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RAILROADS IN THE ZONE OF THE INTERIOR
DURING AN INVASION.

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Lecture before Army Industrial College,
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by,
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In our study of plans for the utilization of our national resources in time of war the problem of transportation and how to handle it stands out as one of the most important. A great deal has been written on the military use of transportation but very little discussion can be found on its industrial and commercial uses in the Zone of the Interior. Since the general subject of transportation is too broad to cover adequately in the time available here, this talk will be limited to a discussion of the utilization of railroads during an invasion.

Early in the 13th century Genghis Khan with a horde of 250,000 desert fighters set out in the autumn from eastern Mongolia, swept across Asia into Persia where they over-ran the country during the following spring and summer. Part of this horde went on to the west of the Caspian Sea and after wintering in the Caucasia crossed the Caucasus Mountains to the Russian steppes. This force went as far west as the Dnieper, down into the Crimea and were finally recalled by Genghis Khan by the simple expedient of fixing

a rendezvous 2000 miles to the east. Thus it had covered 90° of longitude and back again in less than two years. This expedition was probably the greatest cavalry operation of all time but it is especially remarkable from a transportation standpoint. The Army subsisted as it went and had no fixed base but it gathered up vast quantities of loot and carried it back to the home-land in carts and on pack animals. Sufficient food and forage had to be taken along on many of the marches to last the troops and their mounts while traversing vast stretches of utterly barren desert or while negotiating a wilderness of frozen mountains.

Contrast these exploits of the old Khan, remarkable as they were, with those of the American Army seven hundred years later when upwards of two million men were mobilized, equipped, shipped across 3000 miles of enemy infested ocean, and transferred some 500 miles into the interior of France where they took part in the greatest war in history and were returned to their homes, all in less than two years. Many of these men and the units to which they belonged had to be transported 3000 miles overland before they could embark on the ships. Enormous amounts of material to build the ships and to furnish the vast quantities of food, clothing, and munitions for the Army had to be transported long distances. The fighting men of this modern Army instead of carrying food and equipment along with

them, except for reserve rations and certain indispensable individual equipment, found these necessities waiting for them when they reached France. Depots were stocked without expenditure of effort by the combat troops. In short, supply was divorced from combat and the man in contact with the enemy could put all his thought and effort on the job of combat.

What made possible these great differences in the speed with which the modern Army could get to the place of battle and be returned to the homeland after the war was over? The answer is -- Railroads. Without them America could not have assembled this huge force and could not have gathered together the supplies for its maintenance and operation.

Be not deceived by any loose talk about trucks and airplanes and pipe lines making the Railroads obsolete. Such agencies have their functions and are also indispensable but within the vision of anyone now living they will never supplant the function of the Railroads in making possible the rapid assembly of large bodies of troops and of transporting the vast quantities of stores necessary for military operations -- or for that matter for the livelihood of the people of the country in peace or in war. Someone -- I believe it was Foch -- after the first Battle of the Marne said: "Railroads won the Battle of the Marne. This is a railroad war."

When a country is invaded the defenders must move fast. Everything will depend on how the first onslaught of the enemy is met. There is no time for hesitancy as to the best course to pursue. Some supreme authority must take control of the situation and direct the movements of the defending forces. The ability to take decisive action rests on a sound pre-arranged plan. The railroads, because of their extreme importance, must be included in such a plan. The degree of detail which should be included in such plans depends on the peace time possibility for training of the principals who will be called upon to make them effective, but at least the authority under which the railroads will operate must be known and appreciated by all.

The only example we have of the handling of railroads in this country during a war on our own soil is the Civil War. Even this example throws very little light on the railroad situation in the Zone of the Interior. The development of railroads had not progressed to a very great degree and the existing information as to their utilization relates chiefly to their use by the troops in the theater of operations. But in France in the World War we have an excellent example of the use and operation of the railroad system of a whole country during a time when the country was defending itself against a powerful and determined invader.

In order to understand the French railroad situation

it will be necessary to glance briefly at their history and at conditions as they existed in July, 1914.

It does not appear that France appreciated at as early a date as did most of her neighbors the importance of the part which railways would eventually play in military operations. It is true that certain French statesmen during the period from about 1830 to the Italian campaign in 1859 urged that France look to her railways as an element of defense. But little was done about it and during this period, while Belgium, Germany, Austria, and to some extent Italy, were busy locating and constructing strategic railways, France was allowing her railway system to develop slowly along commercial rather than political lines. Even so, her railways stood her in good stead in 1859 and she was able to transport her troops to the scene of conflict with great dispatch. Indeed, so great was the rapidity of troop movements that the troops arrived at their destination several days ahead of their supplies. The military authorities had not coordinated their activities with the operation of the rail transport. As a result, the defeated Austrians could not be pursued.

Although this campaign had been carried on under imperfect and incomplete regulations adopted in 1851 and 1855, it was not until 1869 that France set out in earnest to make suitable plans for the use of her railways in war. Unfortunately these new plans had not been promulgated as regulations

when the War of 1870-1871 broke out and the military use of railways during that struggle was a chaotic failure. A recountal of the many errors and the confusion resulting would be of considerable value to show the pitfalls into which military transport can fall through incomplete or improper regulations on the subject. But time demands a degree of abbreviation of this talk and since the lessons of 1870 are more remote than are those of the World War a discussion of the latter may be more profitable. Certainly it will be more pleasant.

As a result of the disaster of 1870 French authorities applied themselves assiduously during the next forty odd years to perfecting and keeping up-to-date a proper plan with necessary regulations for making suitable and efficient use of her railways in war. As a result we find the country in July, 1914, with very detailed military regulations and instructions to civilian railway operatives. These regulations had been changed many times during the forty years but had been thoroughly tested and rehearsed so that they went into effect with very few hitches. Moreover, they went into effect immediately on M day and the confusion which any delay whatsoever would have brought about was never allowed to occur. It is well that this was so or the Germans would not have been stopped at the Marne and probably would have gained the quick decision which they sought.

The French plans for the operation of their railroads

in war were based on a law passed in 1888 under which all the railroads passed on M day under the control of the Minister of War.

The basic principle on which the plan which went into effect on July 31, 1914, was founded was that the railroads should be operated by their regular personnel acting in conjunction with a military organization paralleling the railroad organization. Thus the military authorities were to direct the movements over the railroads while the railroad technicists furnished the transportation and performed the actual railroad operations.

A brief explanation of the railroad system is necessary at this point. There were six principal systems and a larger number of minor systems. The whole system constituted a huge spider web with Paris at the center. The main arteries of this web were the six major railroads which were the Nord, extending generally northeast, the Est running to the east, the Paris-Lyons- Mediterranean, the Paris-Orleans, the Midi in the southwest in the Pyrenees region, and the Etat in the northwest. The minor systems completed the network.

The organization set up to operate the whole unified system is shown on the chart.

The authority of the Minister of War to operate the railroads was vested in the Chief of Staff, who in turn delegated his responsibility to the 4th Bureau. During the time

of the advance of the covering troops and during the first few days of the concentration of the main armies the 4th Bureau exercised authority over all the railroads but when the Armies became organized this authority was transferred to the Commander in Chief over the railroads in the Zone of the Armies.

Under the 4th Bureau line commissions were organized, one for each of the six major railroads. The minor systems were attached to and made parts of these six. The military member of each line commission was a staff officer of field grade with one or more assistants; the technical member was one of the higher railroad officials who had suitable technical assistants.

Under the line commissions were organized subcommissions which had jurisdiction over certain designated parts of the systems. Station commissions or boards were placed at each station of military importance.

Coordinate with the 4th Bureau of the Staff was a superior railroad commission made up of high Army and Navy representatives and of representatives of the Minister of Public Works and other civilian interests. The members of the line commissions also sat on the superior commission which acted only in an advisory capacity.

After the Armies were organized the administration of the railroads in the Army Zone was set up in a manner similar to that in the Zone of the Interior.

The line of demarcation between the Zones of the Armies and of the Interior was fixed by the Minister of War. It was varied from time to time as circumstances dictated.

So far we have considered only the railway system organization. We must now introduce an important adjunct of the military organization, the Regulating Station. This was part of the system of military supply and furnished the necessary liaison between the strictly military organizations and the railroad organization which was quasi-military. While this discussion is not intended to cover the organization for military supply, the function of the regulating station must be understood to gain a satisfactory comprehension of the operation of the railroads.

Strictly speaking France was not divided into a Zone of Interior and a Theater of Operations in the sense in which we know it. The war was in France and the whole of France was taking part. Therefore, the influence of the regulating station extended back throughout the interior. Military movements were initiated from the rear at the call of the regulating commissions. The destinations for these movements were the regulating stations from which all movements further to the front started. Thus even the train crews handling trains behind the regulating stations did not know their ultimate destination. More time cannot be spared here for discussion of the regulating stations but their influence and functions should be kept in mind.

So far as the operation of the French railroads outside the Zone of the Armies is concerned, it was so intimately connected with the military operations that it cannot be divorced entirely therefrom.

The whole plan of operations was rehearsed and tested during peace and on M day all key personnel understood its functions, all took their posts and carried on. Records indicate that the covering forces were transported, the mobilization and concentration carried out without serious hitch and the many forward, rearward, and lateral movements took place with remarkable precision.

France had not, however, visualized a long war and adequate provisions for the upkeep and operation of the railroads of the interior had not been made. The load caused by the British Armies had to be added to that of the French themselves. Troops and supplies had to be sent to the aid of Italy and the growing demands of French munitions manufacturers had to be met. Moreover, the scheme of railroad operation had not sufficiently coordinated the military needs with those of the country at large. The cream of the railroad personnel and equipment had been sent to the Zone of the Armies and the railroads of the interior had been gradually allowed to run down. The result of all this was that by the end of 1916 the whole railroad system threatened to collapse. To meet this emergency a drastic reorganization was effected. The final organization

shown on the chart was not brought about until the summer of 1918, there being several intermediate steps in the meantime.

The first of these steps was accomplished by two decrees issued in December, 1916, by which an Under Secretary of State was placed under the Minister of Public Works and was given the power of providing for all military transportation. This power he delegated to the Director of the Rear in the Zone of the Armies.

By another decree issued May 9, 1917, the powers of the Under Secretary were broadened by placing all civil and military personnel assigned to transportation service under his orders. This would have removed from the Commander in Chief the authority over the railroads granted to him by the law of 1888. So it was arranged that the Director of the Rear, acting under the Commander in Chief, should at the same time be Director of Military Transportation of the Armies acting in the name of the Under Secretary.

By a further decree of September 15, 1917, the Under Secretaryship was abolished and its powers placed directly in the Ministry of Public Works. The second chart shows the control organization at this time.

Finally the decree of July 2, 1918, permanently gave to the Minister of Public Works and Transportation the authority placed in the military authorities by the law of 1888. Under this decree, a Director General of Military Transportation

was placed under the M.P.W. & T. He was charged with the execution of transportation over the entire system of railroads by means of military transportation orders. A.D.T.M.A. was placed under the Commander in Chief of the Allied Armies and carried on the transportation activities for the armies in the name of the D.G.T.M. This set-up is shown in the third chart.

The last step was the appointment under the allied C. in C. of a Director General of Communications and Supplies, (D.G.C.R.A.). This official virtually directed all the railways of France, although the M.P.W.& T. was still nominally responsible for this function. By this time the American Army had superimposed its load on the railroad system and practically all the railways were needed for military use and so came under the D.G.C.R.A.

Actual details of operation must be omitted here but a few pertinent points may be mentioned:

(1) The load added to the railroads by the war averaged about 40% of the normal. At certain times and in certain places the additional load reached 200%.

(2) The principle of dual control, i.e., military men for military transportation matters working side by side with railroad men for technical matters.

(3) A force of military engineers, i.e., troops in uniform but trained in railway work, was dovetailed into the

regular railroad operatives and performed invaluable service.

(4) Not only was the general scheme of control planned in advance but every military movement was carefully planned. Complex train schedules were worked out. Standard trains were adopted and used.

(5) The French critize the American Army for putting the cart before the horse. American troops landed in France before any means of transporting them from the ports had been provided, thus placing an additional burden on the already overloaded French railroad system.

How can we apply the lessons gained from the French experience to a situation in which this country is invaded by a powerful enemy? Before we can answer that question account must be taken of certain fundamental differences between the two countries. The following are factors of this sort:

(1) The whole of France is about the size of the State of Texas. Her total mileage of railroads is only a small fraction of that of the United States.

(2) The government of France is a centralized one. While the United States has a strong central government, a great many governmental considerations are left to the states.

(3) The entire attitude of the French people toward military preparations is at variance with ours.

(4) The Frenchman is much more deliberate than are our citizens. Where we impulsively advance into unknown

situations, he stops to make a plan. If the plan fails he shrugs and says "C' est la guerre." If we fail we improvise on the spot and go ahead from where we left off.

(5) The tonnage necessary to keep an American soldier in the field is considerably greater than for the French.

(6) The United States is more highly industralized than is France.

(7) For us to prepare a transportation plan in as much detail as the French plan is literally impossible.

(8) Due to the great size of the United States a large part of its territory will be far remote from the scene of hostilities.

In spite of these discrepancies between the situation of France during the World War and that which the United States will face during any future war within the country, there are certain conclusions which can be drawn from the experience of France:

(1) A transportation plan should be drawn up in advance and should go into effect immediately upon the outbreak of war.

(2) The military authorities must have absolute control of all transportation in the Theater of Operations, but the authority for this control must be lodged in a transportation organization and must not be interfered with by subordinate military commanders.

(3) The actual operation of the railroads must be performed by railroad technicists either through their peace time organizations or by means of special military railroad units.

(4) The railroads of the country must be so controlled that they will form a unified system having the utmost flexibility.

The transportation industry in the United States is in a state of flux at present. Great changes have taken place since the World War. The railroads are in dire straits. But they will continue as railroads, although it is probable that as great if not greater changes will take place during the next decade as during the one just past. A word of caution should be spoken here in connection with our war planning. We must not "play futures." Rather we must build our plans around conditions as they exist today and when those conditions change we must change our plans to fit. Let us not be discouraged if it appears that changes in industry rapidly make industrial war plans obsolete. If we keep our changes in plans in step with the changes in industry we will have provided the country with that insurance against disaster which can only be provided by sound plans.

This brings to mind the Scotchman who after having paid life insurance premiums for years survived his beneficiary. He went to the insurance company and asked for the return of

his premiums. After it had been explained to him that, while his policies had a certain cash surrender value, the extra amounts he had paid out in premiums must be regarded as the price he paid for the protection of his beneficiary during her life, he exclaimed "I understand a' that but dinna ye ken, I didna dee"!

RDB/MS
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