CONVERSION AND RECONVERSION OF INDUSTRY FOR WAR

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DR. REICHLEY: Continuing our study of Production, we come to a subject which is of interest, not only to mobilization planners, but also to business leaders who have to produce the material for war. Planning for the expansion and conversion of industry for war production is vital. But in this planning, it is advisable to give some thought to the problem of reconversion to a peacetime basis.

Our speaker, Mr. John W. Pocock, has extensive knowledge of this subject and has had wide experience in the field of management. As you know, he is a member of the firm of Booz, Allen and Hamilton. This is his seventh appearance at the College as a member of our guest faculty, and, I might add, on each occasion he has dropped many gems of wisdom.

Bill, it is a pleasure to welcome you back.

MR. POCOCK: It seems to have become a rather regular thing for me to speak to the Industrial College on the subject of conversion and reconversion in industry as a part of your production studies. You have always been good enough to give me liberty to roam at will over various production topics--often you have not heard the terms "conversion" and "reconversion" mentioned beyond the title of my lecture. I have regularly tried to bring to you a summary of the feeling of industry concerning industrial mobilization programs as I interpret it and have also felt free to salt in certain of my own feelings concerning the subject--always, I hope, identifying these as personal opinions.

In preparing my lecture for this year, it occurred to me that it might well be a useful exercise to review some of my previous utterances so as to provide some continuity and, more importantly, eliminate repetition. In doing this, I had pointed up to me the fact that during the past several years the general attitudes and feelings of industry and management have undergone some change in this matter of mobilization relations with the Government and, indeed, that my own thinking on some of these subjects was changing both as a result of more experience and as a result of the changing atmosphere surrounding mobilization programs.

It seems to me, therefore, that it is appropriate to open our discussion with a consideration of some of these changes. I think that a strong fundamental sense of change and the trends to be expected in the future can serve as a useful background for your production studies. After all, you men will be in management positions in the mobilization program and will be far more concerned with general attitudes and environments than you will be concerned with the detail of execution. So I want to shift my theme just a bit this year and cover some of the dynamic shifts which have taken place in defense production attitudes and environments.

As an opening proposition, may I state my belief that "Conversion and Reconversion of Industry" is now an obsolete title, since I believe that the absolute conversion and reconversion of industry into war production and out of war production is and will be no longer a generalized program. Perhaps a better title might be "Industrial Production for Defense," or "Industry to the Ramparts"--if you want a Sunday Supplement lead.

In the past we have had a general inclination to categorize industry into several classes. At one end of the spectrum we have industry which is clearly military in its nature and has little if any purpose in being beyond that of producing war materiel. The military aircraft industry and the ordnance industries are in this class. At the other end of the spectrum, we have classed those industries which provide supplies and materiel to the Armed Forces identical or similar to the product which they turn out for our peacetime needs. The clothing and the food industries would be typical of this group. In between we have sandwiched the large group of industries which will, over a period of time, convert their normal capacities from their peacetime product to the manufacture of a somewhat different product for defense support, produce this product over a period of time, and when the final whistle blows, reconvert to their peacetime product.

I wonder if in reality this middle group hasn't been struck out of the picture to a great extent by the trends of planning and thinking during the last several years. Three basic considerations stand out in my mind in connection with this. And to a great extent, I believe they are irreversible--at least in our management generation.

The first is that of an expanded defense budget. Until very recently our country has been a very low "peacetime" spender for defense programs and production. Prior to World War II, during the

twenties and early thirties, our defense production took about 1 percent of our national product. Just before the Korean situation broke, our defense programs were taking about 5 percent. (Please don't hold me to these exact figures; I am striving for an order of magnitude and not the final decimals of the arithmetician.) Today our defense programs are taking nearer 10 percent of our national product, and perhaps even more important, this appears to be a generally stabilized level, stabilized by necessity and recognized in national policy, for many years to come.

Lest this order of 10 percent seem but a small fraction of our potential, let me cite a few other figures, without attempting to draw precise comparisons. At the peak of World War II only about 33 percent of our workers were working in industrial or service areas from which our defense production effort was drawn. You see even during the war, we still had a great requirement to support our civilian population with service stations, grocery stores, dry cleaning, etc.

Furthermore, even within the manufacturing and service areas applicable to defense production much of our capacity was still turning out civilian products. Thus, any proud cries attesting our "100 percent conversion" were based more on emotion than knowledge of the facts.

And the same pattern is evident in embryonic form in today's national picture. The industrial and service areas already contributing to defense production or which we would broadly consider as "convertible" or expansible have perhaps 28 percent of our total national labor force and about the same order of our production capacity. Related to this, our defense budget no longer is just a drop in the bucket. And the useful volume of the bucket is smaller than the uninstructed might realize. I think now you see the point I am laboring toward.

There is enough money in our defense procurement programs, both now and probably for some years to come, to provide some continuing work for most of the companies who, by competence, capacity, and interest, would be counted upon to make up the bulk of our mobilization structure. There will be unbalance; there will always be those who want more; but, by and large, we can today provide more than paperwork exercises to our potential producers.

And so more and more of our companies have in being some sort of a production program currently turning out materiel for the defense

effort. True, this production may be running parallel to some non-defense production--it probably is--giving what I last year called the dual production pattern. But at least it's a defense production program in being. And when you have a production program in being, your emergency problem is not so much one of conversion but rather of expansion of your nucleus operation. While such expansion certainly has its headaches, they are vastly less than converting from scratch. It's simply the difference between starting from the 50-yard line rather than at your own goal line.

The net of all this? Establishment of a defense industry in being--lessening the conversion and reconversion problems and substituting going programs for paperwork exercises.

The second basic factor is that of the growing complexity of our weapons systems.

This matter has been belabored by many--myself included--and my intention is not to examine the problem of complexity. Today I wish merely to accept this complexity as existent--and probably continuing to grow--and to examine its impact upon our defense production programs.

At the outset let me state clearly that I believe this growing complexity of our weapons systems overshadows all other factors at this point in time when we consider our defense production problems. Quite aside from the problems of military operation, reliability and ease of service, it means these things to production mobilization.

It means a far more intricate and specialized production system. Complex products inevitably breed complex production systems. Our plants, our equipments, our tools, our processes become more intricate and require more precise integration and control.

Today I assemble my stable platforms complete with double integrating accelerometers in an air conditioned, temperature and humidity controlled room. Where is the hastily converted sewing loft in which I assembled autopilot components in World War II? Today my forging presses tower several stories high. Where is the light hammer of ten years ago? Today precisely controlled furnaces treat my titanium and I work it hot. Where are the simple dry-ice coolers I used on my 17S and 24S aluminum?

Now, of course, this overstates the case, but the trend is there and we can probably only submit to it, never turn it back. But this more complex production system means:

1. More time to get production facilities ready and far greater problems with specialized facilities. Do we have the time or resources to convert companies that have not been in the specified field?

2. More money for our production base. How far can we afford to spend to convert the base?

3. More time and effort to train our workers to turn out an acceptable piece of work. And a premium put on higher levels of skill and basic intelligences in the labor force. In fact, the requirements for development of fundamental skills as opposed to simply harnessing additional manpower through conversion of labor forces may prove our biggest stumbling block in expansion. Can we really convert labor forces as readily as in the past?

4. More complex production management control and decision processes. This puts an increasing emphasis on management know-how--that much over-used term. Can we risk development of this know-how in "converting managements" or would it be developed too late in any event?

I've stayed away from one point which should be of critical concern to our planners, but which goes beyond the immediate theme of this lecture. This is simply the rule that greater complexity leads to greater vulnerability. Our production systems with their increasing complexity will be far more susceptible to knockout or crippling, even though the physical damage may be relatively small and isolated.

A corollary to this military vulnerability aspect is the greater liability of failure of our production machine simply because we have not designed or planned well.

We have so many more things to take into consideration in building our production machines today. Because of this, I think we have a growing requirement for an actual test run or prove-out of our production system by the actual production of our product. A great deal of time and attention must be spent by our production organization in

organizing the plant program, and an even greater amount of time spent in developing the know-how required to operate this plant at full efficiency. The only way to prove it is to run it. Furthermore, once in being and proven out, the best way to keep such a production machine in shape is to actually keep it running.

An operating plant has genuine appeal in at least two additional ways: It creates a stockpile of weapons systems, thus adding to immediate military stature and it caters to an industrial intelligence which has always found idleness difficult to accept, even in standby plants.

The net of this is to raise, in my mind at least, the question of whether we can consider a broad conversion of industry as technically feasible any longer, or, granting we see some opportunity, will we have the much greater time required today to go through with the conversion process.

I don't believe so. I believe that there are more powerful arguments than ever before--because of the complexity factor--on the side of maintaining a defense industry in being and depending not upon conversion, but upon expansion to carry an accelerated production load.

The third basic factor underlying our changed production planning picture concerns the military situation.

This will be a short discussion for two reasons: First, I'm no military expert--and I'd rather not be at the moment; second, I'm not so sure the military situation is such a radical determinant in our production programs anyway.

We evidently have among our considerations the possibilities of continuing brush-fire actions similar to Korea, either single or multiple. We have the possibility of a swift, unheralded all-out attack, the decision coming in a few days or weeks--a "snap war." We have the possibility of a long-term, all-out struggle similar to World War II. And I'm sure there are various combinations of these.

But the brush-fire actions can be supported to a great extent by our continuing defense production at our present or slightly expanded budget level. Some expansion, yes, but no multiple expansion or general conversion, even though here we would have the time.

The brunt of supporting an all-out, snap war must be borne by plants already in production and by stockpiled materiel. These, again, are the plants in production under our present budgets and the stockpiles are their production. True, we might increase this activity if the threat appears to increase substantially, but no long-term multiple increase or conversion—simply because in this way our economy could become unbalanced to a dangerous point and kill off our way of life as surely as the H-bomb, although a little more slowly. So our production in being must carry the load--expansion preplanned perhaps; recovery of capacity after initial action programmed, yes; but conversion of other facilities, too late.

Production support of an extended, all-out war does bring some possibility for conversion. But the above cited technical problems of conversion remain. As for planning, the big question--assuming feasibility of conversion--is conversion to what? It seems to me that we have learned in the past 15 or 20 years that any requirements we might forecast today would most probably be drastically changed in view of the actual requirements determined once the pattern of the action was apparent. Our order of business would be to first repair the damage and recover the capacity of our defense industry in being, expand this as rapidly as possible, draw in as many new producers as possible to support the main producers--and lastly, consider converting other prime industries.

The net effect? Again in my mind, conversion probabilities are severely diminished.

Summing it all up, I believe we are fast going to the industrial pattern of Europe, where a permanent and relatively sizable arms industry has long existed as a part of their industrial economy. This defense segment of our industry is developing our new systems, producing our weapons stockpiles, learning to be highly efficient at their tasks, and preparing an admirable base for expansion.

Now, if this production pattern is true, there are some interesting shifts in our production planning pattern which deal with the production side of our mobilization planning. With a defense industry in being and operating, we have far less need for a lot of paper planning. This is because we aren't planning so much any more; we're producing.

From the standpoint of program effectiveness there is no comparison between shuffling paper and cutting metal. My favorite scripture

on this point is from Dr. Albert Speer, Hitler's Minister of War Production. Dr. Speer has said:

> "The Reichswehr dealt with armament problems theoretically. Industry generally had no great inclination to participate in this preparatory work. After 1933, the Wehrmacht was therefore forced to build up huge administrative organizations . . . . These organizations, consisting of officers and civil service officials, conducted purely theoretical deliberations . . . and became so large that they managed only to keep each other busy. They committed what might be called mental incest, and when rearmament got actively under way, all of the mistakes which later led to the surprisingly low level of armament production were already embryonically present.
>
> "We were at a great disadvantage because our rearmament had been planned too long on a theoretic basis."

Now, of course, it's far more expensive to cut metal than to work with paper plans, but our present budget allows for quite a bit of metal cutting.

You note Dr. Speer's reference to the difficulty of getting industry interested in paper planning. Many of you have had the same experience. Most any company, most any executive, most any worker would rather put his efforts against something that has a tangible visible payoff.

Now that industry sees there is business to be had, and for some time in the future, the expected reaction is one of interest and a willingness to step up more directly to the defense production problems.

I think this has had one outstanding result--it is bringing top management minds further into the defense production picture. When we're paper planning, most companies "just go along." Their primary interests are in other directions. Top management tries to courteously avoid being drawn into paper planning and less experienced people are delegated the task of working with the services. But when metal is being cut, top management's interest heightens and you have additional power brought into the picture.

With our industry in being and with our management interest, we should be able to shift a greater share of our production program planning load over to the shoulders of industry. We have traditionally

bought capacity, labor, material, and not enough have we sought management.

Industry has been pretty successful in this country for quite a few generations. Indeed, the strength of the country has risen pretty much in direct ratio with the growth of industry. This growth of industry is the composite growth of many individual units, each engaged in planning how they can better meet the future as they see it. Let us cash in on some of this planning ability of our industry.

Now what are going to be my main concerns--or should be my main concerns--as I, the president or vice president in charge of my company's program, look forward to a defense production program? Let us talk about facilities first and take a look at some of the changes in management thinking that have taken place in the last few years.

If my problem is new or additional plant space--additional bricks and mortar, that is--it is probable that I will be giving greater consideration to investing my own company's capital in the erection of such facilities. The reason for this shift in sentiment is to a great extent a reflection of the more stable economics anticipated with defense production in the years ahead. There is enough business to make defense production worthwhile. The demand seems to be fairly level off into the future and the returns on the investment, while if not always up to more normal commercial standards, are at least more attractive than the up-and-down opportunities of a few years back. I may still look to the Government for certificates of necessity, priority help, and so forth, but basically I am probably more willing to undertake my own facilities financing today than I was three years ago.

I do nave one thought that haunts me. That is the matter of getting my money back on these facilities. I know that any investment on my part is going to have to be written off in the years ahead included in my costs. Here am I, with the enthusiastic concurrence of the services, relieving the Government's fixed facilities obligation by the erection of facilities, using a good portion of my own capital. But this is going to have to be included in my cost of doing business, and the hardware procurement people in later years, looking at the competitive cost picture, will be strongly inclined to go for the lowest procurement cost regardless of the fact that my own company's investment has eased a previous burden of the Government.

While it can well be argued by my company that the overall picture through the years must be taken into account and immediate costs for hardware properly related to the private investment picture, when the procurement negotiations get down to the hard and fast details, some of these factors tend to be forgotten. So this is one nagging consideration in my mind, and to date I've not gotten too much reassurance on this point.

Insofar as the actual design of the production machine itself is concerned (the production engineering aspects of the job, the process developments, etc.), this I take on as a fairly routine task. Whereas in the past years I may have looked askance at some of the more complicated equipments and production processes required, by this time I've gotten pretty well accustomed to the intricate patterns and look upon this side of the facilities problem as a lot of digging but no longer full of surprises. The growth in automation thinking in the past few years has helped to condition me in this respect, and certainly the rampant expansion of industry and production plants during the last few years has provided a reservoir of production engineering and facilities know-how greater than we ever had before. So this problem which was with us as a concern five or six years ago, I feel, as I talk with production people today, is pretty much washed out of the picture as other than just a hard, work-through problem.

In all probability I will immediately think of subcontract possibilities to relieve me of the necessity of duplicating facilities and capacities which may be available elsewhere. The more intricate controlling operations and processes I will want under my own control, but I have been pretty well educated during the past few years to look automatically to subcontract sources to support and expand my own capacity and reduce my investment needs.

From the standpoint of facilities, my greatest weakness is in the area of military vulnerability considerations. I still haven't gotten used to the thought that my plant may actually be in the front lines and that I must build in specific characteristics which will, to the extent possible, lessen my physical vulnerability and make postattack recovery more feasible. This is an area in which I still need a considerable amount of education.

Interestingly enough, the policy of dispersion of defense production facilities and the relocation of defense production activities away from the coasts has, after the initial outcries, been fairly well

accepted. In fact, this very policy has probably caused many companies to look beyond their own immediate environs when planning expansion or a new plant for the first time seriously. And in many cases they have liked what they have seen and have found other advantages, both economic and human, to remote locations. In any event, this program as a long-term program seems to be taking hold.

Insofar as the financial aspects are concerned--and money is an important ingredient in a production program--I have already stated that I am probably more favorably inclined to investment of my own capital than in previous years. The big question here is: Will this investment pay off? This means simply that the profit opportunity should be roughly on a par with the opportunity in nondefense industry. At the moment I wish to stay out of any specific argument as to whether this is or is not the case today. But as you gentlemen are aware, this is certainly one of the outstanding negatives in the minds of defense industry executives today.

It seems peculiar to many of us that in our immensely successful capitalistic society, which has been built primarily around the profit motive, that the word "profits" seems to have a certain profane connotation when we talk of defense industry. I see nothing unpatriotic at all in assuming that profits in defense industry can provide the same sort of incentive for effective and efficient program execution by industry as is the case in nondefense industry. But there are certainly those who go out of their way to make such implications.

Very quickly moving on to manpower, it is my feeling that this problem is understated by many. The problem emphasis has shifted in the last few years from that of mere number of workers available for my program to that of skills available. Insofar as numbers are concerned, my production processes of today, with greater attention toward automatic production, are requiring fewer and fewer workers per dollar of product turned out. The problem I face is basically one of skills.

This skill requirement cuts in two ways. In the first place, I need more skilled labor. In the second place, my skills required surpass the general level of skill requirements to which I was accustomed a few years back. Furthermore, it is highly probable that I will find fewer workers with the basic intelligence, ability and capacity to develop these skills and it will take me longer to train these workers.

My personnel selection programs and my training programs will probably have to meet requirements several notches above those of former years.

My greatest area of weakness in my manpower thinking and planning is probably again related to the problems of maintaining or recovering production during or following attack. Questions of the dispersion of workers throughout residential areas, the possibility of a cutoff from my worker force through attack damage, and an organized program to meet the various community responsibilities which will be thrust upon me during such a period have not entered my mind strongly. I still just can't accept the fact that this might happen and that therefore plans must be developed to meet such contingencies.

Next, just a moment or two on management. I have talked so much on management problems in earlier lectures that I feel I should be somewhat brief today. However, as critical as I have believed the management factor to be in past years, let me now say that I believe today it is more critical. I am talking about the executives, the organization and the control patterns whereby my production program is set up and directed. Management is the key thing for you gentlemen to look at when you are appraising the potential performance of various organizations or programs. I see three outstanding reasons for this critical status of management in connection with our defense production.

The first takes us back again to the problems of complexity. We have said that our complex products make for complex production systems. Complex production systems in turn make for more complex management patterns, greater requirements for precision in control, and a higher order of intelligence on the part of your supervising executives.

Secondly, there is the necessity for training and developing many management people so that they can carry on within their own area of responsibility even though they may be isolated for a period of time from higher direction. Generally speaking, this is always good management. It is good to have our management people able to make decisions on their own which are compatible with the overall interests and structure of company objectives and policies. This simply means we don't have to carry as much up to the higher level for decision.

But under pressures and conditions of attack, should it come to our own shores, this ability for isolated operation on the part of management individuals becomes far more important. I am not talking simply about the plant manager who may not be able to get through some three or four hundred miles of phone lines to contact his vice president for production. I am talking, too, about the assistant superintendent at the far end of our plant who finds himself unable to reach by plant phone the general superintendent, the personnel manager, or any other individuals on whom he has learned to count for hour-to-hour advice and instructions. Our intercommunications patterns within the modern plant are vast and complex things to which we often give little attention. But knock them out--knock out the phone switchboard, close up a roadway, block a few doors--and you have a rapidly deteriorating situation. And this situation could come with attack. Therefore, I believe that it is highly desirable that we stress the development of final decision-making capacity at the lowest level possible in our management organization.

The third thing that makes our management problem critical is simply the general thinness of management talent to meet the great and rapidly growing requirements of management industry. There simply is not enough good talent around to handle the jobs that need handling and handle them well. Therefore it behooves me to be exceptionally careful in the selection of my executives and supervisors and in the assignment of the most capable ones to the most critical spots in my organization.

What does all this mean to you men insofar as military liaison--if I may use that as a broad term--is concerned?

As I discuss the problems of military production with top production executives across the country, the subject of the plant representative enters most conversations sooner or later. Sometimes I wonder if you people realize how much a good plant representative means to a company engaged in a defense program.

I ask people: "Why were you able to get off the ground with this program so much better than Company X? Why are you doing so well?" They say, "We have a crack tool engineer." Or "We always design our product to be produced; the other fellows never do." And then, more often than not, they will come back and say, "Of course, Colonel X down here is quite a guy. He has helped us a lot." Or

"Major So-and-so is quite a help. Hope the service never finds out how good he is or they will pull him back and we'd be lost." Or "He works just like one of us; he's really a key man on the team."

Interestingly enough, I hear few comments about poor plant reps. It's not that there aren't any. It's just that the plant manager with a poor one usually has no previous standard to compare him with. He doesn't know what he's missing. All he knows is that there are lots of miscellaneous troubles and that the Army, or Navy, or Air Force, is to him a confusing and uncoordinated stream of visitors, planners, project officers, inspectors, auditors, and others. For these, the plant rep appears to be a useful sightseeing guide, but not much more.

The plant rep should be the whole Defense Department on the plant base. He should feel free to draw upon all resources of the Department to move his producer along, and he should be able to press for action. He speaks for industry in military councils. He speaks for the military in industry conferences. He is industry in uniform.

Forgetting the uniform for the moment, aside from being a generally superior human animal, there are certain outstanding traits which mark a good plant rep. Four are listed here:

1. He must have true maturity. By this I mean the sober wisdom that comes from consorting for some years with his unpredictable fellow men. Not the brisk brilliance of a promising young intellect.

2. He must have a personal acceptability. This is the knack of getting along with people. He thinks automatically of the human factors involved in decision. He is a compromiser and negotiator by nature, but certainly not where compromise affects integrity.

3. He must be a student of his assigned company and industry. In fact, he can probably tell you as much about the company, its historical background, its traditional problems, its people as any of its top executives.

4. And this, I think, is the thing we find least often--the plant representative has to have good judgment and a willingness to take what industry calls "business risks" based on that judgment. He might take as his guide the maxim "Consider the tortoise, he maketh progress only when his neck is out."

Such men are in short supply of course. The trend appears to concentrate such men in military policymaking or central control groups where their talents may spread over many plants or programs instead of just one. I think there are reasons for this. However, I do think we can continue to give more priority--and under the mobilization environment I see coming up this requirement for priority is increasing--in the assignment of top people to plant representative jobs where a superior performance on the base will help the whole program along and certainly eliminate many matters which now clog the central channels.

When working in industry during World War II, I was in an organization down in Pennsylvania which employed some 3,500 people making hard floor covering. Within two and one-half years after Pearl Harbor we had over 5,000 employees. Our big presses that had been embossing linoleum were now turning out sheet metal parts for aircraft. Our workers were assembling and turning out airframe sections. We had a large ordnance operation turning out shells and incendiary bombs. We had taken our large curing ovens and converted them to the production of camouflage materials. We had our conversion problems. It took more than two years to get through them and come up to that peak. We had reconversion problems and it took a year to go back through them. We were pretty proud of what we did.

But, gentlemen, I don't think that type of program is going to be seen again. Thank you.

QUESTION: If we have a permanent armament industry in some fields in order to share the business, there may be only a small number of firms. In a case like that, the military is reluctant to close up and withdraw its business from a very inefficient producer. This has happened in the aircraft business particularly. I wonder if you would be good enough to discuss how we can have an efficient industry and still keep from finding ourselves supporting inefficient companies?

MR. POCOCK: Well, we could talk for hours on that one. I heard one of our higher executives say about a year ago, "I think the best way is to have one of the companies go broke. Then the rest will know that they are going to have to start leaning on their oars."

You are right--we are going to find ourselves, through necessity, having to give some sort of support to some relatively inefficient

producers. However, even with current budgets, there isn't enough production to provide all companies with all they would like to have, and the more efficient a company can be in its production, the better the chances are that they will get a bigger slice of the military program. Many of them will be working toward that--a pretty good incentive.

Perhaps we have within the Defense Department a greater responsibility than we have exercised in the past to talk directly with the management of some of these more inefficient companies and show them with facts and figures, where they stand and how we think they can get out of trouble.

Now I know that this gets called meddling, and I know that management will always be able to come back at you and say, "Look, we know how to run our own business best." But I show these inefficient producers comparisons with other companies; show them why they are inefficient.

But try as we will, we are going to continue to support some inefficient producers.

QUESTION: Sir, another aspect of the Captain's question and you pointed out a weakness that we will continue to give peacetime production programs to certain areas, thereby continuing to narrow the production base, which to us in these days is perhaps dangerous, wouldn't it be better to pay a higher premium today and restrict production to the extent that we could spread it over a wider base and not leave it quite so vulnerable?

MR. POCOCK: To be quite honest, I do not feel that, despite the outcries of industry, there has been as much narrowing of the production base as some people might lead you to believe. As I look around the country, I can't honestly say there are any important or even moderately important producers of aircraft, ordnance, firecontrols, etc., that have been cut entirely out of the program. I know some of them had big cutbacks. I know some major producers, not in the game all the way, who in their own minds feel they have gone out of the business. But if you had asked me to give you the names of six companies who had been considered as important from a capacity standpoint in our defense production program and who are now cut out and left on the outside looking in, I can't give you the names of six. Maybe you fellows can. I think we have maintained a rather broad base, despite the outcries we hear to the other effect.

QUESTION: My question deals with one major industry, the automotive industry. Some students of World War II felt that the conversion of the automotive industry was not too effective. I point to Willow Run.

Maybe it was a bad choice of product. Maybe we might have gotten more out of it if we had left that effort with the regular producers. Do you see this problem growing in another period where it would be more effective for the automotive industry not to go into the production of any product other than what they have, which is usually a separate line?

MR. POCOCK: I don't know that I get your question. Going back to your point, there have been critics, myself among them, of the manner in which the automotive industry converted during World War II. Do I see in the period now ahead, should something like this happen, greater problems of conversion or greater problems of reconversion?

QUESTION: Should we consider conversion of that group or should we let the labor force move into other areas?

MR. POCOCK: Well, I think there are many reasons to believe that we cannot give as much attention or as much thinking or planning on the wholesale conversion of that type of operation as we had during World War II.

Now I know you can come back at me and say: "There is a large industry of 800,000 or 900,000 workers that ought to be converted. On the other hand, you know you can take a look at what actually happened to the automotive industry in World War II and you can ask yourself whether they were really converted or whether they expanded into some of these other additional areas--aircraft, tank manufacturing, ordnance manufacturing, that sort of thing.

At the height of World War II, the labor force working with the automotive companies was substantially greater than that which they had in their peacetime operations. The main thing actually that we sought in the automotive industry in World War II, to my mind, was management. Lord knows we had to work to change those facilities over and some of them weren't changed by 1945.

No, sir, in my mind, we can't be thinking in that direction for complete conversion any more.

QUESTION: Aren't we going to have a different type of conversion in the next war? In this last, we tried to get a broad production base by setting up a great number of manufacturers in total product. In this next war, since total products are susceptible to attack, why not let the prime plants do the assembly job and break out farther and farther the production of subassemblies and components and parts, with the handling from some of these prime plants at different locations. If one is knocked out, the assembly of these components could be directed to some other prime assembly plant that wouldn't be knocked out. Wouldn't that be more effective in the event of another war?

MR. POCOCK: The pattern you have sketched has many advantages to it. I don't know that I would necessarily say that this would be a conversion pattern. I think that could be a pattern of defense industry in being. I know there are those who feel that a dispersion pattern is not necessarily going to be the best pattern in case we have an all-out attack. Once again, when you are spread out like that, you spread the possibility that one or more of the supporting units is going to be hit. There are those who believe--and some of you may have read some of the memoranda from the Rand Corporation--that vulnerability will be decreased by not having this large dispersed network type of program, but rather have two or three rather completed consolidated units. I myself lean toward the pattern that you have sketched there but I don't believe that is a pattern for conversion. I believe that is a pattern for operation today.

QUESTION: You suggested that we help out some of the less efficient producers by pointing out their weaknesses and supplying know-how. I have seen that done in some instances, especially where we had a single source of supply. But we ran up against the complaint from efficient producers that we were syphoning know-how from an efficient producer to give to an inefficient producer. How far can we go in that?

MR. POCOCK: I know one thing, that there is no black line that you can go up to and say: "This far and no farther."

I, myself see no overriding reason why an industry should complain if, in maintaining defense capacity in being, production capacity in being, we have to syphon off a nominal amount of know-how from the more successful company to help the less successful go.

Where something like this is done, the profit making opportunities of the company that has to be helped should be diminished, and I think that natural forces to a great degree will do that.

We, of course, run into quite a bit of argument on this score. The very efficient producer can always say, "Let the other fellow go. We can take on the additional work." But I don't believe that he really believes that when he takes a look at the overall defense production problem.

I think if you have 20 companies and you have two or three who are inefficient, you will let the two or three go. But if you have five or six companies and that is all, you will work hard to save any of the five or six if they are in trouble--and I think the entire industry has to work hard to save them. I think what is good for weak producers is good for the industry as a whole.

QUESTION: In current defense work, some companies take these complex systems you talked about and separate out the job both organizationwise and facilitywise and work on it in that manner, not entirely but almost isolated from the rest of the products they make. Others try to integrate this, at least to some extent, into the other business they do, both civilian and other military. Would you comment on the relative merits of these two approaches?

MR. POCOCK: I think your question poses two problems for discussion. The first is: Is it wise or useful to break out or move the total weapons system into the various subsystems or subunits, and so forth, and likewise the manufacturing facilities that pertain to them. I say to that, Yes, it is. That is the way to set up production operations whether in one big plant or sorted out all over the country.

As far as the second part of the question, it would depend on how you actually placed this work out. I don't know whether you are getting back to the basic complaint that some companies are trying to hold it all themselves and refuse to let it out to smaller business on subcontracts, and so forth. Are you getting toward that point?

QUESTION: No, I was thinking more along the lines of components that can be produced right in the same general area, a shop area, as other components that might be used for civilian items.

MR. POCOCK: If I could do that with any degree of efficiency, I would do that rather than build another shop. In the first place, there is a lower requirement for investment and facilities, a lower investment for time in training, an opportunity for more rapid expansion when you have to push up production if you can have them go side by side through the same shop.

QUESTION: Do you think that the change from negotiated to advertised contracts increased industry's reluctance to risk capital and facilities in defense work?

MR. POCOCK: No, I don't think so. I don't think, when you get down to the actual mechanics of it, there is as much difference as people might think. No, I don't think it will make much difference.

COLONEL BILBO: Mr. Pocock, on behalf of the Industrial College, I want to thank you for a very informative and interesting lecture.

MR. POCOCK: Thank you very much.

(9 Mar 1956--450)K/en