DEPARTMENT OF OPERATIONS AND TRAINING

FORT LEAVENWORTH, KANSAS

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MILITARY ORGANIZATION: DEVELOPMENT SINCE 1918 - EFFECTS OF MECHANIZATION AND AVIATION

By:

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Brief

1. Subject:

MILITARY ORGANIZATION: DEVELOPMENT SINCE 1918- EFFECTS OF MECHANIZATION AND AVIATION.

2. Problem:

To determine the effects of mechanization and aviation on military organizations since 1918.

3. Discussions:

During the period 1914 to 1918 the war on the western front resulted in a stalemate due primarily to the defensive fire power of the machine gun.

Developments in mechanization and aviation have tipped the balance in favor of maneuver. Increased fire power together with the rapidity with which armies can be concentrated and the constant threat of vertical envelopment have with the aid of arial bombings lifted war from local struggles to global conflicts.

The requirements have increased because of the complexity of the tremendous numbers of items of raw materials that are necessary in the manufactore of high powered air craft and vehicles. All nations require raw materials from outside their borders to build and mantain a modern war machine. Some of the critical items are chromite, industrial diamonds, nickel, petrolium, quartz crystals, tin, rubber, hard fiber to name only a few.

The tonages of supplies necessary to keep vehicles rolling and airoplanes flying plus the necessity for maintinance personnel make logistical support more complicated and extensive.

Both air and ground forces require technically trained mechanics of many different types. In our air force during World War II the prescribed courses for specialites increased from 30 to 90 in 21 months.

As a direct result of mechanization and aviation training time has increased, however, much time is saved because

training in equatation and care of animals is no longer required.

The defense of a nation have become more and more difficult and complex. Defensive measures must be taken to protect harbors, communications lines, power plants, laboratories, shipping lanes and manufacturing plants from vertical envelopment and arial bombing.

The equipment for defense against air craft has not been developed.

4. Conclusions:

1. That developments since 1918 have caused many changes in military organizations. Armored, Ariborne, and mechanized divisions, reconnaissance, fighter, bomber, and troop carrier wings, have been organized and horse cavaly and horse drawn artillery all but abanded.

2. That the idea of the Nation in arms has been intensified.

3. That quality has not reduced the need for quantity or mass.

4. That the importance and difficulty of logistical support has increased.

5. That training requirements, especially technical training has increased.

6. That the need for and the importance of defense has been increased.

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1. PROBLEM.--To determine the effects of mechanization and aviation on military organization since 1918.

2. DISCUSSION. Chapter I

Status of mechanization and aviation in 1918.

The period from 1914 to 1918 or World War I was a period of the use of mass armies. During this period the leading military thinkers were involved with the theory of mass more than at any other time in the history of the world. However, this period was characterized more by stablized warfare than by the theory of mass. This stabilization and stalemate on the western front was the result of the increased firepower of the machine gun together with the desire on the part of the high command of Britian and France to defeat the enemy where he was the the strongest. They reasoned that if he could be defeated where he was strongest the war would be over. Strangely enough it was the civilian leaders rather than the military leaders who sought to avoid the slaughter of a prolonged battle of wearing down the German army.

Churchill wrote in 1914, "I think it quite possible that neither side will have the strength to penetrate the others lines in the western theater -- although no doubt several hundred thousand men will be spent to satisfy the military mind on this point." quoted from Earle. MAKERS of MODERN STRATEGY.

Thus the massing of armies on the western front together with the increased firepower of the machine gun created the need for a new tool of war to restore the balance of war equipment in favor of maneuver.

The tank came into being and use with the weaknesses of a modern invention but it did help to break the stale-

mate on the Western front and to shake the confidence of the German high command in their defenses. The success of the tank even with its weaknesses served to focus the attention of the military leaders of all leading nations on its further development and to standardize its use to restore the balance in favor of maneuver.

Aviation had accomplished little during World War I in its own right other than to fire the minds of men in further development of the use of airplanes in warfare. To quote Harts EUROPE in ARMS -- "Their thoughts instinctively fly upwards and their imagination flies faster: Memory of the last war, is as much the propellent as any knowledge of air developments since. To anyone who analysis the comparatively slight results of air raids of 1914-1918, it is remarka ble to find what a profound psychological impression they made and have left. Small as was the force employed in these raids, it caused a greater and wider nerve strain than any other agenct of warfare. The effects have not disappeared with the cessation of the cause, they are traceable in the general tendency among the public, when ever they think of war, for the thought to be associated immediately with the idea of being bombed from the air, and from this apprehension springs a natural exaggeration."

Chapter II

CHANGES IN ORGANIZATION DUE TO NEW DEVELOPMENTS

The most important changes in organization due to the new developments were the creation of armored, mechanized, and airborne divisions. Armored and mechanized units gradually took the place of the horse Cavalry and horse drawn artillery. These changes took place in all of the leading nations of the world although Germany, Italy, and Russia took the lead.

From the BEINIAL REPORT of the CHIEF of STAFF of the UNITED STATES ARMY July 1, 1941 to June 30, 1943
"A number of organizational changes have been made in tactical units to meet the requirements of the war as it developed. --- Rapid moving tank destroyer units have been developed, equipped with towed and self-propelled weapons capable of knocking out the enemy tanks. Armored divisions have been organized to provide two combat teams, to improve mobility of supporting artillery and to combine service functions. Motorized divisions have been eliminated, the transportation formerly a part of these divisions to be held in pools to meet a special situation. Horse and mechanized cavalry regiments have been eliminated by substituting mechanized separate squadrons. Airborne divisions of glider and parachute troops have been established."

Thus among the great powers there was no substantial difference in organizational changes due to the new developments. Tank destroyer units were eliminated and the gun put on the tank. The Germans learned in their war on the Russian front that they needed a higher percentage of infantry.

The percentage of air force personnel has increased tremendously as the military minds of all nations became convinced of the need for tactical air support in connec-

tion with ground operations. Airial reconnaissance has become the eyes of the army commander in all ground operations.

Strategic bombardment units of the air corps have taken an increasingly greater importance as the airplane has developed more weight carrying capacity and ranges have been increased. There exists a great difference of opinion at the present time as to the actual value of the strategic arm but the balance is still tipped in favor of maintaining or increasing this type of organization. See Annex #1.

One other important organizational change is the troop carrier wings of the airforce which is used to transport airborne troops and equipment and other air transportable units of the army.

Antiaircraft Artillery units have increased in numbers and fire power.

Chapter III

THE NATION IN ARMS

The concept of a nation in arms where the total population was involved in either fighting or the support of the fighting men has been intensified with the development of mechanization and aviation. The increased maneuverability of the ground forces coupled with the threat of vertical invelopment tend to broaden and deepen the battle field and to involve an ever increasing area and to threaten at least large numbers of civilians who would otherwise have been safely removed from the dangers of war. Arial bombings further deepen and broaden the danger zone and inflict casualties among industrial workers of the nations involved. Thus with the new developments the scope of war tends to involve all of the people of a nation in the procession of the war and to extend the danger zone to include the entire population.

War then becomes an intimate daily thought of all the people and the idea of the nation in arms has been intensified.

CHAPTER IV

QUALITY vs QUANTITY

The old concept that quality was of far greater importance than quantity has taken on a different meaning with the development of increased means of rapid movement and increased range of projectiles by the use of mechanization and aviation. Along with the increased firepower and maneuverability of modern armies has also developed the means for rapid communications with which to control these armies over great distances.

The inability to communicate with and control large forces in the field lead to the concept that quality reduces the need for quantity. However, with present equipment huge forces can be massed quickly at critical areas or maneuver over great distances to invelope the enemy flank and drive rapidly into critical or vital areas. The need for quality is then increased by the fact that the extent of the battle field is ever changing or subject to change rapidly to any part of the nation involved. Thus war has become more and more unpredictable, there is always the threat of airborne landings far removed from the battle field and in one day a new battle field is added. In order for a commander to mass enough of his forces to attack he must always leave some parts of his country vulnerable to an aggressive enemy. He must take risks that the generals of World War I did not even consider.

The importance of quantity was considered so great by the national leaders of France, Germany and Italy that they attempted to increase the birth rate in their respective countries. This "bid for babies" was backed by the governments to the extent of financial aid and care of unmarried mothers and to the parents of large families.

To quote from Davis, THE FRENCH WAR MACHINE. "No one doubted that the birth rate should be increased. The only question was by what method. Clemencean had recognized the im-

portance of the population problem immediately after the war when he said 'The treaty means nothing if France does not agree to have ma ny children. It is the first thing that should have been mentioned in the Treaty, for if France renounces large families we will have taken all the cannon from Germany for nothing. Do whatever you wish - France will then be lost."

General Serrigrey stated that "the key to the problem of our na tional defense is definitely found in the increase of the birth rate which thus constitutes a question of life or death for us."

Birth rate bonuses were accorded to families with three children. In many cases large families received tax reductions, and the income tax increased 25 per cent for bachelors or divorcees over thirty years old and 10 per cent for married persons over thirty years old without children after two years of marriage. Civil servants were given advantages who were fathers of large families. The advisory commission was created to include the protection of small children.

Chapter V

LOGISTICAL SUPPORT OF THE MODERN ARMY

The importance of logistical support of the modern army is well expressed in LOGISTICS in WORLD WAR II, World War II was a logistician's war. Its outstanding characteristics were the totality with which manpower and resources were mobilized and the vigor with which the belligerents attempted to destroy each other's material resources for war. Fabrication and assembly plants, refineries, laboratories, rail and highway networks, ports and canals, oil fields, and power generating installations, because of their logistic importance, were primary objects of offensive action. Development in mechanized, arial, and amphibious warfare made the logistical support of armed forces vastly more complicated and extensive."

This increase due to the weight of mechanized and armored equipment and the great quantity of gasoline both for ground forces and air forces, alone served to increase the percentage of personnel required to support the fighting units of the modern army.

All types of machines require maintenance and repair. Ordnance Units were greatly increased to keep the mechanized units rolling or at least capable of rolling. The air force requires great numbers of personnel to maintain and repair its airplanes. The increased tonnages required demanded more transportation to bring supplies to the fighting troops and consequently more men to maintain ships, railroads, highways and pipe lines.

This primiding demand all the way back from the requirements of the fighting troops eventually gets back to the industrial capacity and resources of the nation to include more raw materials, more labor, more transports, more food for the increased personnel from the fighting front all the way back to every factory and farm.

There is no nation today that has all of the mineral raw ma terial that are required to produce the varied equipment used

in building the modern war machine. To cite a few, the United States is lacking in Chromite, industrial diamonds, nickel, quartz crystals, and tin. Italy produces no chromite, industrial diamonds, mica, nickel, petroleum, phosphates, potash, quartz crystals, tin, tungstun, or vanaduim. The modern war machine demands all of these minerals and to bring them in from other nations places an additional burden on shipping.

Chapter VI

TRAINING REQUIREMENTS OF THE MODERN ARMY

The problem of training has been increased by the develop- of mechanization and aviation. The basic soldier requires train- in the use of several types of weapons and also of his part in the team of infantry artillery and tanks. He may also be re- quired to learn to operate and maintain various types of radios, telephone, tanks, trucks and recoilless weapons.

Technical training has increased both in degree and in the number of soldiers required to operate and maintain the complex equipment in use in all modern armies. The air force requires so many technically trained specialists that the train- ing problem has increased tremendously. To quote from the BIENIAL REPORT of the CHIEF of STAFF of the UNITED STATES ARMY 1 July 1941 to 30 June 1943.

"In a general way the training schedule of an air force combat group is characteristic of any other military team --- The training is given in technical schools where the pilots, navigators, bombardiers, radio operators, arial gunners, and othere become expert as individuals in their specialties. --- The expansion in the number of ground technicians trained is indicated by the fact that in the 20 year period prior to July 1, 1941 there were less than 15,000 graduates from the air corps technical training schools. During the succeeding 21 months over 503,000 men completed the prescribed courses which in- cidently had increased from 30 to 90 specialties."

The increase in training requirements to furnish all of the specialties needed in the modern army is partly compensated for by the saving in time that was required to teach horseman- ship and equitation and also the man hours required for the daily care of horses.

Amphibious training, air transportability training, and parachute and glider training also add to the total hours that must be devoted to training.

Modern warfare demands greater training of the individual because of the technical skill required and because of the increased fire power and maneuverable, the presence of leaders is further removed from the individual.

Chapter VII

THE NEED FOR DEFENSE

The need for defense and the importance of defensive measures has increased with the developments of mechanization and aviation. Increased speed and maneuverability of the modern atmies together with vertical envelopments and airial bombings have mimimized the effect to natural and artifical obstacles in the defense. Flanks resting on rivers, lakes, oceans, or mountain ranges are no longer secure.

Airplanes are capable of striking any place in the world and no nation is so large that airial attacks launched from outside her border cannot strike her vital areas.

Defensive measures must be taken by every nation at war to defend her industry, harbors, communication lines, power plants, laboratories, and shipping lanes. Thus the defense of a nation has become more complex and difficult than ever before in the history of the world. Since the stalemate on the Western front of World War I, the tables have literally been turned, for it is now in the opposite direction that the militiary mind finds the imponderable. As long as the e enemy has modern aircraft he is capable of striking damaging blows to critical areas.

In all the history of war each new invention had immediately set in motion the inventive genius of other leading nations to counteract the effect of the invention. The race between armor and projectile is still going on but no effective defense against fast aircraft has developed. Anti-aircraft guns have not been able to stop air attacks.

CONCLUSIONS

1. That developments since 1918 have caused many changes in military organizations. Armored, Ariborne, and mechanized divisions, reconnaissance, fighter, bomber, and troop carrier wings, have been orgnaized and horse cavaly and horse drawn artillery all but abanded. See chapter 2.

2. That the idea of the Nation in arms has been intensified. See chapter 3.

3. That quality has not reduced the need for quantity or mass. See chapter 4.

4. That the importance and difficulty of logistical support has increased. See chapter 5.

5. That training requirements, especially technical training has increased. See chapter 6.

6. That the need for and the importance of defense has been increased. See chapter 7.

BIBLIOGRAPHY

ANNEX #1.

Hart, Liddell, EUROPE IN ARMS. London: Faber and Faber Limited, 1937.

Davis, Shelby Cullom, THE FRENCH WAR MACHINE. London: George Allen and Unwin LTD, 1937.

Earle. Esward Mead, MAKERS OF MODERN STRATEGY. Princeton. US: Princeton University Press 1948.

Rosinski. Herbert, THE GERMAN ARMY. New York: Harcourt Brace and Company - 1940.

BIENNIAL REOPRT OF THE CHIEF OF STAFF of the US ARMY. June 30, 1943.

"LOGISTICS IN WORLD WAR II". A report to the Under Secretary of War and the Chief of Staff by the Director of the Service, Supply, and Procurement Division War Department General Staff.

Nickerson, Hoffman, "THE FOLLY OF STRATEGIC BOMBING". Ordnance Volume XXXIII, No. 172 January - February 1949.

UNITED STATES AND WORLD REPORTS.

ANNEX 2

Quoted from "The Folly of Strategic Bombing" by Hoffman Nickerson in the magazine ORDNANCE Volume XXXIII, No. 172 January - February 1949, in which he quotes Major General J.F.C. Fuller's Book.

"THE SECOND WORLD WAR - A STRATEGICAL AND TACTICAL HISTORY".

"The strategical foundations of victory lay in sea power --- the strategic bombing of Germany --- actually impeded speedy victory --- had not a single German City been bombed, and instead had half the vast manpower employed on the building of heavy bowlers been devoted to the production of landing craft and transport air craft, there can be no shadow of a doubt that --- the war in Europe would have been won at least a year earlier than it actually was." and General Fuller qu quotes from the statement on German Industry "Published by the US War Office of War Information". 'In spite of allied Bombings, Germany was able to rebuild and to extend its factories and to increase its war production until the final defeat of the German armies.

US NEWS AND WORLD REPORT

Jan 21, 1949

Bombing of Germany:

(Finding of US Strategic Bombing Survey in Europe).

In the 61 big cities bombed by the US Air Forces.

3600,000 homes were destroyed or badly damaged.

7,500,000 persons were made homeless.

780,000 civilians were injured.

300,000 civilians were killed.

But in the 10 most bombed cities - Production was restored to 80% of normal in an average of four months.

Loss of productions amounted to only 2.71 percent of ann annual German output.

And in the city of HAMBURG: 60,000 persons were killed. One third of all dwellings were totally destroyed.

Most of the industrial buildings were wrecked. But 80 percent of the city's former productivity was regained within 5 months.

Failure of strategic bombing to gain a decision - are -

Soviet bombers against Finland

German bombers against Great Britain

German bombers against Malta