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POLICIES, PLANS, AND PROCEDURES FOR MILITARY PURCHASING AND CONTRACTING

9 January 1948.

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GENERAL MCKINLEY: Gentlemen, our speaker this afternoon has stood on this platform many times. He is a rather versatile individual, and previously has appeared as an expert in Ordnance modification. Today as Chief of the Procurement Group of the General Staff of the Army he will discuss policies, plans, and procedures for military purchasing and contracting. As an honorary Doctor of Science, conferred by his alma mater, Lafayette College, I take great pleasure in introducing Doctor John K. Christmas, currently Brigadier General, United States Army. Dr. Christmas.

GENERAL CHRISTMAS: Thank you very much, General McKinley. I hope I can live up to that.

I am up here under false pretences because this talk, as you probably know from your schedule, was supposed to be given by somebody else. These emergencies do happen. We are sorry up in our group that it did happen and that you have to have a substitute and not even a first-grade substitute for the instruction you were going to have.

I judge that you have had a lot of very high-level instructors down here to instruct you in at least four-syllable words, such as simplification, collaboration, standardization, and all that kind of thing. I thought maybe I would take a different approach to this subject. In other words, after you get through with all of this stuff up on the global and staff level, somebody has still got to do the work. So I thought maybe you would let me talk on that subject, because it is something I know about. At least, I know something about that and little about the other. I have made a few notes and will attack the subject of procurement from that standpoint.

I am informed that Admiral Ring yesterday gave a very fine talk on the general subject of coordination of procurement and the procurement work that is going on in the Munitions Board. Therefore I am not going to touch on that subject except very briefly.

To get you into the spirit of what I am thinking about I would like you to listen to a little quotation as a basis of this sermon. The next time you go to Union Station, if you haven't already noticed it, look up at the front of the building. On the left side, carved in stone, are a lot of wise sayings that I am told were selected by former President Elliott of Harvard. On the left side of the entrance it says as follows: "He who would bring home the wealth of the Indies must carry the wealth of the Indies with him. So it is in traveling. A man must carry knowledge with him if he would bring home knowledge."

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That is taken from Boswell's "Life of Johnson," written several hundred years ago. It applies very particularly to the subject of procurement. You have to know what you are going after if you are going to bring home anything.

Now, let us first see what the mission of procurement is. The whole reason all of us exist and are fed and housed at government expense and so on is to win a war; that is, all of us who are not fighters, and who for various reasons, are back here in procurement. There is only one reason for us, and that is to get weapons and supplies to the fighting men.

The reason I take the trouble to emphasize that is that we might very well forget it, because the human mind is conveniently arranged so that we forget unpleasant things and remember only the pleasant ones. Already many of us are forgetting. You can see, in writings and in talking to your friends, that we are forgetting the troublesome days of 1939, 1940, and 1941. Everybody is thinking about 1944, when all you had to do was turn a spigot and supplies came flowing out just like water in the bath tub. Nearly everybody has become interested in seeing that all the forms are of the same width, the same color, and so on--the mechanics of procurement. It is the mission of procurement to get some stuff to a fellow who needs it awfully badly to win a war. Everything else is a means to that end, not the end.

Now, another thing comes up. Most of us have experienced one war and a few have experienced two wars. In my opinion, for lack of a better term, we might call World War I and World War II perfect wars, gold-plated or fur-lined wars, where everything was done according to the books. An outfit didn't sail until every suspender button was in place and everybody had the right kind of collar ornaments. There was plenty of time to lay out factories or change the plants over; appoint housing directors, and so forth. Everything was just cozy.

It is my personal opinion, and I am sure of some of you, from what I have read in the papers--you don't have to have access to any secret documents--that we must realize that some of these potential enemies of ours have gotten smart, or might get smart and might learn enough to hit us first without warning. If that is so, you are not going to have a fur-lined war. You are going to have to get out and procure by digging in, and not by being a perfectionist.

It is for that reason that I have taken as my topic today not the refinements of the procedures and the techniques at the top of our Armed Services in a perfect war, if we are lucky enough to have one, but the "grass roots" approach to getting the article that must be had, mentioning

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some of the points and difficulties. Then, if you don't have time to do a perfect job, you just have to cut out some of the refinements—to take a different approach perhaps to it as though next time we will be in a situation like Robert E. Lee or somebody else, who had to do a job with inadequate means.

Instead of talking to you from organizational diagrams and on theories, which kind of talk is very hard to follow if it is not given by somebody who is an expert at it, and I certainly am not, I thought we would take an actual article if you will bear with me. Let us just get our imaginations going like children listening to a fairy tale, each one of you and you and you. War has just been declared. Somehow you have landed in a job of procurement. They have said, "He has been at the Industrial College. Put him on that. He knows all about it." You have just arrived at Detroit. Your job is to get medium tanks for the Army. Imagine you have just landed in a plane at the Detroit airport; you registered for a room at a hotel and you are going to work.

What are you going to do? Well, you probably have never seen a medium tank. Maybe you would like to get a handbook and see a picture of one.

Then you get on the wire and call up somebody down in the Ordnance Department in Washington and say, "I would like to have the specifications for a medium tank."

Well, maybe this fellow will say, "We are working on this thing. It is up at such-and-such a committee being worked on."

You say, "Oh,". "We can't wait for them."

Then perhaps you get on a plane and go down to the proper arsenal. In Detroit there happens to be the proper arsenal devoted to combat vehicles. You go down there and you find that they have drawings for the latest type of tank.

You want to know how many drawings there are. You haven't been in that business very much. Colonel Crawford, the C.O. out there, takes you down to the engineering department and shows you that particular model of medium tank, which happens to be currently fashionable. He shows you a pile of five thousand drawings. These are drawings made by the Ordnance Department. That doesn't include the drawings for the starter, the engine, the speedometer, radar equipment, and all that kind of stuff.

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You ask him for a set of those drawings. Well, that takes quite a while. He says, "I don't have all the prints. We have some of the brown prints, but not all the blue prints." You would be lucky, let me tell you, if the drawings were all there. Maybe they are under revision—changes being made on them. Maybe the Ground Forces have found that they don't like the way the gun handles and they want to make a change in the gun mount. The Signal Corps wants to put in a new radar sight. So the Commanding Officer is going to temporize with you and say you can have three thousand of these drawings next week, but two thousand of them are under revision.

Anyhow, you have gotten things stirred up. They will have to come through with something to give you. You have received a pattern, which most of you perhaps think of as a specification. Seldom is there a specification written for as complicated an article as a tank. The specification consists of a large group of drawings. Each drawing, if necessary, would have a reference to one or several specifications saying what kind of steel goes into the track, what kind of rubber goes into some of the parts, and so on. Anyhow, you have gotten those fellows going.

Now, we will assume that you are to find some place to make it. Well, if you are lucky, there will already be a plan out for the medium tank for half the capacity, let us say, of the Buick Company. That Company has been assigned to the Ordnance Department to make medium tanks. That is if you are lucky. If you went out today, you wouldn't find anything like that. You would probably find on the same plane with you, if you are from the Army, a couple of go-getting naval captains and a couple of go-getting Air Force fellows. They probably are already at the Buick plant when you get there. Anyway, you have to fight for your share. That is the way it is today. It may be that way next week. I don't know when the next war is coming. But I understood from the service schools that I have attended that we should always prepare for the worst. Then if we get a break, that is velvet and we get a distinguished career.

So you go out now to find a place to make tanks. You know from the late war, which you have studied, that the automotive industry did a good job. You will probably find that Buick will do it again. So let us assume that you win out over the Navy captain, that you have persuaded him to go someplace else; that the Air Force fellow's taxi broke down and you got there first; and you have gotten the Buick people signed up, and they say, "We will look at it."

The next thing you have to decide is something that is very fundamental, on which you probably have had lots of arguments down here. We are assuming now that you have made a sale to Mr. Curtis, the President of the Buick Division, that this very difficult job is one he can handle and that he will undertake it.

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Now, what are you going to ask him to take on? Remember, in time of war these firms don't have a sales department; they have a sales-resistance department, because there is much more business than they can handle. It isn't any fun for them anyhow. But you have convinced him. Now you have to make up your mind: is he going to make the whole tank? Are you going to make a contract with him for the complete tank? This thing has about 25,000 parts. Is he going to go around and buy the wheels, tracks, paint, radio sets, and all that kind of thing? Or are you going to procure it by bits and pieces?

I am not trying to be funny. Whatever way you do it in the first place depends on what kind of thing you are making. Second, if you pick the wrong method of doing it, in lots of cases you won't get any production, because if you decide to break the tank down into about fifty, or a hundred, or fifteen hundred different pieces and make little bits of contracts all over this country for those parts, you are going to have to set up schedules to get all those things flowing into your place and getting them all to fit. You are going to have to build an awfully good team and train them to do that.

So, speaking of the category of complicated ordnance, with which I have some familiarity, I would try to get him to take as much as he could and deliver the tank ready to run with five gallons of gasoline in the tank, as you get with an automobile. But it is not likely that he can or will take the whole job.

There are other types of equipment where this rule does not apply. So all I can do is to refer back to the old proverb, quoted earlier, that the more you know about the job when you go out, the better decision you can make.

You now have decided, I assume, to get as much of the tank made under that one strong management as you can. You talk to the management about building the tanks. There is a group of men there who are skilled in making other people work and in getting results.

Now, they are going to say, "How many of these do you want, Colonel?" You phone down to Washington. They say, "We haven't got the requirements. They are working on that. They are sitting up nights in the Pentagon."

So the chances are that if you are a selected officer, you won't bother about that. You will guess from what you know about the late war that you will want at least ten thousand of them. So you say, "Let us get ten thousand and let us hope that we won't miss it too much."

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He is going to have to decide whether to do it all in one building or whether he is going to ask for more buildings. So there is another thing that he is going to want to know more than the number and that is the production rate. He will want to know if it is to be a hundred a month. If it is a hundred a month, he can do it all in one building. If it is two hundred a month, he will have to put a wing on. If it is three hundred a month, he will have to put two wings up.

But it is not just buildings that he is going to be concerned with. They are just shelter. He has got to have machine tools. He looks at your drawings and says, "I have machinery to make this number of articles a month; but if you want three hundred, I have got to get more tools. I have to have some new, special machinery," and that will take nine to ten months to get. You have to tell him the rate. The chances are you will have to guess at that figure too.

So now you have told this man how many tanks you want. You have told him the rate. You have told him you want him to make as much of the tank as possible. Probably he will make it all except the guns and the radio set.

You set up your purchase policy. You are going to do it by paying that experienced management to deal with six or seven hundred subcontractors. You are going to pay them to settle or avert labor strikes, to hire scheduling and transportation people, draftsmen, and all that kind of thing. He is going to do that for you. He is used to doing it. You are going to pay for that.

You probably will have to make a cost-plus-a-fixed fee contract or one of those other types, because he has never made tanks before. If he charges you a fixed price and is smart—and he is or he wouldn't be there—he will charge you the outside figure, which is more than you should pay. You don't want to pay that, so you have to pay him the actual cost and a fee.

Now, to get down into that you may have to get yourself a lawyer, an accountant, and some other people who are contract specialists. The government's methods of purchasing and procuring are complex. The book of rules would probably be as big as the New York City telephone directory, but reading not nearly so interesting. It has in there all the rules and regulations for an orderly, legal, businesslike procedure.

If you are lucky, that book would have been canceled or modified by some emergency legislation. But it may be that the next war will come so fast that we still will have to follow that book. Then we will have to decide whether to follow that book or to get the tank. I can't give you any advice on that, but that situation might come up.

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Then you have to arrange for government-furnished equipment. Even if you are lucky enough to get a complicated item like a tank, an airplane, or a battleship, that is the great bulk of it, made by one strong management, there will be parts on it that are secret or hard to get or that are rationed. So you have to arrange for them, for things like armor plate, radio sets, and radar. There will be sure to be in any fairly complicated item some government-owned equipment to arrange to furnish that way.

So you have to go perhaps to another department, to the Navy, to the Signal Corps, to the Air Force, to get contributory essential parts to go into this thing, which you can't deliver to your friend overseas until it has those things on it. If you don't have to go to the Navy or the Air Force, you may have to go to the Signal Corps for radio and to the Engineers for an accessory or something else. It takes a lot of arranging, because they have their own fish to fry too. That radio for that tank may not be their most important thing. It may be that radar for the Air Forces is their biggest problem. So you have another fight.

Now, on the facilities—and please bear in mind that facilities include that most important item of machine tools. Those Buick buildings are not worth anything except to keep the rain off. When you get out to this hypothetical Buick plant, there will be a lot of lovely buildings there. They are not worth anything except to keep the rain off you, except for the tools in the tool room. That is the place where they make jigs and fixtures. The rest of that stuff you don't want. You can't use it to make tanks. That stuff is there for one purpose only—to make Buicks quickly, cheaply and well. And when they are good at that, they are mostly special and they are no good to you. So you get a truck and move it right out in the yard and put a tarpaulin over it. Then you will be disappointed. You have a million square feet of floor space and nothing in there.

Then you have to get a list from the manufacturer of the tools he wants. Then you come down to Washington to see if you can get your share of the machine tools that have been put in storage as war reserve. There you run up against your colleagues from other services and bureaus, maybe friends with whom you went to the Industrial College. You may have to outmaneuver them. Then when you get through that chain, you go to the machine tool people in the War Production Board if we have one. It takes time to set one up. You go there and try to get your machine tools.

You have to get financing. General Foster is the man, I understand, to go to and talk to about that. This private man isn't going to put his money into this thing. You can't blame him. He may put a limited amount in if the product is something that he is interested in in peacetime.

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But by and large Uncle Sam is going to "pay the freight." It is a complex and technical matter to do that. I am not going to go into that, but that is one of the first questions that will come up.

If war came today, as we are postulating, you would have to get materials by the method that I heard General Knudsen described as having said at a meeting in the first part of World War II. They had a number of meetings to acquaint people with what was called the Controlled Materials Plan. That was a very complex but very useful plan for seeing that materials got to the right places.

Various lecturers had talked about the forms and the methods used in the plan. When the meeting was about over, the way this was told to me, a man in the back of the room who had worked for General Knudsen in a motor factory said, "I don't quite understand that, General. Do you mind telling me simply how you now get materials as compared with before the war?" This is the quoted answer of General Knudsen: "Joe, you just get them the same as you did before. You go out and scratch like hell for them." That is the way you are going to get materials in the future, in my opinion.

But your prime contractor can help you to get subcontractors. We will say that this is a good spring manufacturer. He will know a lot of good sources. There may be some special springs that he won't know about in this tank, something that is new. He has never heard about it. But he knows there is a fellow down in Pennsylvania who has made some of these in peacetime, and maybe he knows how to make them. He may have to help you to find sources.

Well, now, let us assume that everything is cozy. You have your contract, which for a deal like that may be quite thick. The average man might not understand all the words in it. He would have to have a lawyer. You have all your "whereases", as the boys call it at the shop level. You have your drawings, those five thousand drawings. You have your machine tools in there, and some labor trained. But you as contracting or procuring or purchasing officer are not through. You can't sit back and smoke and wait for that promotion and so forth, because your work is just starting. You have expediting to do. That is what General Knudsen was talking about. That is when you go out and get the stuff.

You may have a piece of paper from the War Production Board that says you are entitled to a thousand tons of bar stock. But that is just a piece of paper. You have to get on a train and go down to the steel mill and see this, that, and the other fellow. You try to get there before some other fellow has taken this foreman out to dinner or something and gotten that stuff. I don't have to tell you fellows about that.

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You know all about it. But that is the way it is done. That is the way it is done in competition. That is what made American business. And it is not such a bad thing to get out and scratch a little.

We will assume that you have gotten this far. Then you are really going to have a lot of other worries. There are the engineering changes. In Detroit at the peak on automotive products like tanks they had six thousand engineering changes a month. Those changes came about because the combat people didn't like those tanks, didn't like the way they were being made. After all, they are going to use them. Or it might be because the War Production Board told you that you couldn't use nickel any more. So you had to change your drawings and tools from where you were using nickel and make it carbon steel. Anyhow, there were six thousand engineering changes a month; that was the peak. Changes averaged about three thousand a month.

The manufacturers were very good about that. They do that frequently in their own industry. It is a very hard thing to demonstrate, though. It is a technical thing. And when you get on committees to improve our purchasing techniques, they will stand improvement.

The other changes that will worry you in manufacturing are the changes in requirements. You will be just getting along fine, and you will be getting ready for three hundred tanks a month, when you get a little piece of paper telling you to change that requirement. Then just as you have cut that fellow back and canceled the machine tools, you get another piece of paper almost the next day that says, "Get it up to four hundred."

That is annoying, but it can't always be helped. We don't control a war. The enemy does. We are only fighting it. The fellows at the other end make the requirements. But after you get experience, these things level off. They have their highs and their lows, but you can plot the curve and say "Keep it about here until those fellows level down their thinking." You learn that as you go along. You learn to roll with the punches. You can't put that in the regulations, but you learn it.

I will go quickly over the rest of it. You have to arrange for spare parts. How many of them do you want? Spare parts are the hardest things to deliver, because in the early days of the war you get credit for end-items—they make the headlines. Spare parts are just a word. It isn't until about the third year that you become really interested in them.

Also the manufacturer doesn't care too much. To him the tank is all parts. He makes these parts off drawings. He doesn't care whether he delivers a part in a box with grease on it and sends it to Europe that way, or whether he assembles it in a tank and delivers it that way.

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The tank is just as hard to make as spare parts. He doesn't really care. But you have to make up your mind which way you want them delivered, and how many.

Then there is the inspection. Then you are really in trouble, because where are you going to get your inspectors? A lot of them will be drafted. A lot of them will be of the type who look in a book and, if it says it must have 31 percent linseed oil in the paint, they won't let the tanks go if they have only 29 percent. But you had better let them go if it is 29 percent, if you have a deadline to meet, or you will hear from the Headquarters, ASF, if it is an ASF item, or you will hear from Washington. An inspector must use judgment. So, while the book says that this tank must have so much lead or so much linseed oil in the paint, you have got to use your head. You don't want to let the manufacturer cheat you on that by putting only ten percent of lead in the paint when it should be thirty percent. If you let him do that, he is going to beat Uncle Sam out of thousands of dollars. But if you are going to get twenty-five tanks in a rush and you have to get them on a boat or a destroyer or something, you had better just take them with whatever paint is on them and chase after your money adjustment later on.

Common sense inspectors like that are extremely hard to get. They weren't doing that before. They don't have the advantage of knowing whether the paint is important or not. There may be places where the paint really is important, such as if you are going to store these things some place for five years. But the inspectors that you hire in wartime under the Civil Service rules, even if you could pay them more, would not normally have that kind of brains. You don't get them at that salary, and you can't get colonels or captains.

Then you have to decide about packaging. You can get into more trouble about that. But if you have made this beautiful article, and if you haven't wrapped it all up right and it gets to the Philippines and is just a piece of junk, you have fallen down on your job. There was nothing known in industry about that. They had their own business. They don't have their products lying around like that. We must take the leadership in that. Today we are in pretty good shape in the combined National Defense departments on packaging.

Then you have to decide a lot of other things about deliver. How do you want it delivered—over the road or by rail?

Some articles are very complex, like a tank or an airplane. You have to take the most that this manufacturer will give you. All of them may not make the same contract with you. But, anyhow, you take the best he will give you. So you send the tanks from the factories to some depot

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or modification center in the Zone of the Interior. While you are at it there has been a couple of hundred more engineering changes come through. So you have to buy those new parts and put them in because you don't want your colleagues overseas to get an outmoded article. This is an essential step in production.

Now, if you are the kind of man I think you are you have followed the book only when it was necessary and you have disobeyed the book when it was necessary, and your friend in the combat theater is now getting tanks at the end of about two years—good tanks and enough spare parts. You have done a good job, and I hope the manufacturer is getting paid, because you have seen that his accounts are audited. If he gets no money, he is most likely to stop—don't forget that. If he isn't paid, you had better get on top of that, because that will stop production. If there is no nickel in the juke box, no music. They can't help it. They are running a private corporation and they have to be on their toes and do this for money. You can't expect them to do otherwise. They are not a charitable institution and they are not the Government. The least little thing like that, especially with a small company, will stop them. If they can't meet their payroll, you may have to go down to the bank with the man and help him get a loan for his pay roll. If you will vouch for him, he will get it. However, that is not my specialty. Somebody else will talk to you about that. You will be talked to about that by some expert people.

Now you have done all these things and gotten those tanks over to the European Theater of Operations. So let me summarize very briefly some of the troubles that I think you will have run into.

First, getting the drawings and specifications. I know some of you already are going to ask when this lecture is over, Why weren't some of those ready for the last war? One reason is that it takes skilled personnel to make those drawings and specifications and that takes appropriations and so on. That is one reason we didn't have a lot of them ready the last time. I am old and look at the seamy side of life. I don't think we can allow it to be that way the next time because the enemy is not going to give us this nice warming-up period. That is going to be the trouble. The manufacturers are going to say, "Sure, Colonel. I will make anything you want in my factory starting on the fifth of the month. Where are the drawings?" That is one thing you had better worry about if you get a job where you can do something about it, such as the General Staff. That is one place where you can help.

The other is to find out what the requirements are. It doesn't make so much difference whether they are accurate or not. It doesn't make any difference whether you say it is nine thousand or twelve thousand, because you won't get them until about the third year anyway. So you will

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have plenty of time to correct the figures. So almost any way that you figure requirements is perfectly all right. You don't have to say nine thousand, nine hundred and seventy two. Just use round figures. They are plenty good enough.

Then something that you ought to worry about but that you can do something about is the type of personnel which you get to deal with procurement. I mean both the uniformed ones and people in the other kind of clothes. Don't ignore them. They are an awfully important element.

But most of your new people don't know how to negotiate. That is where a lot of this trouble came from that we had on contract settlement. Contracts were made by fellows who were doing something else before the war. Naturally they made mistakes. So would you, or you, or you. They made plenty of mistakes. So would you if you went out tomorrow morning to make a contract on something that you didn't know anything about. The only way to do it is to have the kind of training that they give in the Army Finance School and in the Harvard Business School, and places like that.

Then there are the engineering changes. I don't think there is anything you can do about them. If one of you wants to achieve something outstanding, you might do it there. I admit defeat myself, or rather we must accept and plan for engineering changes. The important business of the allocations of plants and machine tools is being worked on very hard now by all three Departments.

The last thing, which perhaps is the thing you are most concerned with, but which I tried to say in the early part of my lecture is not to be considered as the end, but merely the means, is all the processes, forms, regulations, and so on that we use. They are complex and they are diverse. There is very skilful work going on there. I am sure Admiral Ring referred to the standardization of our contracts, forms, and procedures, such as, who gets advance payments and who does not. A lot of that is very necessary. It won't win the war for you, don't be misled. I am only speaking for myself. But there is a great field for improvement there, for increased logistic efficiency.

On the other hand it says in the Unification Act, in Section 213, that the Munitions Board is to do certain things to improve procurement to the extent practicable. You will find that ladies' hats, airplanes, and locomotives are not in the same class, because there are trade practices in each field. Maybe you don't want to make the same type of contract with a builder of locomotives that you want to make with a maker of ladies' hats. But that is being worked on very hard, and I think we can lick that. It will make it somewhat easier, too. It won't get you those

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tanks too much faster, but the manufacturer will be less annoyed with you. He won't say, "All you damn Army officers and all your red tape."

Now, you might wonder what is being done about all this. There is a great deal being done. I don't have to tell you that the Unification Act put that on the books, that it is necessary to do something about procurement. If you read Section 213, which is probably old business to you, you will see that it is not put in there in indefinite or general language. It tells the Munitions Board to do a lot of specific things about procurement. Even before this Act was passed, the Munitions Board was doing that kind of thing.

Now we have a Procurement Policy Council, consisting of Admiral Ring, and Generals Powers and Cook, which covers the improvement of procurement in all aspects--specifications, inspection, contracts, forms, advance payments, and contract settlement. In fact, he may have told you that we are working on the basis of making a syllabus where there will be three columns, the way the Navy, the Army, and the Air Force have it, so we can get it all straightened out. That is a big job and it is being worked on by very capable people.

There are two things that I would like to mention. In saying we are doing a lot to improve procurement, one thing that I refer to is that there is a point of diminishing returns on what you do in the way of standardizing forms, procedures, and so on. Let us take an example. You wouldn't want to have a bill of lading as big as a bed sheet because a ship requires it in order to get a full description and then use this big wasteful form for all items of supply in the interest of standardization. In other words, there are differences in the products with which you are dealing. That is the reason why for some 100 years or more, I suppose, our country has had a Bureau of Ships to deal with ships, a Bureau of Medicine to deal with doctors, and a Signal Corps in the Army to handle communications. There is a common recognition by mankind that skills and products fall into certain specialized compartments. The Munitions Board is recognizing that. They are drawing all of us into this work and they are working as one team, to get the maximum standardization and coordination practicable, as ordered by the Congress in the Unification Act. That is being done; it is an excellent thing.

We have the Unification Act to guide us. How nice it is, I often think, that the three Departments are working together so well. I am on a number of those Munitions Board committees, mostly as an alternate. But certainly the teamwork between the Army, Navy, and Air is just as good now as it always was. That means a lot. That is how we won the war.

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Since my time is getting short, I would like to leave with you a few ideas on how you can help. Maybe you can help when you get in a position of authority with those younger men who are going to take over the Armed Forces.

The first thing is that I believe you want to learn to do these things from American industry. Industrialists know how to do them. They did them in the late war better than anybody else in the world. They are doing them better today than anybody else in the world. So get close to American industry. Get to know some of them personally. Get their thinking; talk with them. I think we can learn from them. We had better get them on our side, and thinking our way if it is necessary to convert them, because they are going to do the job.

The next thing is out of my field, but I believe, if you have one of these wars overnight, not one of these perfect, fur-lined, gold-plated wars, we should have wartime procurement legislation right on the books now, all written up. Otherwise you are leaving too much action to the individual, that is, you will have to get that black book out and ignore parts of it. A lot of us are not built that way, maybe not enough of us to win a war. It is much better to have the legislation to look to.

The next one is that you might have the drawings and specifications ready. Those men in industry can make suggestions on that. They can get men and materials and do every part of that production job except get those drawings and specifications ready. That is going to hold them up. Take a little bit of this advice like any minister gives in a sermon. After all, that is what this is. Remember the quotation.

The job of logistics in a modern war is enormous. Personally, I think it is getting bigger. Look at the Table of Organization two years after a war. The equipment for a division costs almost twice as much as it did two years ago. To do this enormous job you must be sure of all the things you have to have, and do the important ones first.

The next one sounds enormous. That is decentralization. Various people have various ideas about that. I am a decentralizer. People are divided up as much on that subject as they are on politics or taxes. But that is my personal idea.

Another thing on which you find a lot of argument, especially where the job is enormous, is this job of specializing. Not all of us are specialists. But we don't have to worry about that, about getting too specialized. I know one big motor company in the United States that has had the same man buying paint for thirty years. That is all he ever buys. But he knows every paint man in this country. He knows the ones that are honest and the

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ones that are dishonest, the ones that deliver on time, the ones that make good paint and the ones that make bad paint. If you want paint, this fellow can tell you how to get it. That is one reason that this company has cars on which the paint stays and doesn't fall off.

So don't be afraid that you are going to be too specialized. You may be a specialist on ordnance, like there are specialists in industry. Industry specializes much more than we do. War is getting more complex all the time, so I wouldn't get worried about being too specialized.

Another thing is to simplify and standardize our purchasing legislation, our purchase regulations, our procedures, our forms.

The last one is one that I told you I believe in but I don't know how to do it. Even in this mechanized age, in buying tanks and building them try to get good people on procurement. It helps an awful lot.

Gentlemen, thank you very much.

GENERAL MCKINLEY: General, in connection with your remark about having emergency legislation on the books, how about this procurement legislation that is before Congress now? I am not altogether familiar with it. How far does that go in answering what you are talking about?

GENERAL CHRISTMAS: I would say that it goes almost as far as we need to go. But it doesn't grant any war powers, as specified in the First and Second War Powers Acts.

GENERAL MCKINLEY: Does it allow negotiation?

GENERAL CHRISTMAS: It allows negotiation in about ten instances, which I think if a war was threatening you could stretch to cover these things that we speak of in the way of standardization and in the interest of efficiency.

GENERAL MCKINLEY: That is what I mean.

GENERAL CHRISTMAS: Let me pick my legal adviser and I think I could accomplish a lot in war with that law. I am not a lawyer.

GENERAL MCKINLEY: Are there any more questions? (No response.)

GENERAL CHRISTMAS, Thank you very much indeed. We appreciate your splendid talk.

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