

Discussion Following Lecture
"Procurement Plans Division, O.A.S.W."
by
Lieut. Colonel Oscar J. Gatchell, O.D.

The Army Industrial College
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Colonel Miles: Gentlemen, as a result of this talk this morning I understand the stock of the Ordnance Department has gone up. One line officer was said to have remarked that he wondered how the Ordnance Department ever got one level headed officer.

We are now ready for any questions you may wish to ask.

Colonel Gatchell: I would like to make one statement before you start the questions. These slides, etc., that I gave you are definitely in the restricted class, so please do not talk about them anywhere outside of the restricted elements.

Q. I would be interested to know where the wastage factors came from? They seem to be a very important element.

A. The wastage factors for the Ordnance Department (at any rate I can speak with surety on that and I think the others too) are based on experience in the World War largely, and they have been studied and studied and studied. In the recent study that was made by Corlett on this G-4 plan, before they started the last war reserve, a very drastic reduction was made in practically all branches except Ordnance and Air Corps. The

Air Corps held out for 30% on planes The Signal Corps, I think, protested very [✓] vigorously to the reductions Corlett put on them I do not know the merits of that case. The Ordnance factors were left practically alone However, the wastage factors are ^{the result} based ~~on actual~~, ^{of} very careful studies of wastage over a long period of ^{based on} time, [^] over a year's time of actual experience.

Colonel Miles: I would like to ask a question I am wondering whether or not reclamation has been considered in arriving at wastage factors I well remember a pile of stuff that I saw outside of Tours in France during the war, material that had been thrown away by troops on the battlefield; must have been as big as the Munitions Building is big, the most gigantic pile of material I have ever seen in my life. It impressed me, and I have wondered if in the computation of wastage factors it would not be the proper thing to set up certain reclamation projects after a few months of troop duty in a given theater of operations?

A. I think they were taken under consideration Of ^{one of the duties of Ordnance Field Service} course, ~~in connection with ordinary field troops~~, in addition to supply, is ~~the question of~~ salvage. I think probably one of the most marked examples of where that might come into consideration is in the question of ammunition. Take a Field Artillery Commander before an intensive action, if he is a go-getter commander, he is going to build up a pretty large stock of ammunition right at his battery emplacements, probably more than he really needs because he is afraid he will not have enough The attack starts and he

has to move forward to a new position, he can not take with him any more than his combat trains will carry, and he leaves behind a large amount of ammunition. I think that happened time and again. Those officers who were lucky enough to be over seas, particularly Field Artillery officers if there are any here, probably know that is true - troops moved forward and left the ammunition behind. The Ordnance had to pick that up, segregate it, and get it ready for issue again. That also brings into consideration the distribution factor, which I talked about Thursday afternoon. The question may have occurred in some of your minds, and I *feared* did not make it clear ~~I do not think~~, as to just how that is applied. I told you it was applied to the first troop requirements on a percentage basis. That is for the purpose of building up stocks in the depots so that when the first month's issues are made you do not strip the depots completely. If at a subsequent period there is a larger troop requirement than there was in the first period, you apply that factor, ten per cent we will say, to the increase. For instance, if you had 500 of an item on the first month and at the third month the troop requirement was 700 you would apply ten per cent to the difference of 200 and increase the stocks that you had for distribution. That is the only time when the distribution factor comes in after the first month. That would take care of some of this reclamation. I know that Colonel Partridge of the Ordnance Department looks on the distribution factor from another viewpoint. He looks on it possibly

as something that might not be necessary, but, on the other hand, you need to have machine guns. For instance, *if* a machine gun breaks down in the front line, it may be repaired by Ordnance mechanics on the line but it is preferable to take it away from the organization and bring it back to the Army small arms repair establishment and issue them another machine gun in place of it, and if you do not have a certain number in stock you could not do that. Looking at it from that viewpoint, a distribution factor is very important. As I understand it, they just considered every source and figured that that was what actually was wasted.

Colonel Miles. The thing that came to my mind is the possibility that due to the short time we were actually engaged in field operations over there that factor might not have come into the picture. As a matter of fact, I do not think it should come into the picture too early because of the fact that it does take time to make those accumulations after the material has actually been wasted. However, in a war of duration I do not think there is any question but what that factor would be an important one. I agree with you a hundred per cent on the question of replacing equipment in kind and not by piecemeal maintenance at the front. I was Ordnance Officer out at Fort Sill in 1922, 1923, and 1924, and we made quite a hit with the Field Artillery - every time one of their guns went out of whack we rolled a new one into place. If it can be done within the limits composed by calibration considerations I think it should be done. Calibration factors I

do not imagine amount to a great deal in active combat, so if we can make a complete substitution of equipment I think it is the best way to do it.

Q. Yesterday I was over at the Signal Corps, my particular item was a radio set. When I looked at their card they had no maintenance factor for either the zone of the interior or the theater of operations. I asked them why, and they brought me out some confidential information. Apparently they had compared it and had set up a maintenance factor for both. The one that went to the General Staff and came back approved they had cut out so as their card now stands it shows no maintenance factor. On this information when it came back was a statement which said that particularly with Signal equipment connected with aircraft the General Staff thought there would be a certain amount of reclamation in the zone of the interior, so that should be figured in. They left it on the basis that the Signal Corps equipment connected with aircraft should have the maintenance factor of the aircraft itself. Then in that particular case I went to the Air Corps people, and they gave me a figure of ten per cent in the zone of interior and thirty per cent, I believe it was, in the theater of operations. From just that note that I saw on there I conclude that somebody has considered reclamation at least in that item.

A. That is true. In figuring the Air Corps wastage they claim that their actual combat wastage would be greater than

thirty per cent per month but there will be a certain number of crashes, etc. within their own lines from which certain reclamation can be made. I believe that the Ordnance Department does the same thing. They figure that from disability of planes either in the zone of interior, or in the combat zone but behind our own lines, they will recover a certain number of machine guns or other ordnance devices that go on the planes.

Q. Colonel, did I understand you to say that you people plan to have the man mobilization rate higher than the supply rate in order to spur you on?

A. I did not say that we planned that - I said that I was not too strong in trying to request the General Staff to come down to meet the actual supply rate because I think it might stifle our ambitions a little bit in procurement.

Q I should like to make an observation, if I may be allowed to do so, and state that the most awful position that a supply officer can be put in is the position of being required to supply and not be able to get what he is supposed to supply. As soon as I saw those two curves on there I bethought myself of a lot of Quartermaster officers heading up to Walter Reed Hospital on account of that.

A. That is true (laughter) - I do not mean that they are crazy - but let's look at it from this viewpoint. Supposing you held down mobilization of field artillery units based on ammunition supply. If you were a commander of a division or corps

or an Army and there were enough weapons to equip a certain number of regiments, say twenty regiments of Field Artillery, but you only had ammunition supply theoretically at forty rounds per gun per day to take care of ten regiments, would you rather have ten regiments with full ammunition supply or twenty regiments with fifty per cent of the ammunition supply? Personally I would much rather have the latter because it gives you more flexibility in tactical distribution of batteries, etc., and it gives you those guns which you could in a crisis have all firing at once if you had to, even if only for an hour or two hours, whereas if you only had half the number of guns with full ammunition supply no matter what the crisis you could not use but that number of guns. For instance, on this anti-aircraft business, suppose we held down the mobilization of anti-aircraft regiments based upon the height finder - it would be wrong, in my opinion, because even if you did not have any kind of fire control instrument you would improvise something if you had the guns with troops out there in time of an emergency. I do not think you can come too far down to supply; I think it has to be a balance between the tactical requirements. It has always been my opinion that there is only one way to make a mobilization or strategical plan, or whatever it may be, and that is to make an honest to God G-2 estimate of what the situation is, of what is liable to be brought against you, what you think you need; make a G-4 estimate of what you can supply; then make a G-3 determination somewhere between the two.

That is talking in awfully broad language but I think that is the general rule we ought to follow. Does that make clear how I feel about it?

Q. Yes sir.

Colonel Miles: I would like to draw attention to one thing: namely, the tendency to apply factors of safety, where applied, and who applies them. If the General Staff is going to apply factors of safety on its side and the supply departments are going to apply factors of safety, somewhere there has to be a meeting of minds. Can you say a word about that - whether there is real coordination in the application of factors of safety?

A. All these rates of fire and these maintenance factors G-4 very drastically reduced, particularly in the Signal Corps - the wastage factors. That was probably arbitrary on the part of G-4. The Signal Corps protested most vigorously, and I do not think there was a meeting of minds on that. The Signal Corps said: "After all, it is our responsibility. If these things run short we are the ones who are going to be ^{blamed} ~~whammed~~. However, if the General Staff says it is going to be so and so, they ought to take the responsibility." If there is a shortage, theoretically the General Staff ought to be responsible, but practically when the time comes I am afraid the Signal Corps will be holding the bag. However, there is an attempt at having a meeting of minds on the thing. When it comes to applying the safety factors they do pyramid it, there is no question about that,

but on the other hand I have a sneaking feeling that a great many of our production schedules are optimistic and that we may not be in as good a situation as we think we are when we consider labor and raw materials. In the conference we had with General Motors a couple of weeks ago, Mr. Knudsen and his crowd and Mr. Johnson did not seem alarmed at all at the \$750,000,000.00 load that was being put on General Motors. They said that it was only twelve per cent of their capacity. I asked Mr. Johnson if in the preliminary studies they had made of this thing they had considered the difficulty of getting machine tools, etc., to carry on this program. He said no, they had not. They assumed that the Government would give them priority and they would get them. Well, maybe they would get them and maybe they would not. I think a whole lot of even the accepted schedules, where a manufacturer has signed on the dotted line, have been made with a pretty optimistic viewpoint. The thing that I am most worried about in all of our procurement planning activity is whether or not these production schedules are going to be realized when the time comes. I think that the application of these safety factors may compensate that to some extent so that by and large the result would be about balanced.

Colonel Miles I agree with you. I know what optimism of manufacture can do. The hardest thing you have to do in dealing with those fellows is to keep them on the ground, even conservative New Englanders.

Q. Along the line Colonel Gatchell was talking a moment ago, it seems to me that that shortage would be taken care of with the number of troops within the theater of operations not actually in combat. As I get it, those figures are based on every gun, etc., that is in the theater, are they not?

A. Those curves that showed the number of regiments that might be equipped and maintained were based on the theater but the other curves, as I explained, were taken by applying a ratio of the requirements which were based upon both the zone of interior and the theater of operations against the requirements of the 1933 plan; applying that same ratio to the man power of the 1933 plan, so theoretically it corresponded both the zone of interior and the theater of operations. Another point I might bring out along with that is that the zone of interior requirements are based upon training requirements, which very probably could be materially reduced. You do not have to have all the guns for a brigade of field artillery to train that brigade. If you have a regiment you can go a long way toward training a brigade and so on down the line, so I think that there is a safety factor there and when the time actually comes the materiel issued to the zone of interior will be reduced in order to try to keep up what is needed in the theater of operations.

Q. In connection with these safety factors, it looks to me, from what little work we have done so far on this problem, that we sort of over extend ourselves in trying to compensate for theoretic conditions. For example, we have an item of ammunition

This is more on the allowance side but I think it is a safety factor. On this item of ammunition we had, I think, four different expenditure rates: one if the gun were fired on the ground; one if fired in combat; one if fired as an anti-aircraft weapon; and one as an aircraft weapon. I think the rate of supply for the combat vehicle fired on the ground was ninety-five rounds per day; the combat field was eighty-five rounds, a difference of ten rounds. That difference makes two sets of computations and I would like to know just how anybody can determine such a thing as that?

A. I will grant you that there is a lot of refinement in these requirements. The method is prescribed by the General Staff I think that when the time comes and the emergency is on us that the troop basis as it actually develops will be different than anything we might plan. We may have a dozen color plans and everything else but what actually materializes is going to be different and on M-day we have got to start in and practically throw everything overboard. Maybe you can take the plan that nearest approximates it, but you have got to make a lot of approximations and when that time comes there are going to be a lot of straight line curves used and a lot of arbitrary factors applied to get something in a hurry. In peace time when we have the time to do it, possibly these minute details are desirable. It is a wide open field of conjecture on whether or not we are too detailed in our requirements. I do not know. When it comes down to those two particular rates you were talking about, you were speaking of machine guns, were you not?

Q Yes sir.

A. Those rates of fire were worked out in the War Plans Division of the Ordnance Department with a great deal of labor on the part of Colonel Partridge and in close cooperation with the combat arms themselves, and those are the figures the combat arms themselves say they want. It just so happens that the Cavalry independently on fifty caliber machine gun mounted in an armored car arrived at eighty-five and the Infantry for a ground type arrived at ninety-five. I do not think there was any collaboration between them, and possibly an average of ninety might be struck.

Q I noticed another case. This was Field Artillery ammunition. I think the rate of supply is figured on the basis of forty rounds per gun per day for this purpose - I got every figure under the sun. World War experience, I think, shows a maximum of seventy rounds per day, another a minimum of five, an average of around thirty; the Chief of Field Artillery wanted sixty, and I do not know how many other figures. Which one of that bunch is right? In other words, there is so much difference on what you assume to be right I do not see much point in trying to apply one or two per cent for this, that, or the other factor.

Colonel Miles When we get to talking of the practice of safety I always think of what the British did during the World War on loading of ammunition. They had tremendous factors of safety in their ability to load ammunition. In other words, for certain calibers they had two or three times as much capacity as was needed

to meet the supply factors that had been arrived at as a result of war experience. The reason for that was that frequently they were called upon to supply ammunition for pushes which came up on the spur of the moment or came up as the result of war council activities which called for very great amounts of ammunition for limited periods of time, and if the factors had been set up and operated on the basis of the supply factors they just could not have met those situations. On the other hand, the enemy frequently attacks at unexpected times and the consumption of ammunition may be very very great, therefore you have got to have the factor of safety in your ammunition supply or you are going to bog down. Another item which should not be forgotten in arriving at factors of safety is the tendency of loading plants to blow up. I think I have mentioned before the fact that on October 4, 1918 the only large ammunition plant we had in the country blew up. What the effect of that blowing up would have been had our military operations proceeded on into 1919 is pretty hard to determine, but it would have had a very great effect. And so I am inclined to agree with Colonel Gatchell that factors of safety, even though they frequently pyramid, are going to be found to be necessary, especially when it comes to ammunition supply.

Colonel Gatchell. I might say concerning this forty rounds per gun per day, about seven years ago I spent four months in a detailed study of that very thing. I went all through what was known as the "British War Book", a big book, a mass of details gotten out by the British Government after the war. I got the best figures I could

get on American, French, and German expenditures of artillery ammunition. After four months of intensive study I came out with almost forty rounds per gun per day as the best average. There were times when a month at a time (and in the *Somme* offensive I believe over three months' period) they were firing way above that, but over a years' time, over a long period of time it averaged almost forty rounds per gun per day. Remember this is based on every gun in the theater of operations, guns back ^{their} are not firing at all, and it is based over a long period of time. I think every war we have ever had has demonstrated that ammunition expenditure is higher than anybody ever thought it was going to be. I well remember about six or seven years ago (it must be on file here in the Industrial College somewhere) I attended a lecture given here by a German General Staff officer who had been on the German General Staff before the war and during the war and was still on it at the time he talked. In his talk he outlined the supply system in Germany. He stated that Germany realized prior to the World War that this war was coming sooner or later and that the General Staff had drawn up requirements for ammunition that they wanted to set up in war reserve but the civilian element of the German government had cut them about three-quarters; they only allowed them to build up a war reserve of about three-quarters of what the General Staff had estimated. He said if they had had the ammunition the General Staff computed the war would have been over in two months, that they were actually stymied in their drive on Paris by lack of ammunition. Whether he is right or not I do not know. I think that

is in the records of the Industrial College. I remember it as a most striking statement. Of course, the French reports are full of comments where they could not do this and could not do that because they did not have ammunition. To pull down ammunition I think would be very very dangerous.

Colonel Best: Colonel, I want to jump into problem 18, which will be evaluation of The Assistant Secretary of War's office, and I want to ask two types of questions which I know will be in the mind of each student when he takes up that problem. First, with reference to control in current procurement, what control of selection as to procurement of these items, such as gauges and machines, for war reserves are you going to exercise?

A: In current procurement, assuming we have money in peace time?

Colonel Best: This bill passed in Congress, what control your office will exercise over the supply branches in the selection?

A: I am sorry Colonel Harris is not here. I would like to have him answer that. I am afraid I can not answer it in too much detail because I do not know how much will be considered as confidential. I can say that since last November we have been constantly working on programs of various money values of what we would use money for - for production studies, for final inspection gauges, for manufacturing gauges, for jigs and fixtures, for dies and punches, for special machinery and machine tools to rehabilitate and round out our existing Government establishments. Several of those programs have

been prepared, and I can say this much* that they are based upon estimates submitted by the branches themselves. We in our studies show their full estimates; and then in our judgment ~~here~~ we have given priorities. This six million eighty thousand item that appears in the President's message was the result of a recommendation by the Planning Branch. The General Staff consulted us before it was submitted. Further than that I am not at liberty to go.

Colonel Best: I meant particularly just details - say the bill is passed, say they cut it off at every mile, what action will your office take in relation to that?

A. I do not know that I can answer that. That is going to be a matter for The Assistant Secretary of War himself, probably, to determine. However, I think the Planning Branch, too, will have a very active part in that. It so happens that as passed it is largely ordnance, but in the total estimates other branches of the service were involved too. I think there will have to be a very active supervision. I do not think ^{the Planning Branch} they will operate but I do think that the policies and the general objectives will have to be laid down by The Assistant Secretary's office. I am only predicting, and I do not think I can talk any more about it right now. I do think there will be very close cooperation and supervision by the Planning Branch - there will have to be

Colonel Best: I want to jump now to war status. I put on the reference list of problem eighteen a study made at the Army War

College, "Procurement in War" They showed how in every war the Revolutionary War, Civil War, Spanish-American War, and World War, in the different supply branches of the Army sooner or later in the war a centralized control had to be established over those branches. Of course we have now control over the supply branches by The Assistant Secretary of War, but the point in the student officers' minds is going to be: how positive will that control be in war? Do you think that control will be so strong as to obviate the necessity of this controlling agency coming in and combining the supply branches again? That is a shot in the dark - I mean that is going to be the question when they make the evaluation.

A. I think the Industrial Mobilization Plan is now written with the War Resources Administration and the other superagencies on down the line exercising²¹ all the control that is necessary. I think the control in the Allocations Division of The Assistant Secretary's office in spirit complies with a P. S. & T. or any other centralized procurement agency. I do not think personally that we need anything more than that. It may fall down, but to me the plan seems ~~damn~~ good.

Colonel Best. That question is going to be in their minds when they make this study.

A. Any comment they have to make will be of great value. They can go at it with open minds. Maybe I am talking too much from loyalty but I think it is a very good plan as it stands

Colonel Scowden Concerning the World War, what happened in '17 and '18, the historical studies here have certainly brought out

the fact that the supply services did not know their requirements, one reason of course being the General Staff military program changing, but even at that the supply services were not sure of their requirements and there was no cooperation among the supply services as to which service should have priority. The result was that there was chaos and confusion. The P. S. & T. stepped into the picture. However, I believe that situation will not occur in the next war. We have all seen how practically Colonel Gatchell has presented the planning that is being done and how right now the Army has been able to go to Congress with their requirements, twenty-six million dollars or something like that. The Army has gone to Congress with their requirements worked out, they know how much money they want: six million dollars for special machinery, two million dollars for ammunition. That has all been broken down and studied. I think everybody in the supply services feel that each has been consulted, the interests of each service have been taken into consideration, and that the program recommended by The Assistant Secretary of War is fair to all services concerned. I thought so when I read the recommendation. It seems to me that the supply services are now in a position to go with a united front to the General Staff and to Congress with what they want and how much it will cost. I think that is a step in the right direction.

The other comment I would like to make is about mobilization. One of the committees brought out the fact that seven or eight Mobilization Plan revisions have been made since 1921 and with each

new revision of the plan the manpower rate and the supply rate have gotten closer together until now we see that they are very well coordinated. Although the General Staff for many years would not recognize the influence and the importance of supplying troops mobilized I think they are doing it now, it is because of the very effective grasp, etc., which has developed in the Planning Branch, as Colonel Gatchell has presented here. He said at the beginning of his talk that they were groping in their planning but I think we will all agree that it is pretty intelligent groping.

Colonel Gatchell: I might add one more comment to that, that this six million dollars does not represent anything like the total requirements, it is less than ten per cent of what the branches would like to have for jigs and fixtures, etc. It is a boiled down program every time. They give a limiting figure, then we have to go in and pick the highest priority. Talking about Best's question again, that two million dollars in that program for ammunition, the General Staff probably will be the main influence, if not the exclusive influence, in determining for what particular items that two million dollars will be spent, but we have submitted to them studies that we have prepared here, based on information we get from the branches, in which we point out very clearly where the glaring deficits are, and I have reason to believe that they will consider at least what we have said. But after all that is pretty close to a tactical decision as to what they think is the most urgent to build up. However, there will have to be overhead supervision of the Ordnance Department as to how they will spend

that two million dollars. I do not think they will be allowed to spend it as they see fit necessarily, although recommendations will go a long way. There will be supervision, largely with the General Staff I think more than our office.

Speaking of the P. S. & T., I am not very much in favor of the P. S. & T. I happen to have seen too many incidents that happened in the P. S. & T. during the World War as it was created. If you have a P. S. & T. that is made up of qualified personnel I think it will work but I know of one instance where ^{steel} picket line was ordered and they supplied submarine cable because it was wire. I know of many other instances like that where somebody who did not know anything about the problem had to make the decision. I think if the war had gone on much longer not only would this bad explosion have damaged things but I think the P. S. & T. would have gotten into such hopeless jams that we would have gotten into a terrible mess

Colonel Miles' P. S. & T. - Peek, Snoop, & Temporary.

(laughter)

We are all indebted to Colonel Gatchell for this above-the-shoulder talk. I think he is not only solid on the ground but he is pretty well set up above. With that remark, and extending you the thanks of the school and faculty, Colonel Gatchell, we will close this meeting.