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TRANSPORT IN MODERN WAR

26 February 1951

GENERAL VANAMAN: Good morning, gentlemen. This is one of the so-called "across the board" lectures, designed to promote thinking or to project thinking. Now we at the Industrial College--staff, faculty, and students--are engaged in the business of thinking. But we must enter into this business with our eyes and our minds wide open, lest we stumble and trip and fall over some of our own prejudices.

General Knerr has recently briefed the President, the Secretary of Defense, the Secretaries of the various departments, the Chiefs of Staff, and the other top officials of the Department of Defense on some of his thinking. We are greatly honored to have him with us this morning to brief us on some of his thinking. General Knerr.

GENERAL KNERR: General Vanaman, Gentlemen: On occasions such as this I am reminded of an incident that took place close to 50 years ago. I was a member of the Honor Guard of Midshipmen at the Naval Academy sent out to be present at a speech by Samuel Clemens (Mark Twain). He went through his speech smoothly and then it suddenly occurred to him that there was an Honor Guard down in front. He was a fine-looking man. You probably know his picture, at least--bushy white hair, horseshoe mustache, a soft collar, and an immaculate white suit. He looked down and by way of advice said, "Always try to do the right thing"--looking right at us--"You will please a few and astonish the rest." That bit of advice has always been useful. I have found that any time you approach a subject on which you are quite sure the majority of people will not agree with you, at least you have a clear conscience in presenting it.

Now this morning I would like to present for your thinking a plan for bringing to bear the military-industrial might of this country without stationing very large armies overseas. That is my objective. By way of approach I think some of you have noted that the great American public is inclined to take hysterical attitude toward the international problems facing us at the present time and, as a consequence, we have been steadily losing a psychological war.

As you all know, psychological warfare is an extremely useful form of warfare. Hitler gave us some very excellent object lessons which we have more or less chosen to ignore. It is understandable that we should not wish to use those methods, but the fact that we do not recognize them is certainly inexcusable. Almost the same pattern has been steadily used, as no doubt all of you have noted, by Stalin. His approach is typically that of the oriental who resorts to mysticism, chicanery, and indecisions

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of all sorts with the hope of wearing down his opponent to the point where he may make a mistake that can be seized upon to advantage. You have seen it happen time and time again.

It appears to me that this is the only form of warfare the Russians can bring to bear upon us to gain as much from us as they have gained in their contacts with other countries. Certainly Russia cannot depend upon its industrial capacity to compete with ours. As you all well know, our ability to produce five times more steel, ten times more oil, seven times more electricity, and so on, makes it quite impossible for the USSR to conduct a modern war to a certain victorious finish.

I think you have seen evidence of the fact that Russian transportation is extremely poor. While I was in Russia only a few days--therefore an expert on the subject--nevertheless all that one can read on the subject confirms the fact that north of the 45th parallel, where they must operate, their transportation system is terrible as compared with our own. In short, there is no comparison.

Transportation is the nerve system of modern war and modern industry. It is the means by which existing industry can be rapidly expanded or military power brought quickly to bear. It has always seemed to me that the basic law of physics,  $MV^2 = E$  likewise applies to the conduct of warfare. Most of all industrial power, machines, and men, no matter how superior, would mean little if dead on their heels. It is the velocity with which power is applied that counts.

With that thought in mind, would it not be the smart thing for this country to fashion its means of military transportation, its military power, its influences, and utilization of time and space in such a manner as to counter the mass of humanity that Russia and its oriental friends have at their command? Such is not difficult if we approach the problem with wide-open minds, free of last wars' fixations of any sort. By taking advantage of all the new weapons and the new methods of communication and of transportation, we have a terrific advantage if we choose to use it.

I was somewhat disappointed the other day in talking to members of the Munitions Board who called my attention to the fact that some 87,000 measurement tons of supplies and equipment were required to transport one division overseas. I don't think that is the way to approach the problem.

Our field of play, you might say, is the entire world. If we are to make the most of our resources, and time and space, we have to plan our military system to fit. Transportation again is the key to the whole business. Instead of trying to put a division ashore with 87,000 tons of equipment and supplies and 19,000 tons more a month, let us take full advantage of these new recoilless weapons; let us copy some of the things

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out of the books of the Koreans and the Russians, in the way of self-borne loads. Instead of a heavy truck on a muddy road let us see if it is possible for each soldier to transport across country in a hand cart at least three days of food and fire. Again, if we are to get to any spot in the world with sufficient power to maintain ourselves in the face of overwhelming humanity, let us plan to put it ashore as one package. Probably all of us have had some sad experiences in the last war of having our well-trained war machine torn apart, loaded piecemeal in convoys, sent overseas, and then spent months and months putting it together again and retraining it.

All right. Here is the problem: We have training bases throughout the United States where we are industrially and technically capable of training armed forces far superior to those that can be brought against us. Let us avoid the mistake of attempting to match the enemy man for man, weapon for weapon. Rather let us have a mass of power that can be applied rapidly.

Five or six years ago, the former owner and operator of the Leviathan, the President liners and the United States Lines, conceived the idea of giving mass transportation across the sea to our American public at less than \$100 a head. He formed a corporation and the vessels were designed by the dean of naval architects in this country, the Theodore Ferris Company. The specifications called for vessels of 110,000 tons, 38 foot draft, 144 foot beam, 1,255 feet long, with 5,000 twin-bed staterooms and bath--10,000 passengers. They had a high speed of 37 knots and a cruising speed of 33. In an emergency that sort of equipment becomes a very valuable defense asset. The plans for these vessels are now before the Maritime Board.

Why not apply the same method to the military problem that was proposed for mass transportation across the Atlantic for civilians? The loading of those vessels was not to be attempted at New York or any other existing harbor. A spot was selected that had already been surveyed by the North German organization before World War I to avoid going into New York. That spot is 135 miles east, at New London. The vessels would be loaded for tourist purposes at Kansas City, Pittsburgh, Chicago, San Francisco--anywhere in the United States where a trainload or a busload could be made up.

The planned loading facilities are capable of putting passengers aboard in less than three hours with all the paper work taken care of by their travel agent back home. The same can be done with the military. That problem lies within the province of the Association of American Railroads and the transportation authority in our present national defense setup. Operation of the vessels is a responsibility of the Military Sea Transport Service of the Navy. Such vessels can take

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30,000 troops, each man sleeping eight hours a day in a bed--hot beds, of course. The point is that the vessel can be utilized on extremely short notice for military purposes. Having been loaded, it can shove off. At 35 knots speed, it requires no convoy. So far no practical submarine is in sight that can catch them at that speed any more easily than they were able to catch the Queens in the last war. No one ever caught it. With the commander on board with all his men and all his light equipment, which will permit him to move into a base in Africa, in Europe, in Asia, we have a single powerful unit, provided it can be distributed rapidly from port of debarkation to base and from base to combat zone.

The military air transport service of the Air Force developed so far has but a handful of luxury passenger aircraft converted to freight hauling as the air transport means to handle that problem at the present time. It is our Achilles heel. In order to be as air transportable as General Collins wishes the Army to be--and I am sure the Marine Corps the same--you must actually have something in being with which to transport them. There is a no more wasteful dissipation of manpower than this business of trying to convert commercial aircraft to military uses. It is a terrible waste of men and hours when both are in short supply. There would be a possibility of having such aircraft available provided we had an air freight industry in being in this country.

For the past ten years I have been appearing before committees of Congress, writing articles and making speeches--pleading the case of air freight--as a national defense asset. So far nothing has happened. There were six bills considered by the last Congress. It came out with 12.5 million dollars, a testing bill that everybody has admitted is little more than a gesture. You can't fool around that way with our national defense!

On the basis of developed facts, billions of ton-miles of freight can be carried at less than 15 cents to a ton-mile. Currently that freight is being carried at rates up as high as \$1.50 a ton-mile. Naturally the people getting that sort of tariff aren't enthusiastic about an air-freight industry, but now that we are in a national emergency, the sort of a situation is inexcusable.

The ordinary air freighter should be built to commercial specifications and not to military specifications, for the simple reason that every pound of useless weight being carried reduces the pay load by that much. Such an aircraft is easy to build, simple, and cheap, costing anywhere from one-half to three-quarters the cost of any other airplane.

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As I said a minute ago, this is a part of our national defense requirements now. It is no longer a simple commercial competitive situation. If we had such an industry in being, it would be quite possible to pick up entire operating divisions with their personnel and paper work, their airplanes, their handling gear--the whole works--and transplant them to any place in the world and go on operating just as they have been.

To do that sort of thing properly, however, is going to require a coordinating agency of some sort. If there were in existence a transportation authority capable of coordinating the Association of American Railroads operation, the Army ground transportation, the Navy Military Sea Transport Service, and the Military Air Transport Service of the Air Force, you would have an organization capable of utilizing every unit--ground, sea, and air efficiently.

What is the objective? In a few words you can say it is an "International fire department." To my mind it is more or less an ideal development of the Marine Corps mission. If we were able to transport 10,000 to 20,000 highly trained men with their light equipment within 10 or 14 days to any hot spot in the world, we would have something. Obviously, such a force can't exist just dropped overboard on the coast of Africa. However, the command and the logistics establishment, with the very heavy equipment that must be provided to maintain the firepower necessary for heavy opposition, should be in place ahead of time.

They are talking about four divisions overseas now. If the bulk of that outfit constituted the command organization structure and the logistics establishment, then your fire department could come along rapidly with weapons, all the way from the atom bomb down, and present an opposition to the enemy--which he isn't going to lightly tackle. He is too smart. Just the mere fact that it is in existence and ready to go may be all that is necessary.

Now the weapons that such an outfit would have to be equipped with are all off the drawing boards. We don't have to put that 87,000 tons of heavy equipment per division on board these fast vessels. You wouldn't want to do it. But you can put 8,000 or 10,000 tons of mighty potent modern weapons aboard with them. Particularly if our men have been trained in the use of those weapons as a highly specialized force. Also keep in mind that such a proposal would permit taking 18-year-old draftees and training them at bases close to their homes. Our recruiting statistics pretty well establish the fact that these 18-year-olds would be better off under strict discipline for a few years than being allowed to run at will in our soft way of life.

I have a nephew who is a recruit. He was down at my house the other day. I asked him what the reaction of the boys was to this 18-year-old business. He said, "Well, we have 450 in the camp that I am presently attending. We have all sorts of discussions. There are only 10 out of the 450 who have voiced any opposition to getting that training as 18-year-olds." And with these youngsters in camps it doesn't take long to get from 18 to 19--no longer than it seems to get from 60 to 65--and we would then have a force that would have the highest sort of esprit. In closing I will dedicate this proposition to the Marine Corps.

GENERAL HOLMAN: Gentlemen, in our studies on transport we have heard two or three complaints on previous occasions that we should have a little more unification and across-the-board control throughout the whole system. Here is a golden opportunity for someone to explore that particular area. First question.

QUESTION: General, I didn't quite understand that question that commercial transport could not be converted to military use. Were you talking about passenger transport? The C-47 was easily converted during the last war; also the C-54. If we hadn't had the same type of conversion already developed and ready we would have been in an awful fix and I don't think the Air Force could have developed an aircraft at that time.

GENERAL KNERR: That is correct. But you have voiced my thesis. You must have these things in existence at the outbreak of the war. The C-47 and the C-54 cannot pay their way commercially. Some people are going broke trying to do it, but there is just too much dead weight built into them to really pay their way. Remember the military transport as developed by Fairchild, for instance, the flying boxcars and the various other airplanes that are purely military transports. They are always in existence. They are always ready. But you can't have 5,000 of those lying wrapped up in mothballs. However, you can have a very large number of air freighters operating daily in commercial practice. That is the deficiency we seek to fill.

QUESTION: The difference is that the DC-3 is economical to operate commercially and also the DC-4, isn't that right?

GENERAL KNERR: They will pay dividends anywhere from a half to a third of what a pure freighter will pay. A pure freighter can be operated at less than four cents a ton-mile operating cost. You can't do it with those.

QUESTION: Freightwise and passengerwise, that is the difference we are talking about. I see.

QUESTION: General, last June when we got into this Korean affair, there was a tremendous demand for air transports. We were utilizing all our military air transport even to the extent that for the first two months our Cruisairs were flying twice the normal time. We had a dozen different air lines under contract and we still didn't meet the demand. I would be interested in hearing a little more about these proposals that you were backing before Congress on the details of freight lines.

GENERAL KNERR: During the period, of course, I was on active duty, and my objective in appearing was to fill in the vacuum on some 4,000 C-54 equivalents that exist in the airlift required by the Army alone. That vacuum is still there. And the legislation that was proposed--it was backed by the Air Force--to create a prototype freighter was lost by the wayside. I am not positive why. As I said, the only thing that actually came out in legislation came out in this last Congress to provide 12.5 million dollars to test turbojet passenger airplanes, when the whole business started out to create a freighter.

Now the air tonnage is there. Each one of the operators will tell you that if they just had a real air freighter they could pull their rates down so low that it might be in the billions of ton-miles to handle, domestic and international. There is a terrific backlog of opportunity waiting just in South and Central America. The traffic is there; the vehicle is not; and it is a military necessity under present circumstances.

QUESTION: General, I appreciate that the tonnage is there because I think the railroads, for example, are not too interested in less than carload lots on their express shipments at the present time. What I would like to know is what is being done in regard to the collecting of the cargo, because an airport generally has to have a lot of space and cannot be located in every little jerkwater town? It has to be tied in there some place to get their freight put together and distribute it again.

GENERAL KNERR: Yes. There have been two annual meetings of the Cargo Freight Organization--the last one I recall up at Newark last year--and that subject was thoroughly explored. It is simply the standard method of picking up freight and delivering it to the point of shipment. That is done locally by pickup firms of various sizes. If you are out in the country somewhere so that a pickup air freighter of five-ton capacity can operate from the local small town to the big center, there is where that small airplane comes into the picture.

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That is the airplane that would be ideal for this Korean situation because it is able to get in and out of unprepared fields and requires, oh, somewhere around 800 feet only of run or stop, and can be flown right up to the point of contact. With the immediate need for hospital service, General Bliss has a very insistent demand right now for a number of hospital surgical aircraft with each division so he can get immediately back of the point of contact and save a lot of people that now are lost for lack of sewing them up quickly, and all along the line there are similar requirements.

One of the requirements is to get away from this highly expensive and vulnerable parachute dropping. It costs \$3,000 per man to put down a chute outfit. With the slow type aircraft the same number of men required in any area can be unloaded from the airplane. This slow freighter type airplane in existence with the type of deceleration of the plane the Navy has developed has a compartment that is inside the airplane in which the men are seated. The result of the deceleration is that the airplane flies out from under them at grass top. It has many other uses, but you have to have the airplanes in existence right now. There is nothing under way for building cargo transport; nothing; although there are plenty of proposals on the table.

QUESTION; General, would you give us some idea of the characteristics of this airplane you are talking about that you are primarily interested in?

GENERAL KNERR: Well, when I retired last year I had to do something. I couldn't sit around doing nothing. Perhaps you will recognize the word Burnelli. The Burnelli type airplane has been in existence for 20 years but because of Mr. Burnelli's personality nothing has ever happened about that type. A dozen of them have been built. They have been used by the British, the French, and so on, but no one was ever able to tie him down to brass tacks for a production program. But the airplane is able to concentrate the center of gravity of the load in the airplane very close to the center of lift of the airplane. In the long-cylinder type airplane, another airplane (the tail surfaces) is tied on behind to hold the end up. You can't load anything in the rear third, that is a real useful load, unless it is flowers or something very light. In body-lift airplane the wings are out here (indicating) and the whole body of the airplane is aerofoil shape. The body itself of the airplane lifts 40 percent of the load. It is of standard aerofoil shape. Its cargo space is about 20 feet by 30 feet. The normal head room is seven feet, two-thirds of the way back. You can load this type of airplane any place and you will not disturb the balance. The point is that this type of airplane is in existence and has been developed on the basis of wind-tunnel data, all accepted by aircraft engineers. It is a highly practical airplane waiting to be developed for this highly specialized purpose.

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QUESTION: What is the power?

GENERAL KNERR: The four-ton plane, the one that is flying today, has R-2000; the five-ton R-2800; and the 25-ton, 4 turbo-prop engine, driving two counter rotating propeller installations and the fighter in the same configuration, has a remarkable wind-tunnel prediction. It has a speed range of about 75 to 650 miles, a maximum range of about 5,000 miles. That is something that can get inside these MIG's.

QUESTION: I would like a little further development, I think I may have misunderstood you. You talked about a division going into Korea requiring 87,000 measurement tons and took about 10,000-man force, as I got it, going by water. Is that supposed to be the necessary fighting equipment in these new light arms? What was the picture on that?

GENERAL KNERR: I did not mention the fact that the top deck of these vessels were 800 feet by 145 feet and would be able to launch the aircraft that are integral to your forward post in light-type aircraft. In addition, there would be a Navy-carrier-type vessel in such a task force. It is the Navy's responsibility for the transport overseas and for the heavier assault aircraft. The other aircraft fly overseas under their own power. In those personnel vessels and in the accompanying carrier, you have the capacity for the type of offensive ground equipment visualized for this highly trained unit.

QUESTION: Has the tonnage been estimated on gearing? My question leads more to this, to what extent can we reduce this 87,000 tons per division?

GENERAL KNERR: That is a very large subject. With General Collins and General Bolte that is one of their objectives. I can say it can be reduced; to what minimum, no one has a definite answer. My own uneducated guess would be somewhere around 30,000 tons.

QUESTION: Sir, we have had some talks down here that indicated that air transport uses up a tremendous amount of fuel versus other forms of transport. I am wondering if your figure of four cents a ton-mile includes the initial purchase price or does fuel needs enter in addition?

GENERAL KNERR: You will recall I said "operating expense," that is, paying the crew, handling the gear, and fuel and oil--those things required to operate an airplane. Your capital investment is something that will have to be amortized under the spread between 4 and 15 cents. There is no need of its going over 15 cents.

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QUESTION: I am interested in this transport of firemen that you are talking about. I am wondering if those plans could be consummated in time to do us any good. I understand it takes a long time to build them, but how much time do we have to build these experimental ships that you are talking about?

Second, I am familiar with New London. We have a Coast Guard Academy there, but obviously port facilities would have to be created there. It is also known that we must have several fire houses to house our equipment. It would not be a good idea to put all our eggs in one basket at New London. Presumably we must have other ports elsewhere. That being the case, do these ships go through the Canal? How would we be able to handle that situation? Presumably that is all academic to you, but I am wondering what the answers are?

GENERAL KNERR: Well, New London has a configuration of land geology that lends itself ideally to creating graving docks. Vessels of this kind cannot be built on ways. Graving docks can be used for construction of the hull and floated out. On the island across the river there is an area that will lend itself ideally to turning these vessels around without docks. The vessel comes in from the sea alongside the docks to load; then it turns around by swinging around the nose of this fill that will be made from debris from the graving dock, so it is pointed out to sea for its trip out. New London is no more vulnerable, probably less vulnerable, than New York Harbor or any other harbor. We must expect to lose some harbors. It is no more certain we will lose this one than San Francisco or somewhere else, or whether we will lose any of them. Nobody can predict. Personally, I am of the conviction that there will be no war if we assume an attitude that contemplates the use of such equipment. I think this is clearly indicated in the current Russian attitude toward England and this country.

The tonnage of the vessel does not handicap it either on this side or in Europe. The tourist traffic was intended for Queenstown terminal and Le Havre.

Now when it comes to using the vessel as a fire department to the African continent or the Asiatic continent, we must assume that we have planned this entire war plan, if you want to call it that, from the very beginning and will take into consideration the necessity, as I have said, for having the logistics cadre and command establishment in place long before there is any active opposition. We can't afford to wait for Russia to move into Africa. We have made up our minds we couldn't wait for them to move into Asia. In my opinion this is a better way to do the job as compared to the hard way we have had to follow in Korea for lack of transport.

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QUESTION: How do we get one of the vessels over to the Pacific Coast after it has been launched in New London? How long will it take to get our vessels ready in relation to the situation we are in now?

GENERAL KNERR: The plan for the construction of the power plant is for a three-year program, all other adjuncts feeding into it in less than the time required for the power plant. Given priorities on a power plant of about 350,000 horse power, it can be shortened up to two and one-half years. However, three years is the basis on which the planning is being carried forward. The ability to get ashore--I think is part of your thought--at the other end is a problem that will have to be worked out in detail to fit a basic philosophy. You can't start out and say, "No, we can't do that because we can't get men ashore." What we have to do is assume we can get the men ashore and go ahead and establish the method for doing so.

Each of these vessels carries lifeboats with Diesel power sufficient to unload a normal passenger list and they are perfectly good landing craft for personnel and light arms. You can't expect a soldier with barracks bag and rifle to win a war. But the details for accomplishing it should follow the determination to establish a modern plan rather than to say, "No, we can't do it; we never have done it before."

QUESTION: If I may pursue this one step further, the idea of a fire-fighting force is to get the equipment where the fire is in the quickest possible time. We launch in New London; the fire is in Northern Oregon. If we have to go around South America, have you calculated the distance we would have to go if we can't go through the Canal. Do you contemplate going through the Canal?

GENERAL KNERR: Obviously not, but their oil tankage will take them around the world. You will have a greater turn-round oil capacity for one crossing of the Atlantic and back again, and if you are going to the Pacific they will do the same as they did with the Leviathan to Australia. You can't count on the Panama Canal, in other words, that is too easy a target. It would be very foolish in my opinion, to build equipment depending on using the Panama Canal.

QUESTION: How do you protect it against air attack? Wouldn't the ship be a bright target?

GENERAL KNERR: There is nothing that walks on the earth or floats on the surface of the ocean that aircraft can't get if they are determined enough and have control of the air. Obviously you wouldn't go bursting out across the high seas in the face of Russian air power in complete control. That is not the way you fight with airplanes. Now the whole question of the vulnerability of such vessels is, in my

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opinion, somewhat academic because everything is vulnerable. All through the last war, airplanes were vulnerable. We went after the German Navy and ship by ship ticked it off only because we had control of the air. You must have control of the air before you can fight a foreign war. Otherwise, you will never get on foreign soil. I hope our Korean experience hasn't created a false impression because there are no airplanes there.

QUESTION: Do you contemplate subsidizing the air-freight industry to the point that it can't carry the burden itself? It seems to me the railroads, which I understand now make more on freight than on passenger travel--in fact they lose on passenger travel and make money on freight--would deteriorate and they are already in a weak position. I don't see how we can fight a war without the railroads.

GENERAL KNERR: As of the present day, I saw a figure the other day that there is a 3,000-boxcar vacuum right now on the railroads.

They aren't carrying the freight and there will be more freight once you have fast means of moving it because it will be in transit. Normally the products of industry in transit are more or less a dead loss; also what they have to store in their warehouses. Now if you can reduce inventories down to 25 percent of the present inventory, move it fast, everybody has gained, but you must have something moving to carry it.

You mentioned subsidy. I would like to call attention to the fact that these vessels for the first time are planned to operate without subsidy. They will pay their own way at 50 percent loading. Likewise, the freight industry has absolutely no need for a subsidy of any kind. It is completely self-supporting--the taxpayers should cheer on both those items. Also when you build that kind of equipment during an emergency period such as we have now, you won't have to bulldoze some of it into the sea after the emergency is over. It goes to work in industry because it can pay its own way.

QUESTION: Well, sir, part of the airmail payments now are in the form of subsidy, are they not? How can you say air freight doesn't need a subsidy? How can it compete with the airships 50 cents per ton-mile in the form of subsidy for the air mail?

GENERAL KNERR: One of the things I ran into in these various congressional hearings is that this subsidy is a very closely guarded secret. Only the last Congress succeeded in getting a bill across known as the "Mail Subsidies Separation Bill," in order to try to separate that subsidy. What it amounts to is that the mail is carried at a rate fixed by the Post Office Department and then the books are

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balanced by the Government. You can't find out what that balance is yet. That is the reason why this situation exists.

QUESTION: General, it is not quite clear to me why, if the military cargo transport is not economically operable for civilian purposes and it is possible to design a cargo aircraft which is economical to be operable for civilian purposes and also suitable for military purposes, why isn't the Air Force or the Government designing such an aircraft to meet that requirement? Why do we continue with these superheavy jobs which are too expensive to operate commercially?

GENERAL KNERR: I think you have probably been given, as I have been, to sitting on boards participating in design of equipment and you had a particular little gadget you wanted to put here. You remember a sad experience you had where something broke up and you want something to prevent that. The result is the military has produced an airplane that, like the C-82, won't break up no matter how much you abuse it.

You don't operate commercial airplanes that way. The average Air Force pilot, including myself, I don't think would last long in an air line because we were not compelled to handle our equipment easily. We didn't have fare-paying passengers behind us. They demand luxury. A lot of the weight that goes into the building of a commercial airplane is luxury. You take a commercial C-54, put it in your modification center and bring it out to carry coal, as they did on the Berlin airlift, after having taken out hundreds and hundreds of pounds of luxury, you still couldn't tear out any basic structure they had to build in to support that luxury. So it is a vicious circle.

But when you start out on a drawing board to produce an airplane to the Civil Aeronautics Administration's license requirements, you don't have to put those things in them. You can't build a freighter even now to military requirements that will pay its way any better than the C-47 or the C-54 converted.

QUESTION: Yes, I see the problem there, but it looks to me as though you are whistling in the wind with your basic argument until you strike at the concept that military aircraft must be built to fit the Army's experience requirements. It seems to me the first thing you have to do is to get the Air Force to set up the concept that something has to be sacrificed in aircraft durability in order to get a civilian reserve type of vehicle that will meet a long-range requirement. Unless you meet that problem and get the Air Force to support the design by these civilian concerns that can design equipment, I don't believe you are going to get to first base.

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GENERAL KNERR: That has been very easily answered by producing an airframe built to commercial license requirements which is safe-- nothing hazardous about it. In the hands of a commercial pilot it will outlast the military airplane no matter how strong you make it. The basic structure of the airplane itself is bought by the customer, whether he be military, a hauler of flowers, a vegetable man, a hauler of fuels, or of pig iron; I don't care what it is. Each calls for the things that are required for their specific requirements at their additional expense. The aircraft manufacturer produces a good, sturdy structure and you, the customer, has it modified before the event instead of after. That airplane can pay its way with the adjuncts required by the commercial man, and it can take all the heavy fittings you want to slap into it for military purposes. But you can take them out of the military freighter when the war is over and put them to work again commercially.

QUESTION: General, we are very much interested in your concept of military transport service for land, sea, and air; but I was surprised to hear you leave it in the lap of the Marine Corps. That seems to me to give the Marines a job that would take them from the combat role and put them into administrative jobs.

GENERAL KNERR: I am sorry I stated that poorly. I meant they were the fighting element, not the operating element. The Navy operates the vessels, the Air Force operates the airplanes, but the best equipment with modern light weapons that are carried from here to there could well be a Marine Corps chore.

QUESTION: Who has the over-all control of this transport service? You mentioned unification under a supreme head of some sort.

GENERAL KNERR: Yes, in briefing Mr. Wilson, he found the suggestion extremely interesting and, as I stated, turned it over to Mr. Harrison's organization because there is a transportation cadre.

QUESTION: General, if we had this system in being now, it would certainly have influence on our planned deployment in Europe, but will be ready in time, particularly for the first four divisions?

GENERAL KNERR: Maybe I failed in my duty. The other day Senator Wherry asked me to come over and testify before his committee and I could have presented this picture there. I declined because, as you can readily see, it is going to take time to create an organization capable of operating that sort of a system as well as creating the implements of the system itself. But the mere fact that we are moving to create a system has a tendency to stop a war. Why should the Russians go to war? They have accomplished more with this psychological

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warfare practice in the past five years than they could ever have done in a shooting war. As I say, if we don't look fat and lazy, but are lean and ready to fight, there won't be a war--in my opinion.

QUESTION: During the past war, Mr. Henry J. Kaiser and Howard Hughes were quite enthusiastic about these large air transports. They were able to get considerable money to go ahead and develop the prototype which is still being developed. Is there any use being made of that now? Also if the funds could be obtained at any time without specific congressional action, would it be possible to arrange financing for the building of a new prototype now that we have a national emergency?

GENERAL KNERR: I was very much honored to appear at those hearings alongside Mr. Simon Lake. He was for building his big submarine freighter. Kaiser was for the monster type of airplane. He said he could produce, I think, one a day, 5,000 a week, or some other ridiculous number. I was beating on this same dishpan at that time--create the industry first and implementation will follow. I think the money appropriated was a complete, useless waste. I thought so at the time. It has proved to be so. The monstrosity is still sitting out there after one short hop that just barely cleared the water. That was government money. What we should do is develop organizations capable of building these vessels and airplanes as private enterprise requiring no subsidy; it can be done. I am butting my head against that stone wall right now.

QUESTION: General, I would like to get back to the strategy on this thing. I think I have read most of your writings. Are you advocating that we can take this policy of putting up a firehouse and building our strategy around this type of equipment ahead of the eventuality?

GENERAL KNERR: I am advocating reorienting our military studies to present-day requirements, not assuming that we build it around anything or that we have any particular sized Army or Air Force. I think the entire picture should be recast in the light of modern requirements, knowledge of who our enemy is, take full advantage of the millions of saboteurs that are ready to stick a knife in his back the minute he looks the other way. A great deal can be done right now. This business of Russia getting to the channel in anywhere from 21 to 90 days is a strawman, in my opinion. Sure the Russians can if they want to start, but they aren't going to want to start. They know their objective is still 3,000 miles away and until they can lick our industry, they are not going to challenge us.

QUESTION: Yes, but Russia can continue in this case of starting fires like Korea. If we rush to put them out, how long will our system be able to support our doing that?

GENERAL KNERR: It won't be able to last very long. I gather you agree with me that we are going about this with one hand in our hip pocket; sparring with a bear is silly. We have weapons that could have stopped that war over there when it began. We wouldn't have been any worse off than we are so far as having China for an enemy is concerned.

QUESTION: We have to think of strategy a year ahead because the weapons take years to build. What you are proposing is a fire force to stamp out fires.

GENERAL KNERR: As you are aware, in our arsenal we have bombs of various sizes; we have airplanes, we have arms; we have this, that, and the other thing. But there is something missing. We don't have a fire department.

QUESTION: Well, then, is this supplemental to over-all strategy?

GENERAL KNERR: Certainly. I expressed myself very poorly obviously. I had no intention of abandoning the Army, Navy, and Air Force and building a fire department.

QUESTION: General, I don't know what good we can get out of vessels as large as 110,000 tons. We have learned in the Navy over a period of years that we don't want to put all our eggs in one basket. With respect to the ability of that vessel to meet an attack from submarine vessels, I don't think we can rub that out by saying the Queens got through. I think we have too many eggs in one basket.

GENERAL KNERR: There has been no war where nothing was lost; it is quite possible. It would be foolish to start that vessel or any other vessel out upon the sea unless you felt fairly well satisfied that the submarine menace could be controlled.

It is quite possible that it would be lost but I would be willing to take a chance in the name of advanced planning.

QUESTION: I am interested in this air-freight transport. What future has the packet plane with tractor-type landing gear operating off any field?

GENERAL KNERR: That tractor gear to start with had much promise. A million dollars or so was spent to develop it. It is not working yet. Airplanes that have to go into areas where the ground is soft--rescue type or cargo type, it doesn't matter what it is--have to be light in order to operate. A pilot can't just blunder in with a 25-tonner where he knows the plane is going in up to its belly. You must have the type aircraft that can operate in the local sort of soil. When you can't do that, you don't fight your war in that spot with that sort of equipment.

QUESTION: What about pod-borne aircraft?

GENERAL KNERR: Pod aircraft are very useful militarily. They have no future commercially. Militarily they are a solution to a problem where you can put a heavy craft on the ground and get it off; deposit these pods with various sorts of equipment, such as hospital cots, housing, and radio communication, anything that you want to use them for. The idea is to leave them. They are very useful for that purpose. But again with the heavy carrier airplane, you are restricted to areas where the ground is hard enough for it to get in and take off without the pod. It is a useful gadget.

GENERAL HOLMAN: General, we are deeply indebted to you for coming down here this morning. I think you can tell from the questions from the floor that we are very much interested in what you have had to say, and I can assure you your ideas will be bouncing around the college for many days to come.

Thank you very much.

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