolish approach.

Again, in this I do not essentially blame the Congress, because I think that traditionally, over a period of time--and I have sat through,

UC 7

I think, as many armed service appropriations hearings as certainly anybody my age--they have aimed at the small because the big is so hard to get their hands on. But in the era in which we are living it becomes essential that a real effort be made to provide information for the Congress on the total problem that is involved.

I think that real steps have been made in that direction, and I think that, certainly, the exposure that business has had to the problems of Government--and I mean by business, businessmen who have come into Government--has had a great deal to do with the changing attitude on the part of the Congress.

They are, frankly, the ultimate bottleneck. That is the way we set up our system. Nobody could possibly expect even a great genius like Jefferson to anticipate the requirements of 175 years later. Historically, the elasticity of our system has been unique. However, I agree with you on the education of the Congress. It is important to recognize the difficulties under which they labor. There is a great tendency on their part to regard Government as a spendthrift. There is a great tendency on Government's part to regard them as essentially stupid. Now, neither is accurate or fair. Both are representing a point of view.

I think it is terribly important, from the point of view of all the things that I hope for and dream for in the future of this country, that we generate a better understanding of the total problem and some change in the broad perspective of Congress toward this problem.

QUESTION: In connection with the growth of technological developments, we hear a great deal about the output of Russia's educational system and about its exceeding that of ours. How seriously is industry concerned with that problem?

MR. PACE: I think industry is quite seriously concerned with that problem. As I cited, in our own case we are trying to get in at the secondary level. We are trying to really interest the kid in the ultimate scientific opportunity at hand. You would think the economics would appeal, because of the kind of salary a graduate engineer can command once he leaves the technical school, but apparently it is not enough. It just does not take hold at the secondary school.

I think it is a tremendously serious problem. It almost seems silly to say that Russia, which has been really last in the field of

education for centuries, should really challenge us in this field. But they are doing it, and they are doing it on the basis of a social system that permits them to reward whomever they choose to reward. At the moment they choose to reward the scientists in order to beat us. This is just another form of their competition or enterprise. The scientists are the best bets in their system today and large numbers are being produced.

You just can't get around the fact that technically they have made great strides. You can't get around the fact that, as I have often said, the fellow who has the job of defending has got to be at least twice, and maybe three times, as good as the fellow who has the opportunity to attack, in order to make it unwise for him to attack.

Therefore it is a problem, and it is a most difficult problem and a very thought-provoking problem in terms of the direction which our whole society must take.

**QUESTION:** Do you believe that the current trend toward centralized procurement responsibility, as evidenced by single management, will hurt or assist business relationship between the military and industry?

**MR. PACE:** Well, again, I am a fellow who feels that that question cannot be answered categorically. For one to say that centralization or decentralization is sound per se is not a very meaningful statement. It depends on how it is executed and who is charged with the execution. In anything as large as military procurement, centralized procurement will be centralized in name only.

It is quite apparent that it has to be decentralized. The only question is: Does it siphon into one place or another? The thing that would concern me about what you mention is that it is generally taken as a cure-all for the problems that are involved. In other words, there still seems to be in some people's minds the belief that you can just set up an organizational structure and take as mammoth and as difficult a job as overall service procurement and make it work all right. You can't. The very nature of the job of procurement, the changes involved, the size of it mean that there are always going to be hundreds of demonstrable negatives that are involved.

Frankly, I would like to see some effort made toward decentralization, but I would like to see that effort made in terms of growth factor rather than by an arbitrary decision that this is the way we are going to do it.

Does that satisfactorily express my point of view to you?

STUDENT: You mentioned the intelligence base that Government has and the one that industry has in the training of personnel, and the lead that Government has over industry.

MR. PACE: I said it was gratifying.

STUDENT: Do you think that industry is more concerned with Government personnel? Do you think that there should be an interchange of personnel between Government and industry, and do you feel that there will be an increase along that line?

MR. PACE: I think the answer to number one is, in certain specialized areas, yes--but not as a total proposition, because industry does not have the competence to train total governmental personnel. I think the training system in Government is by and large a good one.

I think that the answer to number two is that the best training that could come to governmental employees would come by change and association. I think exposure to the system is probably the best education that is involved.

General McNarney, who runs Convair for us, had previously run a business-type command and had major responsibility in both the Air Force and Defense. He has done a simply superb job in organization, as well as in the development of long-range planning. Much of this came out of the system that had been generated.

QUESTION: This question deals with your statement on the need for greater basic research. Presumably this is not the sole responsibility of industry. Can you outline an acceptable path to cooperation or division of responsibility between Government, industry, and civilian educational institutions?

MR. PACE: It is certainly not the sole responsibility of either the Government, industry, or the educational institutions. When I was in the Army, research and development was the thing that most occupied my mind. I found that the programs were so varied and so distributed that it was impossible to designate or to indicate--well I should say very exactly--what it was that we hoped to ultimately develop. I found that we were paying attention to such a vast number of important projects that, to a large degree, we were not recognizing where we ultimately hoped to be in 5 or 10 years.

I think in all frankness that the Air Force, which has had the best opportunity because it came along last and took a look at all the systems, had done a really remarkable thing. I think the separation of Rand from Washington has permitted Rand to perform basic research without being drawn into the current problems of the services in a really remarkable fashion. I think their semiautonomous position has been a major plus.

I think that all the services are moving generally in that direction even though it runs contrary to human nature. This has nothing to do with military or business. It is human nature to be hesitant about putting your money into something the result of which you cannot see and the result of which you know will probably not occur during your lifetime.

Perhaps the chemical industry has become most fully aware of the potential of basic research to industry. Now that they have the input, the inflow, of what was started ten years ago, they are perfectly willing to contribute more to research so that ten years from now somebody will benefit from the results. Until you get that snowball started, it is one difficult proposition to get basic research going.

In industry we are just beginning to move into that field. I know from experience in our own company that our basic research requirements in this year will be about ten times what they were last year. I am sure that that is the concern of other companies similar to ours.

From the point of view of the universities, their instinct is more towards basic research than is that of Government or industry, and their pressure is more in that direction, because their thinking tends to apply less to today than to 10 or 15 years from now. They have been enormously available to both Government and industry as a source of basic research.

I feel that the process is, frankly, coming by leaps and bounds both in industry and in Government. I frankly think that the more difficult job will be to press it forward in Government than to press it forward in industry.

QUESTION: I would like you to compare the complexity of management responsibility of the executive in Government, the military or the civilian executive, with that of the executive in industry.

MR. PACE: Well, the executive in Government has an infinitely more complicated problem. In the first place, having been at the top, I know that the top man's principal responsibility is to clear it with Joe, Jim, and Sam, and, having done that, he finds out that Dick was the guy it really should have been cleared with. Therefore, the top executive in Government is spending most of his time clearing it, instead of Government clearing it with the Congress or clearing it with the White House, and he has very little hand in the directional flow of the operation.

Of course the Pentagon constitutes a particularly difficult managerial problem, because you have the problem of the man in uniform and the problem of the man who is not in uniform. Quite clearly, your civilian secretaries have had certain prerogatives that they feel need to be regarded. The military people have been there about two years and may be there for another year. So you have to get all the boys and take them as far as you think is possible and wise. Basically we have the job to do, so we have to get ahead with it. Now this, of course constitutes an additional problem.

There are two basic problems in Government that you do not find in industry. First, in Government there are many laws that are set up for purposes that are quite remote and unrelated to the problem you face, but still they are controls. If they coincide, the freedom of Government is strongly limited.

Second, you have the fact that you have no way to assess the success or failure of either your operation or other people's operations by a clear-cut dollar sign, and no adequate substitute has ever been found.

I have taken a long time to tell you that the executive problem in Government is infinitely greater than the executive problem in industry. The one great pleasure I get out of industry is that when I start a project I am very likely to see it through and am able to assess whether I, frankly, have the keenness of mind and ability to successfully prepare and carry out a program. In Government I might have thought I was doing well, but I never had any proof of the pudding.

COLONEL BARRETT: Our time is up.

MR. PACE: I would like to take just one more question.

QUESTION: We have talked of the cooperative aspect of the Government executive. I would like to ask about the competitive aspect. That has to do with bodies, technically qualified bodies. It is one of the major problems of personnel management in the services today. How do we retain the technicians that we train while they are in the service, or rather, that the services train for industry? And I would like to hear what you have to say about a little cooperation from industry on that.

MR. PACE: It serves me right for asking for one more question. When I was Director of the Budget the Army came in with a request for a number of band instruments. It represented to me a figure that made me believe that every man, woman, and child in the Army was going to play a piccolo. I raised complete hell and said, "It can't be. That number has to go down." Four months after I became Secretary of the Army I requested more band instruments.

When I was in Government, I felt that my principal job, both as the Director of the Budget and the Secretary of the Army, was recruiting and training. I went out competitively with big business to some of the top colleges and we got more than our share of people coming in. Not that the reward was the same, but there are some things that come to you in Government that you just don't get in industry.

I have talked about why I enjoy industry. I likewise enjoyed Government. There was a cleanness to it. I was not working for myself. I was not seeking profit. I was seeking to accomplish results that I thought were important to a lot of people and not just to me. You can never get that when you get away from Government. You should never forget that. It is terribly important.

The problem you speak about is a difficult one unless you establish some kind of code or restriction in your own company, not just X, Y, and Z, but at an organization, maybe NACA or Rand, and maybe at a point in the technological operation. We have never found a way in this competitive society of ours to set up an artificial restriction. Men have a tendency to go where they wish to go, irrespective of the artificial restrictions that are set up.

As to self-restraint, it will work for you, but, if it does not work for a competitor, it quits working for you.

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I think the only answer is for Government to create greater advantages for the people who stay in Government. That is part of the problem of educating the Congress. Also, it should make those advantages clear to people in Government. They probably don't realize that they have advantages. I will say to you that no part or parcel of my life has been as fully satisfying as the period that I served in Government. Is that a fair answer?

STUDENT: Yes, sir.

MR. PACE: Thank you very much.

(7 Nov 1956--250)O/feb