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Modern Warfare



GENERAL WŁADYSŁAW SIKORSKI

Prime Minister of Poland
Commander-in-Chief of Poland's Armed Forces

2677.

MODERN WARFARE

By

General Władysław Sikorski

With a Note by

General George C. Marshall

Chief of Staff of the U. S. Army

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Contents

CHAPTER		PAGE
	Publisher's Note	viii
	Biographical Preface	ix
	Introduction	xix
	FIRST PART	
	Under the Threat of a New War	
I	Is Another War Possible?	3
II	Europe in a State of Siege and the Far-Eastern Conflict	30
	SECOND PART	
	Modern Warfare and the Problems of National Defence	
I	The Powers of the Government and of the Military High Command	83
II	The Modern Army	113
III	The Air Force and the Anti-Aircraft Defence	168
IV	The Mobilization	208
V	The Role of Surprise in Modern Warfare	222
VI	The Plans of War	233
VII	The Initial Operations, Their Character, and Their Conduct	278

IT WAS my good fortune to have known General Sikorski during those years of tragic adversity when he was the symbol of Polish hope for the liberation of Poland. Through his leadership an army of 34,000 Poles was transported from France to England in the dark days of Dunkerque, and there under his guidance has been built up into an effective fighting force. Death robbed him of the opportunity to carry his plans to fruition, but his influence will continue and his name will mark a bright page in the history of these terrible years.

GENERAL GEORGE C. MARSHALL
Chief of Staff
United States Army.

Washington, D. C.
July 27, 1943.

Publisher's Note

GENERAL WLADYSLAW SIKORSKI, Polish Prime Minister, and Commander-in-Chief, who was killed in an airplane accident in Gibraltar on July 4, 1943, combined the gifts of an outstanding statesman—perhaps the greatest contemporary Poland had—and of a keen and perspicacious military leader, who proved his great talents both in practical warfare and military analysis. His book, *Modern Warfare,* is now for the first time made available to the American public.

Modern Warfare illustrates General Sikorski's brilliant grasp of both political and military affairs. The reader should bear in mind that it was written in 1934, the time when Hitler was still preparing his ambitious plan for world domination; the period when the majority of the statesmen in the Western democracies were ruled by the illusion of pacifism, and when in Central-Eastern Europe the dominating idea was that appeasement and an understanding of Hitler was possible.

Biographical Preface

GENERAL SIKORSKI was the very incarnation of the spirit of Poland, the recognized political and military leader of the first of the United Nations to oppose Germany, the Man to whom all Poles looked to lead them back to a free, strong and independent Poland after the war. His tragic and untimely death is an event that can be measured only in terms of history. His life, spent in the service of his country, was that of a self-made man and shows better than any eulogy how great a loss Poland and the world has sustained.

The son of a gentleman farmer, Sikorski was born in Southern Poland, then occupied by Austria, in 1881. His grandfather had been a soldier of Napoleon and the family estates had been confiscated after the father's downfall. His father died when he was three, and at fifteen the boy was giving lessons to pay his way through college, first in Cracow, then at Lwow Polytechnic. He did his three years military service in the Austrian army, and had the unusual distinction of rising to the rank of sub-lieutenant and being placed in the reserve as a full lieutenant when he returned to Lwow, where he pursued his studies in civil engineering. He graduated in 1907 and was appointed to the Galician Waterways Administration.

While in college he took a prominent part in Polish

movements, was President of "Bratnia Pomoc," the Student's Welfare Association, and was active in the organization of Polish Folk Schools, the nucleus from which the splendid educational system of reborn Poland was to spring. In 1908, he organized a young men's club of military character that developed into the League for Direct Action.

In 1910 the young Sikorski married the daughter of the President of Lwow College, Halina Zubczewska. Two years later he became Secretary General of the Temporary Commission of Independent Parties, a semi-secret organization of which he had been one of the moving spirits. It directed the underground Polish movement, and this was further fomented by "The Polish Question," a secret paper published in Lwow and edited by Sikorski. In all his work for Poland from the earliest days before the last war, Sikorski was always the champion of democracy, the foe of dictatorship.

When war broke out in 1914, Poland was divided between Russia, Germany and Austria. Sikorski saw at once what a unique opportunity there would be to bring the Polish Question before the world at the Peace Conference to follow the war. He rapidly rose to be Lieutenant-Colonel and in 1917 was sent to Warsaw to recruit a Polish army. After the Treaty of Brest-Litowsk Sikorski addressed a solemn protest in his own name and that of 150 other Polish officers to the Austrian Commander-in-Chief against the new partition of Poland. As a result of this protest, Sikorski was brought before an Austrian court martial and interned in Hungary. In 1918 he regained his freedom and during the last weeks of the Austro-Hungarian Empire

he was busy organizing secret forces with which to fight against any further partition of Poland.

As the collapse of Germany approached, Poland emerged as a unified country and Col. Sikorski was appointed Chief of Staff to the Eastern Army of Poland. He suppressed the Ukrainian revolt fomented by Austria, defended Przemysl and Lwow, freed Tarnopol and the Zbrucz district. As the German armies withdrew from Poland at the end of 1918, the Russian armies advanced and occupied Wilno. They were met by newly organized Polish forces and fighting started between Poland and Russia almost automatically without any formal declaration of war. Sikorski, now a Major General, commanded the Polish IXth Division and played a signal part in the defeat of the Soviets. Peace negotiations having failed, Russia again attacked Poland in June 1920. Under a Government of National Unity led by Wincenty Witos of the Peasant Party and Ignacy Daszynski, a Polish socialist, all Poles rallied to the defense of their soil. General Sikorski was in command of the Polish Vth Army and succeeded in frustrating the Russian attempt to encircle Warsaw from the North. As Marshal Foch wrote later: "General Sikorski proved himself a chief in the full sense of the word." He attacked and after three days of fierce fighting broke through the enemy lines. The Poles won the Battle of Warsaw, known in Poland as "The Miracle of the Vistula," and called by Lord d'Abernon the eighteenth decisive battle of the world. Sikorski was then given command of the Polish IIIrd Army and with General Haller defeated Budyenny's cavalry and swept the Soviet armies out of Poland. As Chief of the General Staff he divided Poland

into military areas and efficiently organized Poland's peace time forces.

In December 1922 General Sikorski became Prime Minister and Minister of the Interior. His administration was popular, because it was just, firm and energetic, entirely free from political bias. He laid the foundation stone of the Port of Gdynia, the small fishing village which was to become one of the world's chief ports. Above all, he obtained from the Great Powers recognition of Poland's eastern boundaries settled by the Treaty of Riga and of her right to Wilno and its district. Now one of the great political figures of Poland, General Sikorski was immensely popular with the army who recognized in him a great soldier and a born leader. When his Government fell he was appointed Inspector General of the Army and later made Minister of War in the Grabski administration.

In May, 1926, Marshal Pilsudski, with the support of some of the army, seized power and a conflict with General Sikorski ensued, which led to his retirement in 1928. For several years he devoted himself entirely to the study of history and the art of war. His great work "Modern Warfare" obtained an award from the French Academy. In it he discussed modern warfare in all its phases and foresaw the vital importance of tanks, motorized infantry and air-power.

On the night of September 17th, 1939, when Poland lay crushed under the brutal and unprovoked aggression of Germany, General Sikorski decided to leave Poland and build a Polish army in France. He crossed the Rumanian frontier at 4 A.M., a few hours before the Soviet troops occupied Eastern Poland, and at 8 A.M. was in conference with French Ambassador Noel in Bucharest and General

Faury, his military attaché. On September 24th General Sikorski arrived in Paris, called for volunteers from the large mining and labor population of Poles, and on September 28th issued his first Order of the Day to the army he was forming. It read: "On taking command of the army now forming, I expect from every officer and man a conscientious performance of his duty and the utmost sacrifice. . . . We are all here to defend the honor of Poland . . . the Polish army shall not be absent from the battles that will decide the fate of Poland. . . . We are not here to play politics, but to fight for the honor of our country and under its flag."

On September 30th, President Moscicki transmitted his powers as President of the Polish Republic to Wladyslaw Raczkiewicz, then in Paris. The new President took the oath of office in the Polish Embassy in Paris and immediately appointed General Sikorski Prime Minister. After forming his cabinet, General Sikorski conferred with Premier Daladier and Edouard Herriot, President of the Chamber of Deputies. Two days later the French Chamber declared that the integrity of the Polish frontiers would be assured by France after the war. Great Britain had already declared that she would recognize no change of frontiers effected by force. On November 7th General Sikorski was further appointed Commander-in-Chief of the Polish forces, and in December the Polish National Council was created at his suggestion and Ignacy Paderewski elected President.

General Sikorski insisted in April, 1940, that Polish troops should accompany the Allied expeditionary force to Norway where at Narvik and elsewhere the Carpathian brigade greatly distinguished itself. Before the Polish force

left France, their Commander-in-Chief addressed them. He said that theirs was the great honor to fight for the freedom of a fellow country in distress. He told them that their banners bore the device "For Your Freedom and For Ours!" and that Polish soldiers fought for Freedom wherever Freedom was menaced.

Under General Sikorski's command the Polish troops fought heroically during the Battle of France. They covered the French retreat, suffered heavy losses and a number were obliged to cross the border into Switzerland where they were interned. When France fell, General Sikorski flew to London and with Prime Minister Churchill organized the evacuation of the Polish army and airforce from France to Great Britain. On June 24th he broadcast to Poles all over the world, calling them to arms. General Sikorski declared that Poland would fight on for her independence "in full understanding and with the support of the British Government." He added "Poland's army is small in numbers, but its soul is great." How great was shown in September when the Polish Air Force side by side with the Royal Air Force covered itself with immortal glory in the Battle of Britain, the first major defeat sustained by Germany in this war.

General Sikorski initiated negotiations between the Polish and the Czechoslovak Governments for a rapprochement between the two countries with a view to federation so as to realize the plan he had long cherished of Central Eastern European solidarity. To the day of his death General Sikorski continued to proclaim his firm faith in federation even after the negotiations with Czechoslovakia had been suspended.

Early in 1941 General Sikorski paid his first visit to the

United States. He was received by President Roosevelt with whom he had cordial talks. In New York he was welcomed with an ovation and after visiting Paderewski he went on to Chicago.

When Germany attacked Russia on July 22, 1941, and Great Britain declared that she considered Russia an ally, General Sikorski was quick to seize the opportunity to improve Polish-Russian relations and try to free some two million Polish deportees who had been sent into Russia.

On July 18th General Sikorski had said: "I sincerely desire understanding with Russia in spite of the great wrong which Poland received at her hands in 1939, and in spite of 150 years of deep conflict, but the understanding must be one that fully recognizes Polish sovereignty." On July 30th, 1941, the Polish-Russian pact was signed. General Sikorski had conducted the negotiations with great skill and diplomacy, overcoming many obstacles and smoothing out many difficulties. Some members of his cabinet resigned, but in Great Britain and the United States the Polish-Russian pact was received with great satisfaction.

General Sikorski left England on November 1st, visited Lord Gort at Gibraltar, then went to Cairo and a few days later the British destroyer "Kipling" took him to Tobruk where he inspected the Carpathian brigade that was defending the Lybian port and decorated many officers and men. Back in Cairo, General Sikorski continued his historic journey first to Teheran, where he met General Anders who for two years had been a Russian prisoner of war, then to Kuibyshev where a large group of Poles gave him a rousing reception, and finally he arrived in Moscow on December 3rd. There he saw Stalin with whom he talked for two and a half hours. The outcome was the Polish-Rus-

sian declaration broadcast from Moscow in forty languages and in German "so that Hitler would have the pleasure of listening to it." It stated "German Hitlerite imperialism is the worst enemy of mankind. No compromise is possible with it. Both Poland and Russia will fight, together with Great Britain, until final victory. Both countries will work in accord for a just and lasting peace."

General Sikorski returned to England by the same route he had followed on the outward journey. He had flown 15,000 miles in extremes of heat and cold, remaining more than 120 hours in the air. He had spoken many times in public, had conferred with innumerable people, had visited all Polish units and spoken, as a comrade and a leader, to men who had fought bravely for their country, had suffered the hardships of prison camps and as soon as they were free had flocked to join the colors of the White Eagle.

In February, 1942, General Sikorski reorganized the Polish National Council. After Paderewski's death, Prof. Grabski was elected President. In opening this most representative assembly General Sikorski made an important speech in which he declared that Poland had extended the hand of friendship to Russia, and that the principal objects of the Polish government were to liberate Poland and restore it to its rightful place among the nations of the world, to participate in building a just and lasting peace, to see that Germany was effectively and permanently disarmed and that all German crimes committed in Poland should be severely punished. He then pledged that the future political structure of Poland would be ultimately decided by the Parliament of Free Poland, but that it would be a Christian and democratic republican state guaranteeing the rights and liberties of all citizens regardless of na-

tional, racial or religious differences, that the predominant power in Poland would be "a true national assembly representative of the common will of the people and elected by general, equal, direct and secret vote." In the name of the Polish Government and people, General Sikorski repudiated "all systems of totalitarian government and all forms of dictatorship as contrary to the principles of Democracy."

General Sikorski flew to America a second time in March, 1942, when he was accompanied by Count Edward Raczynski, Polish Ambassador to the Court of St. James and acting Foreign Minister. He had a long talk with President Roosevelt, conferred at length with Mr. Sumner Welles, attended a meeting of the Foreign Affairs Committee of the House of Representatives and broadcast from New York to the people of Poland.

Again General Sikorski came to the United States in December of 1942, and again he found himself in complete accord with President Roosevelt and the State Department on all points. He made a remarkable series of public addresses before the Catholic University in Washington after the Honorary Degree of Doctor of Laws had been conferred upon him by the Archbishop of Baltimore; before the Overseas Press Club of America where he spoke to more than 300 editors, correspondents, commentators and other well-known authorities on international affairs; before the Polish organizations in Chicago, Detroit and Buffalo.

General Sikorski shared the regret of President Roosevelt and Mr. Churchill when Soviet Russia broke off relations with the Polish Government in London, but he maintained his realistic outlook and in dealing with a difficult

situation was solely guided by the best interests of his country.

On his last voyage General Sikorski went to inspect the Polish forces in the Near East. He left London on May 25, 1943, flying to Cairo, whence he visited Bagdad, Teheran and Beirut. On his way back to England General Sikorski's plane fell into the sea of Gibraltar.

Introduction

THIS book is the result of much thought guided by an experience which extends over a considerable period, and by studies of a technical order.

If in it I insist on the possibility of a new war, it is in order to guard against this possibility. And it is in the same spirit that, in referring to facts objectively well known, I analyse the efforts that have been made with a view to the consolidation of peace.

All available means are good to fight against war—which is the misfortune of humanity. But in politics, as in other things, the best is very often the enemy of the good. There would, undoubtedly, be immense progress in the life of nations if they could succeed in making efficacious the international guarantees of peace, by excluding or, at least, by seriously limiting the possibilities of aggression and thus effectively putting war outside the law. It would even be a definite move in the right direction if it were arrived at step by step, some time in the future. Would it not be absurd to suppose that human nature, slowly fashioned by a thousand years of history, is capable of transforming itself entirely within the space of a dozen or so years? The necessary condition for so desirable an evolution will be for a long time force—force adequately organized in the service of acquired rights. Whoever

tries to destroy this power, while allowing the constant growth of elements which are openly preparing for revenge, destroys, whether consciously or not, the surest guarantees of peace and prepares the ground for the triumph of violence and its excesses.

The search for a formula capable of solving the problem of international security does not enter into the scope of this work. The careful reader will, however, find in it an answer to this question, whenever I am led to it, by the study of the technical possibilities of a military order.

I will take the liberty however of indicating, in passing, that in a Europe which is in a state of siege through the mere fact of the existence of nations who agitate against a situation which is the outcome of treaties, peace can only be maintained by force, exercised by all the nations who are opposed to these tendencies.

While remaining thus on the firm ground of reality, and without denying the greatness of the aspirations of the Geneva Assembly, we shall deduce, from fifteen years' experience, that other paths, apart from the ones used up to now, seem to open themselves. I have not ceased, moreover, to oppose the methods which proved impractical, not only in organizing peace but even in guaranteeing a semblance of the *status quo*. In order to be efficient these methods should be profoundly modified;* this is the task incumbent in the first place on all the nations the very existence of which is menaced by these methods.

The considerations dealt with in the second part of this work as to the possible character of a modern war and the essential problems presented by national defence, are not the product of pure imagination. The forecasts are based

* *See* especially, Chapter II, Section 1 (2nd part).

on facts and *are valid only for the present and for the near future.*

The utility and the strength of an army lie most of all in its capacity to fight. Thus it must adapt itself to technical developments of every kind which have been tried out and found capable of being used immediately. That is why we pass over in silence the possibilities opened to military art by the recent discoveries in physics, particularly those which, not justifying industrial application, still remain in our opinion in the domain of the distant future. This is the case especially in the directing, from a distance, of torpedoes, tanks, and aircraft. They still belong entirely to the laboratory. In the same way the synchronization of electro-magnetic waves of emission and reception and their selectivity still remain problems to be solved.

It would be as dangerous, however, to fall so deeply into the rut of routine as to yield, in the matter of military art, to fantastic imagination. According to our view, the organization of national defence as a whole is being torn from the frameworks in which it has remained confined up to the present time. In directing the researches of military science into the new ways which are imposed on it by technical and industrial progress, the present work deals with the realities as they are from now on.

The essential bases of military art, even after the 1914–1918 war, have remained immovable in principle. It is not less true that the strategical and tactical conceptions have undergone profound modifications from the theoretical and practical point of view. But it is not certain that it will always be possible for armies, constituted as they are to-day with their diversity and with the material they have, to conduct a modern war as it is foreseen by certain

of their technicians. The contemporary organization of the national defence depends, in fact, not only on technical progress but also on the financial means at the disposal of that nation. Considerations of a budgetary order compel, as a general rule, the national defence to use obsolescent material which necessarily limits the modernization of the army. This brings with it serious inconveniences as far as training of the soldiers is concerned; and it is an evil difficult to avoid. One could certainly remedy it partially by organizing, in peace-time, industrial war production which would be ready to start at full speed in a period of political tension. Simultaneously, the training of the soldier would be intensified so that he would rapidly master his weapons and the essential tactical methods. It is clear that in this respect the problem of national defence is particularly difficult to solve for all the countries badly equipped with war material. The rich and highly industrialized countries will be organizing themselves from now on for modern warfare, hard, costly, and extremely menacing for all nations not adequately prepared for it.

If we are to believe the declarations of certain countries, which do not hide their determination to resort to the most deadly weapons to bring about the realization of their claims, humanitarian sentiments will not have much scope in a modern warfare. To count on them would be to commit a tragic error. For it would be the equivalent, for people of good will, of surrendering themselves—with the noose round their necks—to those adversaries who, without regard for international regulations, are preparing to use, in the event of war, every possible means of destruction, murder, and annihilation.

These are the reasons why I wish this work to serve as a salutary warning and in its small way to help in creating that strength which alone will ensure permanent peace.

W. SIKORSKI.

FIRST PART

Under the Threat of a New War

CHAPTER I

Is Another War Possible?

FROM the beginnings of recorded history, war seems to have been one of the norms of human existence. One would have thought that recent experiences would have had the effect of turning all mankind against war. Nothing of the sort. A few years after the last war, some persons declared that war was inevitable and, in certain circumstances, necessary.

In 1918 a plan was proposed aiming at the international organization of peace. The idea was not new; but, at that time, it seemed to be applicable to the circumstances and laid down the first foundations for an organization of this kind. The League of Nations, instituted by the Peace Treaty of 1919, was conceived as a sort of tribunal of nations whose aim was gradually to introduce a reign of law into international relations.

At the very moment of its creation however, the League was deprived of everything that could make it of real value. It was denied the right of sanction which Woodrow Wilson from the very start, and rightly, recognized as the only guarantee of its efficacy. Under the pressure of opposition encountered in his own country, Wilson, the sole upholder of this point of view, had to abandon the project of an international armed force and was forced to declare publicly, on February 14th, 1919, that the

League of Nations must remain content with its moral power. As regards material force, he said: "The League of Nations can have recourse to it only as a last resort, for the League of Nations is an instrument of peace and not of war." [1] Since then the cause of peace has been incessantly jeopardized; all efforts to remedy this have failed and the practical problem of organizing international security made no progress.

The idea of creating an international army under the ægis of the League of Nations was revived and proposed, in the name of France, in 1932, by M. Tardieu, but was abandoned a few months later. This project, which fell within the framework of the French thesis of disarmament, was attacked by Germany, who considered it Utopian. The German technicians declared on this occasion that an army, placed under the control of the League of Nations, even if practically possible, would be incapable of dealing with an adversary powerfully armed and determined to make war. The project which aimed at monopolizing, for the League of Nations, the military aviation of all countries did not find any echo there. The same thing happened to the idea of transforming the Swiss Army into an international armed force. In any case it was not practical if only because the Swiss Army, in its then state, was not capable of being adapted to such a task. The Swiss had no High Command, no effectives, no material, no collective instruction, no offensive spirit. One could hardly imagine them invading a country, even in the name of the League of Nations.

All measures discussed, with the aim of bringing about universal disarmament, failed as well. At Geneva they led to the unilateral disarmament of the victorious Allied

Powers, among them, above all, France. All negotiations which took place in this direction during the last fifteen years led to a *fait accompli*—the re-armament of the Third Reich, and the menace of a new war.

Similarly, no agreement could be reached, in Geneva, on a definition of aggression, which had been unanimously banned. Even the attempts to regulate war remained ineffective. The Geneva Protocol, which was a serious effort towards the organization of peace, based on compulsory arbitration, mutual assistance in case of aggression and gradual disarmament, proved premature; though accepted at a plenary session of the League of Nations and signed by the representatives of ten States, it was rejected shortly afterwards because of the opposition of Great Britain.

On the other hand, the Covenant of the League of Nations accepts the possibility of "legal war." According to Article XV of the Covenant, if the States in conflict reject the mediation of the Council of the League they regain, after a lapse of three months, their entire freedom of action. What is more, according to the Section 7 of this Article, "the members of the League of Nations reserve for themselves the right to act as they think fit for the defence of law and justice," in all cases where the measures adopted by the Council are agreed to by a majority vote and not unanimously. . . .

Article XVI of the Covenant, which makes provision for the application of economic sanctions [2] in the eventuality of an unlawful war against any State which infringes the obligations contained in the Covenant of the League of Nations, is worded in too general a manner to justify practical application. In particular, it leaves to the members of the League of Nations the duty of deciding in-

dividually the identity of the aggressor and the value of the sanctions to be applied, thus rendering any collective action impossible. The agreements which followed did not modify the situation very much. Thus the Briand-Kellogg Pact signed in Paris on August 27th, 1928, although theoretically representing a certain amount of progress compared with the Covenant of the League of Nations, did not introduce a general condemnation of war, neither did it insist upon compulsory arbitration, nor sanctions, which might assure its smooth working; in case of ill-will on the part of any one of the signatories it was bound to prove just as ineffective as the previous agreements. Universal but not very precise, this non-aggression pact has a moral rather than a political significance. It does not contain any positive or sufficient guarantee to countries with peaceful intentions. It might even harm them by weakening their vigilance and their defensive energies while indirectly allowing the adversary to prepare for an aggression.

In these circumstances, the organization of peace is like a myth constantly assuming new forms. The innumerable pacts and agreements concluded in the last few years are at best capable of delaying and not of eliminating a new armed conflict.[3]

The Sino-Japanese conflict which has been raging since 1931 is particularly enlightening in this respect. On February 24th, 1933, the Assembly of the League of Nations unanimously condemned the Japanese action in Manchuria—with the exception of course of the Japanese representative, supported by the representative of Siam. Japan, nevertheless, used armed force to settle her conflict with China; yet no sanctions were applied. Article XVI

remained a dead letter. What is more, the Japanese Government seemed to think itself justified in its action—for that is the meaning of its answer to the report of the Lytton Commission—according to the Kellogg Note of June, 1928, which proclaimed "the right of defence as the basis of the sovereignty of States, incorporated in all existing treaties . . . (this right) extends beyond the legal territorial limits of the State which applies it."

Thus we have evidence that the League of Nations is powerless to prevent an armed conflict, even in the exceptional case when its decisions are backed by the unanimity of the votes of its members sitting in plenary Assembly.

Must we deduce from this the failure of the idea represented by the Geneva Institution? We do not think so. As a collective guarantee and a moral framework of universal peace, the League of Nations could have been an extremely useful and desirable institution. But if, following the persistent absence from Geneva of three great Powers, the League of Nations, contrary to the intentions of its founders, has no other *raison d'être* than to serve as an instrument of a few governments, instead of constituting an independent international tribunal, we do not see how the Geneva Assembly can regain its lost prestige and maintain itself as one of the most desirable factors of world equilibrium. In any case, so long as arbitration does not prevail in international relations and is not supported by force, the League of Nations will prove powerless to prevent a new war.

To-day, as a thousand years ago, the problem of law in international relations is inseparable from the problem of force, which crops up after every war—and dominates in-

ternational relations in no uncertain fashion. There is, for the time being, no other guarantee of sovereignty for a State or a group of States but force. Force still remains the "*ultima ratio regum.*" [4] There is, on the other hand, no legal situation whether it be an internal affair of any sort or a statute defined by treaties and international agreements, imposed, accepted, maintained or defended, that is not governed by force.

However praiseworthy the efforts which tend to limit or even to suppress, in international and social life, the use of violence, it seems obvious that it would not be possible to exercise that law without compulsion. In default of an international exercise of common law, universally accepted, which does not seem to be forthcoming, it is force and force alone which decides peace or war.

Besides, does not the evolution of international political affairs, since the Armistice, clearly show that, whatever the schemes envisaged by the opposing parties, it is only on a proper balance of power that the chances of war and peace have depended and always will depend? This political evolution is accompanied—in the case of States which do not hide their willingness to envisage aggressive war as one of the means of satisfying their claims—by skilful propaganda and by systematic action which tends to destroy what still remains of international conscience.

It follows that apart from the results which can be obtained by the Geneva system, this situation requires definite measures. First of all the union and the consolidation, through alliances, of the States resolved to maintain peace (as for instance an alliance or a sensible *rapprochement* between France and the British Empire). Secondly, an active collaboration of all these States in the international

sphere supported by a modern armed force,[5] strong in its total but limited in each particular State, would be the only way to bring about, in time, the realization of the aims of the League of Nations.

It was logical enough, considering the facts, that Germany should become, after the war, the embodiment of the most fervent national imperialism. The continuous protests, which she had not ceased to raise against the Treaty of Versailles from the moment of its signature, suffice to explain the continuity of her policy during the last fifteen years. Whatever her government, from Stresemann to Hitler, the revision of the treaties remained the dogma inspiring all her steps; a dogma common to all the classes of German society which gave to the policy of the Reich a distinctly national character. Yesterday, as today, there was not a single party in Germany, not even the Communist Party, for whom the declaration of Herr Bauer, made on behalf of the Reich Cabinet on the eve of the signature of the Treaty, did not constitute an invariable postulate of the Reich's policy.[6] Thus there was no treaty, no political nor economic agreement concluded with the Reich which did not implicitly or explicitly contain the reservations included in this declaration.[7] The only new fact, with regard to foreign policy, is the revelation by Chancellor Hitler of the real springs of German policy (so shrewdly concealed by the Republican governments) by his breaking, on November 14th, 1933, with the Geneva system of international collaboration.

The Third Reich has scornfully turned away from pacifism; it admits henceforth the collaboration of foreign nations only on condition that they contribute to the resto-

ration of the German power and that they support its policy of power (*Machtpolitik*).

In reality, the continuity of German foreign policy remains based on the old tradition of the "Wilhelmstrasse," whose staff, while it formerly served Stresemann's policy, has not been removed by Hitler. Its present spokesman, Baron von Neurath, was the representative of the Weimar Republic, was also Foreign Minister in the von Papen Government and, which is rather remarkable, in that of von Schleicher. But this continuity rests in reality, and always has rested, upon a solid military framework, whose influence upon internal policy was secret at that time, but far from negligible. Nothing much has changed in Germany since the time of the Kaiser's reign and the time when General Ludendorff exercised a real dictatorship during the War. In the young Weimar Republic, proclaimed according to Scheidemann's own words "to replace the fallen monarchy, and only because something had to be put in its place . . . and which owed its existence to a sort of misunderstanding," [8] the military element cleverly maintained their positions; Generals Groener and von Seeckt were valuable helpers of President Ebert and Minister Noske. It was under the auspices of the Socialist governments, though most favourable to the cause of peace, that the military system of General von Seeckt was adopted, a system increasing to the maximum the power of the Reichswehr, while remaining within the framework of the Versailles Treaty.[9] This programme was taken up as an argument by General von Schleicher with regard to the well-known plan of re-armament; it served in fact as a basis for the Geneva Five-Power Agreement dated December 11th, 1932, which recognized the German "theo-

retical equality of rights in armament matters." [10] The ease with which the *coup d'état* of Generals von Schleicher and von Hammerstein was accomplished, just before the National-Socialist revolution, was proof of the influence of the Reichswehr High Command which, to-day, is closely collaborating, as is well known, with the Government of the Third Reich.[11]

We find, moreover, the symbolic expression of this secret collaboration of civilian and military elements in the solemn tribute paid at Potsdam by Marshal Hindenburg and Chancellor Hitler to the creators of Prussian militarism, Frederick I and Frederick II at the very moment when this "new era" commenced. In fact, the German General Staff, under a different name, remains as in the past one of the decisive factors of the internal and foreign policy of the Reich.[12]

Another undoubted trait of the German mentality is the value attached to the idea of power in all the manifestations of national life, whatever they may be. It is therefore not astonishing that Chancellor Hitler's book *Mein Kampf* should be looked upon by them as a kind of Bible; in it power is represented as the sole source of right and as one of the principal factors of international life, and consequently of the revision of the Versailles Treaty. An attempt, in favourable circumstances, to regain the whole or parts of the territories claimed, would probably win in Germany the almost unanimous approval of public opinion, if it was established that peaceful solutions could not achieve anything. This unanimity of the German nation, underestimated by the Western Powers, considerably facilitated the German moves at Geneva in Germany's fight for revision. Locarno was its first stage.[13] The next was

Mussolini's understanding with MacDonald concerning a general revision of treaties under the direction of the Four Powers. The Locarno agreement opened the way to the system of unilateral agreements, under the pressure of German policy. From then on there was no international agreement, political or economic, which was not envisaged by Germany from this angle. The successive concessions obtained in this way by the Reich gradually strengthened in Germany pan-Germanic tendencies. Thus the official paper of the Nazi Party recently wrote: "Germany is Europe's vital crux and centre of gravity. France, England, Poland, and the Little Entente are but secondary nations." As in 1914, but still more openly, the necessity of a radical change in the map of Europe is being incessantly proclaimed in Germany. In reality they want to substitute for the peace of Versailles—a German peace. What would be the outcome of this substitution? The agreements concluded in 1918 by Germany, at Brest-Litovsk and at Bucharest, show it unequivocally.

"Italy occupied as far as Genoa; small but glorious Belgium serving Germany as a path of access to the North Sea; Holland, Switzerland, the Scandinavian countries, and Poland entirely dependent on Berlin; England deprived of her colonies and France of her coalfields; the Balkans and Turkey subjected to Germany as the road of access to Asia." [14]

This programme seems to correspond to the intentions of the Third Reich, though it by no means exhausts them. But is not the mere fact that they exist and that they are proclaimed by so important a Power as Germany sufficient to stamp the reign of force as the fatal factor in international life?

We should be greatly misled as to the real significance of international politics at the present time and of their inner motives if we were to suppose that the upsetting of the balance which took place after the advent of the Third Reich has seriously affected the fundamental situation created in Europe and in the world generally by the war of 1914–1918 and the treaties which ensued. Motives have remained the same. Tactics have changed.

Let us briefly review the recent past. We can see that not so long ago there existed between Germany and Soviet Russia a certain community of political views, which expressed itself in a common effort for the revision of the peace treaties. It is clear that each of these partners looked at this question from his own point of view: the Soviets, to consolidate and spread Communism; Germany, to rehabilitate the Holy Empire. Such divergence in their aims was liable to lead to serious conflicts in future; meanwhile the important thing was to destroy the *status quo* and therefore to remove all efficacy from the institutions aiming at the establishment of an international solidarity or community of views.

The joint aim was the revision of the Versailles Treaty. But this was only the first stage, and while the revision of treaties appeared to Germany as an immediate end and one of the bases of her national unity, it was looked upon by the U.S.S.R. as a means and as one of the elements of its foreign policy.

The motives which inspired the U.S.S.R. have in fact nothing in common with those which are opposed to the partisans of the *status quo* and of the revision of treaties in Europe. They are, on the contrary, the logical consequence of the U.S.S.R.'s conception of sovereignty.

Founded on strength, the sovereignty which obtains there is a sovereignty of class, a social sovereignty which constitutes the essential principle of a long-term foreign policy. For national rivalries leading into the alternatives of war and peace, the Soviet conception substitutes social rivalry which, in the present state of civilization, brings with it the same alternatives but in the form of revolutionary wars.

The moral and political position of the Third International thus finds itself at the opposite pole to the German ideology. Peace as conceived by the Third International is evidently not compatible with the fundamental notions springing from the political actions of the different regimes which exist in Europe.

In the minds of its leaders, the Soviet Federation, founded on a class sovereignty, is the vanguard of a universal revolution, which is to be brought into being by power. The Red Army is not only an instrument forged for the defence of the Soviet Union, it is the force in the service of the Communist International.[15] Its aim is the "liberation" of humanity, as was that of the French Revolution of 1789, when the French citizens were called to the colours to carry beyond their frontiers the revolutionary idea. In the same way, the Soviet Army is, in the minds of its leaders, destined sooner or later to carry beyond the frontiers of the U.S.S.R. the victorious standards of Communism. There is no reason to be alarmed at it, but it should be acknowledged.

Thus two fundamental tendencies, presenting each an original solution of the problem of the hierarchical relations between the various sovereignties, divide the world

and find themselves at the root of the conflict the outlooks of which could be formulated as follows:

On the one hand, the exercise of national sovereignty is a privileged or even a mystical means by which is expressed internally and externally the solidarity of the spiritual and material interests of the whole community; national community is the condition of its establishment from the social, political, and economic points of view, and the irreducible unity on which international life is founded.

On the other hand, according to the contrary thesis, there is no international life except to the extent that national sovereignty is subordinated to a determined form of social sovereignty, imposed by force and based on the material, common and international interests of Labour.

In other words, in one instance international life is subjected to the evolution of national imperialism, in the other to the evolution of a social imperialism.

Between these two poles we may recognize, on one side, Germany, Italy, and Japan; on the other, the Soviet Union; we can find all the intermediary positions by which the heterogeneity of the Powers represented in the international negotiations is explained, and which excludes from country to country all similarity between the representatives and those represented, between their aims and their responsibilities.

Provoked by war and the course of events or factors of various kinds which it would take too long to enumerate here, the political and economic world crisis is thus in reality a crisis of sovereignty.

Among the human groups of north-eastern Europe and

of Asia, who differ little in their national and social points of view, this crisis has favoured the advent of the Soviet Federation. In central and western Europe, where a nation reacts in a very different way—due to character and traditions more than a thousand years old—this crisis has had the effect of arousing in some the longing for power and national imperialism, and consequently of favouring the advent of Fascist dictatorships and more or less autocratic conservative democracies.

These fundamental differences seemed perhaps less apparent at the moment when the U.S.S.R. took an active part in the fight against treaties, in the camp of the revisionists. But at that time it seemed probable to its leaders that the sole beneficiaries of an armed conflict would be the Soviets.

The advent to power of the Nazi system in Germany and the possibility of an armed conflict in the Far East had as a consequence the radical modification of the tactics of the groups of rival States, without, however, removing the possibilities of a war which might break out in future if nothing was done to prevent it in this political and social field, in Asia as well as in Europe.

Publicly and repeatedly the Italian leaders have stated that Italian policy envisages the revision of the territorial status established by the Versailles Treaty; they felt that it did not grant the Italian nation the position it ought to occupy in the world.

Without entering into details of the policy of Italian Fascism, whose realism may find its justification in our troubled times, we will limit ourselves to examining its conceptions on war and peace, in the light of the state-

ment made by Mussolini himself: "Fascism," [16] writes the Duce, "in what concerns the future development of humanity, without reference to present politics, does not believe either in the possibility or in the utility of permanent peace. It rejects pacifism which avoids the struggle and shrinks from sacrifice. War is the only thing which intensifies to their highest pitch all human energies and marks those who have the courage to face it with nobility. All other trials are but secondary and never place man face to face with himself, in the alternative of life or death." [17]

Hitler expresses himself in this sense both chimerically and brutally, regarding the use of force, and is prompted by a racial and almost mystical desire for expansion. "No one can doubt in future that this world will be exposed to the hardest struggles for the very existence of civilization. In the long run, it is always the passionate instinct for preservation which wins the victory. Under the influence of what is called 'humanity' (a mixture of stupidity, cowardice, and presumptuous pretence) it vanishes like snow in March. It is in the eternal struggle that the human species has become great; eternal peace would lead to its ruin." [18] Statements of this kind make a direct appeal to violence. . . . We shall confine ourselves to stating that, from the international point of view, in the present state of political and economic relations (as before the War of 1914) the possibility of an armed conflict sooner or later, remains in a latent state from year to year.

It would be absurd, contrary to logic and to the most elementary laws of history that, using strength inside their countries, the leading parties in countries with a dictatorial regime, the U.S.S.R. not excluded, should believe

in the possibility of a peaceful settlement between rival nations or rival imperialisms, apart from truces of a more or less durable character which are broken by the necessities of the moment.

And so the only thing which counts is not merely the establishment of these facts, but the tendencies which they reveal in Europe: on one side the will to stabilize the Versailles peace, on the other the will to revise it.

However, disputed possession can only engender truces, which do not suppress rivalries, and can at best only extend them. What is at stake is the balance of power—an unstable balance utterly dependent on political and economic contingencies. Agreements concluded in this spirit only make the chances of peace and war about equal.

Nothing, therefore, should be stated in more precise terms than the notion of peace for whose organization efforts were made at Geneva and which was intended as being more than a truce: we should simply recognize that there was no question of *peace as such* but simply of *rival conceptions of peace*. Peace of Versailles, French peace, German peace, Soviet peace, etc., conceptions which are, until a new order exists, irreducible; *any territorial recasting would only transfer, without suppressing, that fundamental irreducibility.*

It is necessary, therefore, to ask oneself what real value as to the possibilities of a lawful peace is to be found in the agreements or treaties concluded either between States or in the League of Nations.

It is clear that apart from their tactical value as provisional truces, they have none, except that they give

pledges to public opinion. In order to be really valid, even relatively, every political or economic international agreement ought to be part of a legal agreement freely accepted by all the parties. But this is not the case. All possibility of legal settlement is excluded by the mere fact that it is the principle of legality itself which is questioned, and subordinated to desire for power either of national imperialisms or of social imperialisms.

It is undeniable, on the other hand, that peoples such as the French and the British who, by the force of events are to-day opposing imperialist tendencies, have always shown, in difficult moments, that national unity is not an empty word: their patriotic instinct is backed by tenacity and character resisting any trials. But this is not enough to avoid war. The policy of their governments for fifteen years compelled their statesmen to seek peace on equivocations which have had the effect of arousing, in the others, a tendency to revenge. And so a general European understanding no longer seems possible, except under the threat of a danger which would lead to the disappearance of Western civilization.

Inside Europe, however, countries which have had their independence restored by the Versailles Treaty would form a block against all attempts at a revision. "The mere fact of the existence of every German is in itself a protest against the peace treaties," [19] the existence of every Pole, every Czech, Serb or Roumanian is in itself a protest against all attempts at territorial revision. It is beyond doubt that Poland and the other countries in question are firmly resolved unanimously or by the will of the majority of their population to oppose with

arms any attempt which, in the present state of international relations and under any pretext, aims at the amputation of their territory.

The slogan "revision," when imposed and not voluntarily accepted, is clearly a slogan of war. This fact was apparently not sufficiently appreciated by those who initiated the Four-Power Pact. While its object was to cement the union (very desirable in so many respects) of Italy and France as one of the tokens of a gradual consolidation of European relations, the slogan transformed the Four Power Pact into an instrument of war. Directed on the one side against the League of Nations, it tended, on the other, to destroy the alliances which bound the countries in the centre and east of Europe to France. There was in the minds of its initiators a new partition of Europe, but this time involved in it was a group of a hundred million people. It is clear that this new combination of Powers would not favour any long-term peace.

The recent attitude of the Soviets, under the pressure of events in the Far East and of the new trends of German policy so clearly outlined in Hugenberg's memorandum, seems, nevertheless, provisionally to constitute a guarantee of stability of the bordering countries. In case of a conflict, the isolation of the U.S.S.R. might in fact lead to the end of the Soviet regime. One would not be surprised then at the political *volte-face* of the Third International. An article in *Pravda* of May 10th, 1933, sums up quite clearly Moscow's change of front and the motives which inspired it: *"The desire for revision is the desire to partition the world anew* [20]—a re-division which would be to the detriment of one of the two imperialist camps. The peace dictated by a new and victorious coali-

tion would be a peace obtained by violence. The word revision is simply a different name for a new world war, which will be more horrible and more cruel. The proletariat, although a sworn enemy of the peace of Versailles, cannot fall in on the side of the imperialist Powers who, by the unleashing of a new war, *aim at a new partitioning of the world.*"

The Soviet solicitude for peaceful solutions seems to be as determined as is their desire to maintain the *status quo.* It is evidently in direct proportion to their internal stability and their political situation. This state of things, advantageous for the moment, may last for some time; but it is dependent on events, and notably on any upsetting of the present balance of power, a possibility which cannot be altogether excluded. Nevertheless, the wisest thing to do seems to be to make the best of the situation, being careful not to be misled. The change of front of the U.S.S.R. might be a sign of greater changes. Under these conditions the entry of the U.S.S.R. into the League of Nations or into a system of regional defence (such as the Eastern Pact) as advocated by France, might be not only useful but beneficial in prolonging the state of peace. It would however be premature to see in it the principal guarantee of lasting stability in Europe.

As far as pacts and agreements concluded with States having non-Communist regimes are concerned, we know in fact what the opinions of the Soviet Union are. They seem to conform to these words of Lenin, which nothing in Soviet policy has yet invalidated: "Let us accept all the obligations which may be asked of us, but when the hour of decision strikes, let us not forget that the honour of a Communist consists in fulfilling them only to the ex-

tent to which they correspond to the interests of the proletariat."

From this point of view, the renewal of the Berlin treaty, the non-aggression pacts signed by the Soviet Union and its entry into the League of Nations, although contradictory in principle, are part of the same tactics, so clearly outlined by Lenin. If we consider on the other hand the stupendous budgets devoted by the Soviets to armaments and vast investments in heavy industries, the full-scale launching of which is not due for a few years because of the difficulties of the internal situation, we shall easily understand the practical side of the present peaceful policy of the Soviet Union.

Among the former Allies, France is the only country which in all the international negotiations has declared itself in favour of the preservation of the treaties concluded in 1919 and 1920. The Locarno agreement as well as the disarmament projects of Edouard Herriot and Paul-Boncour, remained in certain respects within the framework of the treaties. And even the theoretical recognition of the "equality of rights" of Germany in the sphere of armaments does not change the fundamental continuity of French policy. It has expressed itself during the last fifteen years by a permanent tendency towards the consolidation of the Versailles Treaty, at the price of certain compromises and concessions. Only once France seemed to abandon this path, on the occasion of the "pact of understanding and collaboration" initiated by Signor Mussolini (March 18th, 1933). Initialled on June 7th, the "pact of understanding and collaboration of Four Powers" was never signed. The resolution of the Commission for For-

eign Affairs of the French Chamber of Deputies (Autumn, 1933) seems to exclude its ratification in future. The change which occurred in the French policy towards the Soviets seems to point in a similar direction.

It is of course difficult to admit that France would resign herself to tolerating the arbitration of a sort of Holy Alliance on lines similar to that which operated after 1815.

Doubtless, the real continuity of French policy has been, at least up till now,[21] less the outcome of a definite plan of action than of a tendency of public opinion, crystallized round the formula: "No war, no armaments," and engendered by the instinct for preservation. Be this as it may, it would be the proof of evident ill-will not to recognize that neither the French nation, in accordance with this state of mind, nor the French Army have any aggressive intentions towards other countries. They constitute, on the other hand, the most serious guarantee for a lasting truce in Europe. Whoever tries to-day to disarm France, is working consciously or unconsciously for the eventuality of a new war. That was, recently, a condition for the maintaining of the Vth Section of the Versailles Treaty. In future, this postulate may possibly regain its value in consequence of the regulation and limitation of armaments of the Third Reich.

Unless we wish to liquidate a past which does not date from yesterday, we must admit that the preservation of peace and of the *status quo*, dearly paid for by four years of war, will not be fulfilled unless sufficient strength is organized to defend this peace and to make international life normal again.

It is vain in fact to appeal to the rights of people to self-determination, to historical, ethnical, economic or social rights, if one does not possess sufficient strength to defend those rights firmly: even the weakness of the possible adversary cannot alone guarantee security. *Post factum* arbitration whose legal basis would be constituted by the rights of one of the parties obviously cannot be accepted by the other party which questions these very rights. In other words, one cannot speak of legality where there is a lack of legal matter, where the questionable points are resolved by the parties, where there are no laws, no judges, and no sanctions.

As long as the human communities, social or national, and man himself are not capable of accepting the mutual sacrifices imposed by a true peace, they will invariably be compelled to appeal to force in order to settle their differences. War will seem to them a minor calamity compared with the renunciation of the spiritual, moral, and material interests represented by the communities of which they form a part.

There is for a nation which wishes to remain one, a misfortune greater than war, namely the loss of its rights to an independent existence according to a national statute. That national feeling is not a delusion, may be proved by the example of Poland. A hundred and fifty years of bondage have not brought about any change in this sentiment. The history of Poland can serve as example to show that, whatever the precedents on which it is founded, a nation which wishes to remain such is condemned to live in revolt when it is deprived of its rights to an autonomous existence; a shrunken sort of life which weighs equally heavily on the lives of all its citizens.

But one cannot wipe out the past any more than one can direct the present to one's liking. As in the past, at the present hour there is no other guarantee of existence for any State or group of States except strength and unity.

As long as the problem of disarmament is not a question of international common law, the world will remain divided, and every collectivity, national or federal, will be compelled to look after its own security.

Very rarely, in the course of history, have the respective interests of the nations, or of groups of States or nations, been opposed to each other with such violence. Never before have the differences dividing them set in motion more formidable instruments of action or bred more tenacious hatreds. But the risks of war incurred are in direct proportion to the power of these factors and these means. And so, only the terrible consequences which it would entail have so far prevented the possibility of a new war.

Be this as it may, in the present world peace is nothing but an armistice. It will last only as long as its supporters are able to unite and to defend it, by force if necessary. It is possible to desire peace, defend it, or impose it; it cannot be bought, no matter what price is offered for it.

REFERENCES

1. The speech made on December 29th, 1933, by President Roosevelt in Washington is characteristic of the continuity in the political views of the executive power in the U.S.A.: "Understanding must be the ground in which the fruits of friendship will grow. . . . The appeal addressed by President Wilson to the world to ban all future wars inflamed the imagina-

tion of the masses. Political advantages, personal prestige, national expansion—such were the worries amidst which the League of Nations was born; from its childhood, it supported this heavy handicap. In spite of everything, directly or indirectly, thanks to the League of Nations all the States of the world have been searching for better means than those used until then to adjust their differences. . . ."

2. The economic blockade, which could undoubtedly become quite effective, is subordinated to the decision of the naval Powers. Among the latter neither the U.S.A. nor Japan are members of the League of Nations. It may be useful, perhaps, to recall on this subject the fact that the blockade of the Central European Powers, proclaimed in 1914 by the Powers of the Entente, produced visible results only in 1917. The attempt at a blockade by submarine warfare undertaken by Germany failed definitely towards the end of 1917, in spite of its initial successes. It seems to result from this that economic sanctions, even if the League of Nations had full power to apply them, could have no more effect than in the past. Inoperative with regard to strong countries, they would be effective only with regard to countries badly off economically, and particularly unfavourably placed by their geographical situation.

3. Such is especially the case with the Four-Power Pact and the Non-Aggression Pact signed on 26th January, 1934, by Germany and Poland.

4. The Soviets in particular have understood this.

5. Cf. Second Part, Chapter II, Section 2.

6. "The Government of the German Republic is ready to sign the peace treaty, without, however, recognizing by this act that the German people was the originator of the War, and without accepting any obligations resulting from Clauses 227 to 230 of the Peace Treaty."

7. In its Note of July 20th, 1925, the German Government considered "as natural that there should be no question of re-

moving for ever the possibility of adjusting the existing treaties to changed situations by peaceful agreements." Two months later, the same Government specified that "the possible entry of Germany into the League of Nations is not to be interpreted as a recognition of the allegations formulated to serve as basis for the international obligations of Germany and which impute a responsibility to the German people."

8. Excerpt from a statement by Scheidemann, published in Paris by the *Capital* of December 17th, 1933.

9. If we consider that at that time France occupied Mainz and Koblenz and that she held Frankfurt-am-Main, Darmstadt, and the basin of the Ruhr, the work of General von Seeckt was an act of faith rich in consequences for the future. It should be added that the Social Democrats voted regularly for the Reichswehr estimates. To the reproaches made by the Communists that they "obeyed the Minister of the Reichswehr," Scheidemann made the following answer: "When the defence of the German nation and of the German Fatherland is at stake, we should rather follow Minister Groener ten times than the Communists once."

10. The firm belief of the negotiators that this agreement, so important from the international point of view, would have only a moral value without practical significance, is characteristic of contemporary ideology and politics.

11. The part assumed in Germany by the Reichswehr during the events of June and July, 1934, was, as is well known, decisive. The execution of General von Schleicher and of Captain Roehm is in keeping with the decisions which subordinated the Brown Army to the Reichswehr. The Führer's partial disavowal of the revolutionary formations which had helped him to achieve power, and the striking marks of approval conferred on the regular forces of the Reich, form one of the stages in the natural evolution of the internal situation in the Third Reich.

12. After the eviction of Generals von Seeckt and von Ham-

merstein, partisans of close collaboration with the U.S.S.R., the leading members of the Reichswehr have adopted (for how long?) the Rosenberg Plan, which consists in isolating France, seeking understanding with Great Britain, and dismembering Soviet Russia.

13. Here is what the *Neuer Vorwärts* wrote in February, 1934: "On May 6th, 1925, Stresemann invited a few journalists in order to make a statement on his policy towards France. It was at the time when Locarno was being prepared. The Minister declared that the territorial losses in the West were for the moment impossible to avoid, but that in the East, on the contrary, the revision of treaties was not only possible but necessary. To bring about the possibility of this revision in the East, to take back the Corridor and Upper Silesia—was the meaning of his agreement with France. This aim would be attained in four or five years at the longest."

14. Excerpt from a speech made by General Ezio Garibaldi in the Italian Chamber of Deputies on May 22nd, 1933.

15. On the occasion of the sixteenth anniversary of the creation of the Red Army, the Central Committee of the French Communist Party published the following Order of the Day: ". . . The sixteenth anniversary of the Red Army is for us not only a holiday, it is also, and above all, a day of the mustering of our forces in order to stress mass action and to strengthen the organization of the Communist Party. It is for us, especially, a pledge of new victories." (*Humanité,* November 25th, 1934, No. 12856.)

16. B. Mussolini—*Le Fascisme, Doctrines et Institutions.* Paris, 1933, Denoël et Steele.

17. The speech made by Signor Mussolini towards the end of August, 1934, on the occasion of great manoeuvres, in front of 5,000 officers of the reserve (just after the new military law promulgated recently in Italy), is an admission of the conti-

nuity in the thoughts and acts of the Duce. Let us quote the following passages:

". . . Nobody in Europe desires war, but the idea of it hangs on a thread; it can break out any moment."

"At the end of July, an unforeseen situation presented itself, similar to that of 1914. Had we not sent our divisions to the frontier, complications would have arisen which could not have been solved except by the voice of the guns. One should not be ready for war to-morrow, but to-day. We must become a military nation, even a militarist nation, a warring nation, I may add. The political, economic, and spiritual life of the nation should be based on its military necessities."

"Since certain nations rise and others fall, the fact remains that, in spite of good-will, of conferences, of protocols, war will decide, throughout the centuries, the fate of nations. The whole nation is ready to-day to respond as one man in case of necessity."

18. A. HITLER—*Mein Kampf*. German edition, 1933 (translation).

19. *Frankfurter Zeitung*, January, 1933.

20. The *Pravda* was not ignorant of the Rosenberg Plan, which is directed, in the first place, against the U.S.S.R.

21. It was, as is well known, deeply modified under the pressure of circumstances (the re-armament of the Reich), in view of the organization of a common front of peaceful nations against war.

CHAPTER II

Europe in a State of Siege and the Far-Eastern Conflict

1. THE RE-ARMAMENT OF THE THIRD REICH

APART from the manifold factors of internal order, such as tradition (language, manners, customs), and interests attached to it, one of the most constant historical laws is that the evolution of a nation is always precipitated towards a reinforcement of national unity under external pressure. Germany is no exception to this rule. It crystallized in her claims against the Treaty of Versailles. There is hardly a single German who is not convinced of the total absence of responsibility of the Reich in the origins of the 1914–1918 war, and who is not persuaded that the present frontiers "burn and bleed" (*die brennende Blutgrenze*). These convictions seem to justify more than ever before the political principles of Frederick II, Bismarck, Clausewitz, Ludendorff, and Frietsch, who glorify war as the only instrument of national power capable of resuscitating Greater Germany. This is why the formula of Professor Banse: "Only war can lead Germany from her present misery to a prosperous future," seems to have been raised to the level of a watchword by the leaders of the Third Reich.

A recent declaration by Gottfried Bem (January, 1934) in the *Berliner Boersenzeitung* gives a good illustration

of this state of mind: "A century of great struggles is just beginning. . . . We have already entered on the period of destruction: the thunder will unite with the sea, fire with water; with the same implacable rigour the younger generations of the white race will fling themselves one against another. Thus one thing remains to be done: to educate brains, powerful brains, which will know how to defend Germany. Fierce brains, lightning jaws. He who sees the new humanity in a dream is a criminal; he is a criminal who imagines the future instead of forging it; because the new man will have to know how to fight. . . . Never again will there be peace in Europe. . . ."

The motives which inspired Chancellor Hitler to issue the decree [1] of April 7th, 1933, put into force on January 30th, 1934, with a view to attaining the unity of the German nation, do not even allow of any doubt as to the principles which he incessantly affirms: "Had the German nation possessed, during its historical evolution, *this gregarious unity* [2] by which other peoples have benefited, the German Empire would doubtlessly be to-day the master of the globe. History is unable to state whether, in this manner, we should not have achieved the realization of what so many blind pacifists hope to get to-day by begging, whining and whimpering: namely peace, not supported by palm-leaves, waved amid their lamentations by the weeping pacifists, but established by the victorious sword of a master people who would have taken the world in order to put it into service of a superior culture." [3]

These declarations of principles would not have very much value and we should certainly not attach any importance to them if they were isolated and if they were not confirmed by facts. It is true, many German statesmen,

Herr Hitler among them, have given assurances of their peaceful intentions; certain recent agreements with neighbouring countries would seem to prove it. Has one to conclude then that in the present state of the political and economic situation the Third Reich would prefer to obtain the satisfaction of its racial, political, and economic claims in a peaceful way rather than by war? Thus presented, the problem seems insoluble. The Third Reich would admit willingly, in fact, that its programme of expansion is being accomplished without bloodshed and without cost; it tries to achieve it by its policy. But it does not condemn for that reason the use of violence, if needed; and as its programme cannot be precisely classed as a philanthropic enterprise, and as, on the other hand, its neighbours do not seem to admit its intention without reservation, it is preparing methodically the instrument which is to serve its will to power.

The only new fact is that there are no longer, in this respect, two Germanies, as certain politicians were fond of thinking a few years ago, but one Germany. In fact, this innovation does not change anything in the continuity of German policy; it simply accelerates its realization.

From 1921, the Weimar Constitution (clauses 8 and 79 of the Constitution, *Wehrgesetz* of March 23rd, 1921) had provided the bases for the military power of the Reich, suppressing the autonomy of the States in matters of national defence, and conferring even in peace-time the supreme command (*Oberbefehl*) of the Army to the President of the Reich (*Oberbefehlshaber*). By virtue of this law, the President of the Reich can transfer his functions to the minister of the Reichswehr (*Kraftdelegation an Stelle des Reichsprãsidentes*). In reality, the command of

the land armies rests with the chief of the Army Command (*Chef der Heeresleitung*), that of the navy with the chief of the Command of the Navy (*Chef der Marinenleitung*). In war-time, the officers who are the holders of these two high posts assume the supreme command of the armed forces of the country. With the complete unification of the Reich, decreed by Chancellor Hitler, which suppresses what still remained of State individualism, especially in Bavaria, this system has become much simpler than that which existed before the War; [4] it makes easier the task of the General Staff which under the name of *Truppenamt* [5] has also been completely reorganized and unified.

(*a*) *The Reichswehr.* The recognition of the equality of rights of the Reich with regard to armaments seems to have no other meaning than to regularize an existing state of affairs; it is a mere formality. The creation of small new units of all arms had in 1933 increased the total effectives of the active army to 180,000 men (instead of 100,000). In April, 1934, it already exceeded 200,000 men.[6] It is fair to predict that in 1935 these effectives will reach 400,000.[7]

The equipment of the Reichswehr, as it was set up in 1919, was 50 per cent above the limits authorized in quantity and quality, not counting the secret stores of arms and war material of the *Grenzschutz.* Contrary to the clauses of the Treaty of Versailles, each battalion of infantry includes a section of anti-tank guns and of light mine-throwers. (M.W.18.)

Each squadron is provided with nine light machine-guns (M.G.13); each regiment of cavalry includes "one heavy squadron," which contains one section of heavy machine-guns, one section of mine-throwers and one com-

munications section. The cavalry divisions are provided with armoured cars. The artillery has been entirely modernized and reorganized. The A.A. artillery is in the course of reorganization.

As to its quality, the Reichswehr is an army of picked men, which has a selected body of officers, N.C.O.s and men, completed by elements chosen from among the numerous volunteers at the discretionary power of the chiefs. Homogeneous in every respect, instructed according to modern necessities, the officer corps of the Reichswehr has been thoroughly adapted to the needs of modern warfare.

It is clear that these fragmentary data, which are easy for anyone to verify quite openly, by the study of the budget and the manifestations of everyday life, are probably an underestimate of the real state of affairs. The real strength and the very modern quality of the German Army will not be disclosed until the day of the German entry into war.

(*b*) *The Schupo and the Territorial Army.* There exists in Germany, as is known, besides the active army, a State police, the *Schutzpolizei* or *Schupo.* It is composed of troops quartered in barracks and equipped with modern weapons, numbering 100,000 trained men. Since Hitler's advent to power, the *Schupo* has been reorganized in such a manner as to adjust itself exactly to the territorial organization of the Reichswehr: the number of its staffs has been increased from two to seven (inspectorates of police). In flagrant violation of the Treaty of Versailles and of the Locarno agreement, two of these staffs have been installed in the demilitarized zone (Dusseldorf and Frankfurt-am-Main). The formation of units of the *Schutzpolizei* along the whole French frontier, contrary also to the aforesaid

agreements and treaties, is proof of the part which the militarized police will play in war-time, namely that of a covering screen.[8]

The Brown Army. One of the most important gaps of the German military system was, until now, the lack of numerous and well-trained reserves. If the doctrine of General von Seeckt was that of a smashing offensive performed with the help of reduced but picked armies—it was imposed by circumstances; it was only a stage or a starting-point for a systematic development with a view to the arming of the nation. The German military art has always been based, in fact, on the use of human masses as numerous as possible, as in 1870 and in 1914. In accordance with this tradition the Government of the Third Reich, which has not departed from the rule, has adopted resolutely the principle of Wilhelm I: "the Prussian Army will in future be the Prussian people in arms."

The reserves comprised, in 1918, twenty-one classes of former combatants, from the 1901 class to the 1921 class; but the youngest would to-day be as much as thirty-four years of age. Thus Germany could not rely at present on more than the seven last classes of former combatants, about 1,500,000 men; these effectives will be reduced in a few more years to very little and might be used mostly for services behind the front line.

So after having introduced obligatory military training [9] of young men and put sports associations under State control, the Third Reich started to organize the Brown Army, which comprises the *Schutzstaffel* (S.S.), the members of which take periodical courses with the Regular Army, and the *Sturmabteilungen* (S.A.). These last have lately absorbed the younger classes of the *Stahlhelm*, and their

total effectives would be, according to Captain Roehm, at that time Chief of Staff of the Brown Army and Reich Minister without portfolio, 2,500,000 men in case of mobilization.[10]

The active shock formations (*Aktive Fins-S.A.*) seem to number, since their reorganization in the summer of 1934, about half a million men; the active protective infantry formations (*Aktive Fins-S.S.*) about 200,000 men; the mechanized S.A. and S.S. formations more than 250,000; the motor-car corps about 100,000 men; the formations of cavalry, the field military police (*Feldjäger-Corps*), etc., about 60,000 men; the total is more than 2,100,000 men (cf. the table giving the diagram of the organization of the Brown Army). The Brown Army composed of mounted troops, of infantry, as well as mechanized units, of a motor-car corps and an air force, has its own liaison detachments with all the necessary technical material, including wireless, at the disposal of the High Command. It has, besides, companies and battalions of pioneers, and a hospital service, militarily organized. We have thus a real territorial army planned on a grand scale, and with the character of a militia.

It is clear that the Reichswehr will serve as a basis for mobilization in case of war.[11] It will be able to supply reserves trained in its own ranks, as well as in those of the police (at present 300,000 men). It will also make use of volunteers who have served a probation period in its ranks.

From the beginning of 1934, the Reichswehr could already, by means of individual call-ups, call to the colours as many as 1,500,000 men. But this was not sufficient, if need be, for a long war; the troops recruited by the Reichswehr are intended to serve, in fact, only as shock

troops in view of lightning operations. The Brown Army is thus designed to supplement the mobilized Reichswehr and to assure the covering of the frontiers of the country.

These formations, para-military in principle, but in fact militarily trained, are divided inside the country into seven *Obergruppen,* which correspond to the seven military districts. The fifth and the sixth groups are assigned to the theoretically demilitarized districts of the Western Provinces. There is also an eighth group, represented by the Nazi organizations in Austria.

Each of these *Obergruppen* [12] (whose formation reminds us of an army corps) comprises three *Gruppen* (divisions), distributed according to the needs of mobilization. The sub-groups are divided for the same reason into districts, corresponding to the "*Landwehrbezirke*" of pre-War times. The *Standarte* S.A. all wear the same numbers as the regiments of the old Imperial Army and those which were created during the War. The command of the *Obergruppen* is stationed in the same centres as the regular divisions: in Berlin, Dresden, Munich (transferred recently to Hanover for strategical reasons), Münster, Stuttgart (transferred to Frankfurt for the same reasons), Stettin, and Königsberg.

Without under-estimating the fighting value of the Brown Army, one can surmise that very little, and a very short time, would suffice to link into an organic whole the elements which are at present only in juxtaposition, but whose fusion would constitute one of the most considerable war-machines of our times.

It is not easy, on the other hand, to admit that this organization, officially para-military,[13] is rendered necessary solely by the needs of interior policy, especially when

we note that it has been accompanied for several years by the intensive construction of a net of roads and railways whose economic need is only relative, but whose strategical significance is quite obvious. The programme established in 1933 by the Government of the Third Reich comprises notably the construction of two motor roads, one from Lubeck to Basle through Hanover, Frankfurt-am-Main and Karlsruhe, the other from Königsberg to Munich and the southern frontiers, through Danzig, Stettin, Berlin, Leipzig, Nüremberg. These two roads are to be cut by motor roads: Hamburg–Berlin, Hanover–Berlin, Frankfurt-am-Main–Leipzig–Karlsruhe–Münich, and completed by the transverse motor roads from east to west, from Berlin and Leipzig to Breslau and Beuthen.

And so, even if the construction of this net of 10,000 miles of roads for heavy traffic had not been envisaged with a strategical end in view, directly linking the industrial and administrative centres with the frontiers, it is calculated to ease the mobilization and concentration of the German Army considerably.

The effect of this is that in the present state of its military and para-military organization, by applying to the Reichswehr the system of individual mobilization and to the territorial army that of a general mobilization, Germany can quite easily treble the Reichswehr and progressively mobilize several million men.

As far as armaments are concerned the German Army has had a modern equipment ever since 1933. It did not even lack heavy artillery or armoured cars. The German heavy industry has, in fact, transferred its war production abroad since 1919. Thus Krupp's have purchased the

majority of shares of the Swedish firm Bofors which was able to produce big calibre guns; the firm of Ebhart from Dusseldorf has entered into a partnership for the same reason with the firm Smit in Rotterdam. Now the war industries have again started production in Germany itself.[14]

As to the setting in motion of the German war industry, a study of the military budget of the Reich is specially instructive. The Government of the Third Reich, in particular, assigned in 1934 80 million marks to the reserve of military material, which is an increase of 192 per cent on the previous year. If we add to this the fact that the sums assigned to the maintenance of arms have grown from 50 million marks to 137.7 million, it seems that for Germany the shortest time would be enough to possess entirely modernized war material.

If one considers, on the other hand, that the military budget which until 1933 oscillated round the sum of 700 million marks, has been increased this year to 894.3 million (an increase of 26 per cent), it seems obvious that such heavy sacrifices by a nation in bad economic circumstances are not made without a well-defined intention. Nor is this all; we should add 210 millions assigned to the air force, 250 to the Brown Army, 190 to the State police, plus credits granted to the *Technische Nothilfe* and to the General Inspectorate of Communications. The total sum devoted by the Third Reich to the organization of its armed forces at present exceeds 1,600,000,000 marks.

Such preparations should arouse the attention of the Reich's neighbours all the more as the principal objective of the operational German Army is, as is known, in the first place to paralyse the mobilization of the adversary in case

of war. As, on the other hand, it is clear from numerous declarations that Germany has no intention of making things more difficult for herself by considering human rights, and that she will not have any scruples about employing every means at her disposal, including chemical and bacteriological warfare, we have to be prepared for a rapid invasion, without official declaration of war, which would give Germany, as her leaders consider, the advantage of strategic surprise and all the chances of a quick decision. The massive and progressive preparation of formations for reinforcements, by succeeding steps, is nevertheless provided for; as it requires much time and material, its realization would present serious risks if the adversary or adversaries were to be on the alert.

(*c*) *Industry.* It is not possible to specify to-day what can be or could be the quantitative and qualitative value of the military stores in Germany. The Government of the Third Reich deals with its budget as it thinks fit, without any public debates about it in parliament. It is thus quite easy to maintain a veil of secrecy over its foodstuffs, its stocks of raw materials and the extent of industrial mobilization. There are, however, some serious indications which lead us to presume that the launching of war production in Germany would be very rapid. The Inter-Allied Commission of Control already noted at the time that one year would suffice for Germany to regain its power of industrial output of 1917–1918. From December 1st, 1933, German industry has resolutely taken this path.[15]

In particular, in the very midst of the Ministry of the Reichswehr, the *Waffenamt* has devoted itself with a re-

markable continuity of views to the adaptation of civilian industry to military necessities.

On the other hand, the persistence with which Germany has been working, since the War, to make herself independent of foreign countries in the domain of raw materials, is worth attention. She has already succeeded in so far as the chemical industry is concerned, with the exception of arsenic and iodine. She still lacks nickel, manganese, iron, zinc, copper, and lead, metals which, however, she has imported on an abnormal and massive scale ever since 1933.[16]

The Reich has made itself independent of foreign countries for the production of sulphur, of sulphuric acid, of bicarbonate of soda, of hydrochloric acid and of camphor. By a special process of electrolysis the Germans can produce to-day their own aluminium without importing bauxite. Benzol extracted from coal or coke-tar, and mineral oils extracted from the brown anthracite of Leuna or from lignite will soon totally supplant the liquid carburants and the mineral oils, the scarcity of which was cruelly felt in Germany during the Great War.

The production of synthetic nitrogen makes the recourse to nitrates from Chile superfluous. The nitrogen which in time of war is the essential element for the production of explosives and of certain poison gases, to-day occupies the first place among the chemical products manufactured in Germany. The German nitrogen industry is the first in the world, as its production reaches almost 50 per cent of the world total. For cellulose, the Reich holds the second place. Its chemical industry employs about 350,000 workers and is by far the most powerful on the European continent.

The vastest cartel of Germany and of the world is the *Interessengesellschaft der deutschen Farbenindustrie A.G.;* its share capital is officially 1,200,000 marks, but its real wealth is at least double this sum; it groups hundreds of factories and of mines now in full activity. Methodically sustained and subsidized by the Government, these factories are equipped for the production of explosives and poison gas. We must not forget, in fact, that chemical warfare is considered in Germany as "German warfare." The experiments and tests directed by Professors Haber and Hauslian, in close collaboration with the Minister of the Reichswehr, do not allow the slightest doubt as to this subject. Germany is preparing herself resolutely for chemical and bacteriological warfare.

(*d*) *The Military Air Force.* In 1918 there existed in Germany thirty-five aircraft factories which constructed, during the war, a total of 50,000 machines, and twenty-five engineering works in which, at the same time, 48,000 engines were manufactured. At present there are in Germany eleven aircraft factories and seven engine factories in full swing. All the big aircraft factories, Junkers, Dornier, Rohrbach, Heinkel, Arado were, from 1924 onwards the owners of foreign firms which they founded mostly with essentially military ends in view, and none of which they retained as soon as production in Germany could be started again with intensity.

Thanks to this organization, the Germans were able to continue, after the cessation of hostilities, to improve and develop their military air force, in spite of proscriptions aimed at limiting it and in spite of the activities of the Inter-Allied Commission of Control. Besides, the obliga-

tions paralysing them in this field ceased to exist in 1926. So we are the witnesses to-day of a unique fact. A people deprived of the right to possess a proper military air force, constructing the most up-to-date and most perfected of military aircraft and supplying a large number of models to foreign countries, if not in the form of fully fitted machines, at least under the form of licences granted to Soviet Russia, to Turkey, to Japan, Sweden, Denmark, Holland, Italy, and even England, and America.

Consequently it is difficult to imagine that the Reich would be short of aircraft in case of war, when we consider that the German aircraft industry, powerful but run at a loss, has only been able to subsist on official subsidies. The Government of the Reich had enough means to turn its attention to aircraft production. We may be quite certain that the German aircraft for commercial use are constructed in such a way that the smallest adjustments could make them suitable for fighting and adapted to war service. In the present state of affairs Germany can already boast of an air fleet of about 800 bombers of medium or heavy tonnage, as well as of 600 aircraft to be used as observation, reconnaissance, and fighter planes.

However, in our age the race for records in the field of science and of the latest technical discoveries has a capital importance for the security of a country. And so it is not only the number but the quality which will decide the value of military aviation. It is in this direction that the improvements in the German aircraft after the War have tended; and they have gained numerous successes in international contests.

It is a fact that the German aircraft which solved the

problem of internal combustion (light Diesel) tends to take the leadership in the world's aviation, especially with regard to the construction of metal machines in duraluminium of very great strength.[17]

The giant aircraft of the "Superwal," G31, "Roland" or "Romar" models, and the transport aircraft of the K.38 and Junkers 52 types, would form the German bomber air force.

Their utility in time of war is quite obvious as they are capable of transporting and throwing explosives and gas, at night as well as by day.[18]

It might seem that, because of the small use that can be made of the fighter plane type in civil aviation, Germany would renounce it. But this is not the case. She has one of the best two-seater fighters of the world, the Junkers K.47, camouflaged in the civilian service under the serial number A.48.[19] On the other hand, the Heinkel factories possess a choice of prototypes of single-seater fighters, such as the H.D.43 and the H.E.70, with a maximum speed of 225 miles per hour.

At last it is no longer a secret that the plan for the development of military aviation adopted by General Goering, the Reich Commissar-General for Aviation, demands a budget of 210 million marks (an increase of 168.3 per cent compared to 1933). According to a public declaration by General Goering, the Reich is trying in fact to develop its air force to a limit which would attain four-fifths of the joint air forces of France, Belgium, Poland and the Little Entente. Provisionally it is to be equal, as from 1934, to the total air force of France. It is well known, moreover, that General von Blomberg is decidedly in favour of a strong air force.

The considerable purchases abroad of products used in the production of material necessary for building planes (especially in the United States) and the output of the special German factories which has increased almost four-fold, show the importance attached by the Government of the German Reich to the quick realization of the Goering plan.

It is useful to add that an air power such as the Reich wishes to achieve would find in its installations, its maintenance capacity and its central situation in Europe, advantages making it the more redoubtable as its field of action would not be limited solely to the neighbouring States.

(*e*) *Anti-Aircraft Defence.* The feverish activity of the "*Reichsluftschutzbund*" or Reich Society of Anti-Aircraft Defence, founded by General Goering, is justified in Germany by the panic fear of aerial attack. It is difficult to see, among the European Powers who have all been content so far to study the devices of anti-aircraft defence, which Power would be the one which would decide to attack the Reich; and so we may ask ourselves if the eventual aggressor might not be the one who tries in such an active way to secure his own defence. The Reich's A.R.P. is in fact almost entirely completed. With the active help of the whole population, tests and frequent manœuvres take place under the direction and the control of the Government. The network of watchers and of alarms comprising among others the *Flugwache,* the *Flugwachkommando,* the *Warnzentrale,* etc., organized by the Reichswehr, covers the whole country. The watching posts and A.A. defence posts are equipped with perfected detec-

tors, range-finding machines, and searchlights, mass-produced by the Zeiss factories.

Communications are assured by the telegraph office. The important telephone exchanges and central alarm-posts are placed, partly at least, in concrete shelters, gas-proof and bomb-proof.

The construction of communal shelters has been started in Berlin, Potsdam, Stuttgart, Breslau, Cologne, Dresden, Leipzig, Karlsruhe, Mannheim, Warnemünde, etc.

(*f*) *The Navy.* According to the terms of the Versailles Treaty the German Navy was to consist of:

6 men-of-war, of the Schleswig-Holstein class (12,000 tons), constructed from 1902 to 1906, and modernized from 1919 to 1926;

5 modern cruisers, Leipzig and Emden class (6,000 tons), constructed from 1925 to 1929; [20]

12 destroyers of 800 tons, Altis and Albatros class, constructed from 1926 to 1928.[21]

The German Navy possesses, moreover, an important quantity of ships of smaller tonnage in reserve: mine-sweepers, artillery training-ships, ships of the hydrographical service as well as lines of older construction which were allowed as supplementary vessels by the Conference of Ambassadors.

On the other hand, in a few years, the Reich will possess 8 battleships of a new type, 8 cruisers, and 16 destroyers of 800 tons.[22]

Out of 15,000 sailors, of which 10,000 only can be placed in the fighting complement, the German Navy has 14 admirals and 941 officers of all grades; it employs a

personnel of 1,874 officials, 1,649 auxiliary staff and 10,227 permanent workers.

What is the significance of these figures, which differ very little from the complement of 1912, if they do not betray the evident tendency of the Reich to preserve numerous cadres with the object of restoring German naval power to its position in pre-War times? [23]

Faced with Germany's re-armament, of which now there is no doubt, the Versailles Treaty signatories could adopt several methods.[24] They could among other things think of applying the sanctions foreseen by the treaty. . . . But they should have been united. Failing sanctions, this solidarity would itself have sufficed to restrain the Reich's re-armament and assured a prolonged truce in Europe.

In reality the opposite happened. Some of the Great Powers have recognized in principle the moral right of Germany to equality in the domain of armaments, without at the same time specifying their extent. Perilous hair-splitting has taken place, which serves the Third Reich as a pretext for a feverish re-armament. It will be very difficult to limit it now, and avert the possibility of war in the short or in the long run.

The Germans have been preparing for a considerable time for a short war starting with violent and abrupt offensives. This war will have to be started suddenly by picked troops, comprising mechanized fighting units, operating in close co-operation with a powerful air force; it will strike rapidly enough to paralyse the mobilization of the adversary and to make the organization of a serious defence impossible. The principal instrument of this strategy will be the Reichswehr, free from all the interior

political crises of the Reich and kept at strength by brilliantly trained reserves of its own.

Since the advent of the Third Reich this programme not only has not undergone any modification, but has been considerably improved and extended. The Reichswehr, through the constant increasing of its effectives, has become a powerful instrument of modern warfare. All possible efforts have also been made to improve the preparation of mobilization. These mostly dealt with increasing and organizing human reserves, so that apparently they already attain the enormous total of 5,000,000 men. The gigantic task of reconstructing the powerful German air force of 1918 has also been undertaken; the air force will attain in the course of 1935 the imposing figure of 2,500 fighting planes of different types.

To-day (end of 1934), the Germans can increase the complement of the Reichswehr three-fold by calling up the trained reserves, and so have an army, admirably prepared for action—a shock army—of about 600,000 men. By this means it would comprise about thirty divisions. This army's mission would be to carry out a lightning offensive, in co-operation with a powerful air force. The shock-army would find support in the units which, in case of war, would be put on a war footing: in the militarized police, in the *Grenzschutz,* in the different Nazi formations, the units of the labour-service (*Arbeitsdienst*) and the special organizations such as the *Motorstaffel, Motorsturm, Fliegersturm, Reitersturm,* etc., and the *Technische Nothilfe.*

About thirty divisions formed from these secondary units, fitted for defence warfare could immediately, by

the second day of the mobilization, assure the guarding of the Reich's frontiers.

During the first four months of 1935, when the Germans will bring the effectives of the Reichswehr to more than 300,000 men, increasing simultaneously their stocks of war material, they will be in a position to equip at least forty-five first-line divisions and the same number of secondary divisions, i.e. about ninety divisions in all.

Thus the military power of Germany, so formidable in 1914, will be reconstituted.

2. THE POLICY OF BALANCE OF POWER AND ARMED PEACE

It seems difficult at first to reconcile the steps which seem to inspire the policy of Chancellor Hitler; it wears on one side the mask of Bellona, on the other—that of peace. Had not Herr Nadolny already said in Geneva that in case of need Herr Hitler, like the late Herr Stresemann and even better than he, would know how to use the language of Kant? [25] And then Herr Hitler is a sufficiently well-advised politician to understand that in its present situation the Third Reich, because of its internal as well as its external situation, is not yet in a position to realize its programme by resorting to force. The four-year plan, which aims at economic autarchy, the principal end of which seems to be to prepare the Reich for war, is only in the course of execution. The secret revolutionary cells are not yet quite extinct and might be dangerous in the event of an armed conflict. Very little would be needed to secure the total isolation of the Reich if the Reich sought to provoke war immediately. Let us note,

incidentally, that the present isolation of the Reich, caused solely by the aggressive policy of its leaders is, *faute de mieux,* one of the surest guarantees of peace for Europe.

As at the time of Count von Schlieffen, Germany has always to bear in mind the unfavourable possibility of a war on two fronts. On one side France and Belgium who might, as in 1914, be joined by Britain. On the other—Poland and Czechoslovakia, capable of playing in the East of Europe the part assumed in the past by Russia. The outspokenly anti-Communist attitude of the Third Reich has had as consequence certain Franco-Soviet and Polish-Soviet agreements which make the Rapallo Treaty renewed in Berlin practically inoperative. Finally, the simultaneous improvement of the Soviet-Roumanian relations and the London agreement [26] constitute, taken together with the preceding ones, elements of a relative stability and of a comparatively durable respite.

On the Polish side, the agreement signed with the Soviets involves a certain improvement of the strategic position of Poland, allowing her to consolidate, in case of necessity, the defence of her western frontiers.

On the French side, the rectification of the frontiers settled in 1918, especially the restoration of the Metz and Strasburg districts into the fortress system of the north-east of France, have increased the security of that country.

Simultaneously exposed in the east and in the west in case of a war of aggression, the Third Reich ought therefore to have a powerful land and air army. Its A.A. defences should be able to defend efficiently the basin of the Ruhr, the factories of the Rhineland and Upper

Silesia and even the industrial centres of Saxony. A co-ordinated and simultaneous operation on the part of the French, Belgian, Polish, and Czechoslovak air squadrons —even without recourse to the British and Soviet air fleets—against the industrial centres, could in the event of hostilities seriously embarrass the German war production. It is, therefore, not astonishing that in accordance with the well-known German principle: "It is for the strong to draw the sword at the chosen moment," the Third Reich, without neglecting political negotiations, dedicates all its efforts to re-arming.

For the time being Hitler is utilizing to his best interests the principle of the so-called *"Gleichschaltung,"* applying it to Austria.[27] He applies the same methods everywhere where there is a German minority amenable to the ideology of German National Socialism. It is quite obvious that, could he achieve his aims peacefully, without encountering obstacles—which seems dubious enough however—the formation of a new German empire from the North Sea to the Adriatic would be only a question of time. If he succeeded, in particular, in coming to an understanding with Italy and after having rallied Austria, making an ally of restored Hungary, at the same time increasing to its greatest potential the re-armament of the Reich, he could think that he was then in a position to impose his laws on Europe.

For the time being the German statesmen and certain politicians try to make the best use of the lack of political cohesion among the Western Powers; they seem to believe in the possibility of winning over to their plan of Eastern expansion their next door neighbour, Poland. Seeking to ensure for themselves the friendly neutrality

of Poland with regard to the Anschluss, they imagine that it would suffice to let her glimpse the possibility of expansion towards the East, in order to obtain from her the rectification of their common frontiers. The Third Reich does not seem, in fact, to have renounced the idea of raising this question once again with the object of regaining Polish Pomerania and Upper Silesia.

A new policy was, however, undertaken by the Chancellor of the Reich from 1933 onwards. Both sides pledged themselves, on November 14th, 1933, not to resort to force in the event of disagreement between the two nations. The protocol signed by Germany and Poland on January 26th, 1934, concluded for ten years, recognizes the Briand-Kellog Pact as basis of their mutual relations, imposing on both parties the obligation to negotiate directly and to settle amicably all the questions in dispute. On March 7th, 1934, in Warsaw, the German-Polish economic agreement was signed, re-establishing normal relations between the two countries in this field. Its clauses abolish all reprisal measures and quotas having their origin in the tariff war which was moreover, on the whole, favourable to Poland.

Considered in themselves, these facts doubtlessly contribute to a desirable normalization in German-Polish relations. But it would certainly be premature to exaggerate their importance as long as the real goodwill of both parties to the agreement is not proved by deeds.

But is it not rather a matter of isolating Poland and directing her attention to unrealizable Eastern conquests in order to facilitate for the "nation without space" the seizure of Polish lands?

This German plan is cunning enough, but Poland would be very naïve not to see in it the prologue of her own downfall: the aim is to neutralize her while waiting to make her the vassal of Germany in one form or another. Every sensible Pole understands by instinct that the consolidation of the western frontiers of his country is the condition *sine qua non* of its independence, of its security and its future as a European Power.

Is it necessary to remind the Polish supporters of a friendly understanding with the Third Reich—these incorrigible dreamers are luckily few in number—of the experiences had in 1790, the outcome of which were the Partitions?

The present political engagements of the Third Reich remind one exactly of the tactics employed a hundred and fifty years ago by Prussia. Conceived in this spirit, these tactics to-day would have the effect of breaking Poland's alliances or at least of rendering useless the military agreements which would come into play in the event of war, and at the same time of putting into action all the means of moral disarmament capable of neutralizing or isolating the adversary.

The Polish nation needs peace and desires it. It knows how to appreciate, unanimously, as is fitting, all the steps tending to *normalize* Poland's relations with Germany. Even if it were to remain provisional, such an improvement is desirable from the point of view of European peace as well as in the interests of Poland's friends and allies. But, taught by experience, there is not a single Pole who would not realize that a Polish-German *rapprochement* bought at the price of the weakening of

Poland's defensive power and to the detriment of her alliance with France, would be more than a political mistake; it would be suicide.

From the military point of view, the power of the Third Reich will increase especially during the period of the so-called lean years, which correspond to the war years with the lowest birth-rate. According to the calculations of Dr. Burgdoerfer [28] the birth-rate fell during the years 1915–1919 by 44 per cent in France, 39 per cent in Germany, 37 per cent in Belgium, 27 per cent in Italy, and 17 per cent in Great Britain.

The consequences of this fact would be felt particularly in the states where there is a preponderance of men of more than forty years of age. At present, in an equal number of adult males, Germany has 22,218,000 men from twenty to thirty-nine years of age,[29] as against 12,719,000 Frenchmen of the same age. Although the decrease in the birth-rate reaches an important figure in Germany, it is less than in France and has a smaller military importance, if we consider the special organization of the German Army (a professional army with limited effectives).

Moreover Germany has enough arms at present to call up all the recruits: if she incorporated the best ones in large numbers it would suffice to ensure for herself a margin of superiority over her potential adversaries.

The countries menaced by Germany would suffer from a shortage of effectives which their potential adversary would not experience to the same extent. The situation would become particularly serious at the beginning of the covering operations which would be carried out

mostly by the active army, having reduced effectives in proportion to the diminution of the contingent; it would be less serious when the reserves rejoined the army, as generally speaking there are more reservists than are needed for a fighting army. The question is to ward off a crisis during the first few days of covering action.

What is the remedy for this? Either an increase in the duration of active service, or an increase in the numbers of professional soldiers.

The first solution has great political disadvantages; the second, equally serious ones of a financial order. Can these solutions be employed? If not, then either all the active regiments will have to be brought nearer to the frontier (with many resulting inconveniences for accommodation in peacetime, training, mobilization, and the maintenance of the military spirit in the country), or the calling up of reservists in the frontier districts will have to be carried out very rapidly, while peace still reigns, prior to the covering operations, at the first sign of aggression.

One or other of these solutions, perhaps both, will be necessary; the necessity of defending even the least important village on the national frontier and to prevent the enemy from making any incursion inside the national territory, even in the form of a transitory raid, is the true object of covering operations. To this end, the covering operations must have effectives in proportion to the length of the frontier to be defended, and they cannot fall below a minimum of men determined by a fairly severe calculation.

This purpose will be considerably facilitated in countries having permanent fortifications and modern means

of warfare and efficient rather than numerous effectives.

In fact a frontal, continuous barrage, ready in advance, if it consists of very high-class war potential (fire power, shelters, anti-aircraft, and anti-gas defences, communications, day and night observation, anti-tank obstacles and armaments etc. . . .), would ensure the inviolability of the frontier in most circumstances, even with limited effectives. In the event of this barrier being pierced by a powerful or unforeseen enemy attack, fairly numerous, very mobile supporting reserves (motorized, motor or air-transported) capable of striking fast, would rush into a counter-attack without losing time, in order to expel the aggressor from the national territory.

This new method would dispense with the necessity of sacrificing to the actual defence of the frontier highly-trained effectives as envisaged in previous conceptions. This is logical in modern warfare and it is efficacious. The inconvenience is that it needs permanent fortifications, large quantities of modern material, and consequently considerable budget expenditure. The states which have to cope with the shortage of effectives of the "lean years" in 1935, will, perhaps, not all adopt this costly solution; the less rich will try to find men instead of funds, but they will not be so well protected against a possible inrush of mechanized detachments and of great motorized enemy units.

Be this as it may, if in the meantime no new fact of international importance occurs, which would stabilize the state of peace,[30] the States having a low birth-rate will be compelled to see to their security, and in default of necessary funds they will have to build up a modern covering force—extend the period of active service, in-

crease the ranks of professional soldiers and reinforce the covering units by means of supplementary periods of service for reservists. All these measures are clearly dependent upon the interior political situation of the interested States.

3. THE POLITICAL AND MILITARY SITUATION IN THE FAR EAST

At the basis of the conflict latent in the Far East, where Japanese, Chinese, Soviet, European, and American interests are inextricably intermingled and opposed, lies the brutal fact of the existence of a people of more than 70,000,000 inhabitants, or, in certain regions, 800 inhabitants to a square kilometre, whose national unity, ambition, economic and military development have in less than half a century become the potential arbiters of the destinies of Asia.

Territorial expansion, particularly in the neighbouring Asiatic regions, seems to the Japanese statesmen the only remedy for this demographical density, one of the factors which will condemn the population to increasing misery. A national mysticism, not without links with an old tradition, has sprung up from it and is expressed in slogans such as: "Japanese expansion on the Continent is necessary to Japan's welfare and to that of the whole East." [81] To achieve this the Japanese Government must take the necessary measures "to occupy Eastern Siberia which is naturally subject to Japanese influence." General Sato, for his part, thinks that "regions such as Manchuria, Mongolia, and Eastern Siberia, being sacred places which saw the birth of their prophets, constitute the natural field of action of the Japanese and their descendants." To sum

up, the hold of Japan on Eastern Asia seems to them a question "of life and death" for their country.

From the material point of view, this situation is the outcome of purely economic needs, which compel Japan, as an insular Power, deprived of natural riches, to import all its raw materials (such as minerals and cotton) from abroad, and particularly from India and China. But these raw materials are in abundance in Manchuria and Mongolia. On the other hand, Japanese trade can only find external outlets with the help of low export prices possible because of plentiful, skilled, and cheap labour. And China, with its population of 400,000,000 and a very mediocre industrial power, constitutes an outlet which happens to be the objective of other Powers in addition to Japan.

To these economic reasons motives of a military order are added. According to General Hato, "the defensive organization of the Korean frontiers does not guarantee the Japanese domination of these regions." And even the occupation of Southern Manchuria, which was the objective of the last Russo-Japanese war, did not give a satisfactory solution of this strategic problem. It results from this that "in proportion to the increase of the Japanese population and of the power of the State, attempts have to be made *to extend the Eastern Empire progressively on to the continent.* This tendency constitutes an immutable element of the State doctrine in Japan; it is entirely independent of the changes which might occur in the neighbouring countries; in no case will it be modified."

This political programme of expansion, which directly threatens certain possessions of the U.S.S.R., is not a

recent one. It has been pursued with a remarkable continuity for almost half a century. After the victory over the Chinese in 1894, Japan provisionally occupied the peninsula of Laodon which it had to evacuate under German-Russian-French pressure. Then the Russians settled themselves in 1897 at Dairen and Port Arthur. Japan had to be content with a recognition of its right to a protectorate over Korea; but it took its revenge in 1905. The Treaty of Portsmouth (August 25th, 1905), then the annexation of Korea in 1910, the gradual penetration of Japan in Manchuria and Mongolia during the war, and finally the treaty concluded between Japan and the United States in 1917, marked the stages of Japanese expansion on the Asiatic continent and sanctioned the positions acquired by Japan in Asia.

From the end of the World War onwards, however, the rivalry of Japanese and American interests in the Pacific and in China caused the Washington Conference in 1922, which imposed on Japan a limitation of her navy and of her rights in Manchuria and Mongolia. Japan had to recognize once more the principle of the "open door" and the indivisibility of the Chinese territory.

The last Sino-Japanese conflict, followed by the creation of the independent state of Manchukuo, and the occupation of Jehol, has considerably modified the situation. In order to maintain and consolidate this situation, Japan seems determined enough to resort, if necessary, to arms.

From the point of view of his fighting value, the Japanese soldier is one of the best in the world. As to the Army, its technical equipment was until recently not adequate to the problems which would be encountered

in modern total warfare. The finances of the State did not allow it to maintain itself on the level of technical progress. The Sino-Japanese conflict of 1932–33 laid bare many shortcomings in this respect. From then on the Japanese Government made all possible efforts to remedy this.[82]

According to Japanese sources, the Japanese Army can now call up in case of war 1,200,000 men, independent of secondary formations. At the beginning of 1934 Japan, without counting the Manchurian army of 80,000 men, maintained permanently eight divisions on the continent, two of which were in Korea, four in Manchuria and two in the district north of Peking. In the event of a Japanese-Soviet conflict these divisions, supported by the Manchurian army, would constitute the vanguard of the Japanese army and to a certain extent carry out the covering of the Chinese frontier and of Manchuria. The operational armies would, however, encounter many difficulties of transport in Manchuria. Badly co-ordinated and poorly constructed, the railways in that region could with difficulty carry a traffic of from twelve to twenty-four trains a day.[83] The Japanese authorities, it is true, have tried, of late, to complete the railway and road network in order to facilitate the concentration of the armies and the supplying of the troops on the continent with food and munitions.

The Japanese air force, which probably by now numbers nearly 2,000 units, is building in Manchuria numerous air-fields and supply dumps. The Japanese fleet is, as everybody knows, the third in the world, after Great Britain and the United States.

Thus it is by no means out of the question that Japan

might seek to exploit its initial successes, profiting on one side by the political crisis provoked in Europe by the re-armament of the Third Reich and the revisionist policy, and on the other by the growth of the U.S.S.R. by directing her efforts now towards Mongolia and Eastern Siberia.[34]

For the U.S.S.R. a Japanese success in this direction and a Japanese threat against the Kuznyetsk basin, where the Soviets have undertaken, at Magnitogorsk, the construction of a formidable centre of heavy industry, would spell the ruin of their policy of Asiatic expansion.

In spite of an indisputable military power,[35] steadily growing every day, the whole of the Soviet system is still in process of evolution and there are many financial difficulties to be overcome. A conflict in the Far East might not remain localized; the struggle on two fronts might be rather uncertain. As long as its internal situation is not stabilized and its army has not attained a sufficient military potential, the sincerity of the Soviet wish for peace is evident.

Under the pressure of the latest events in the Far East, the Soviet have been forced to concentrate, under the command of General Blücher, several divisions in the region of Lake Baikal and Vladivostok, and make the necessary arrangements for reinforcing them, should the need arise.

The Soviet forces at present concentrated in the Far East number, according to Japanese sources:

Four divisions of infantry and half a division of cavalry in the district of Vladivostok-Nikolski-Usurye;

Three divisions of infantry and one brigade of cavalry in the region of Khabarovsk-Blagoveshchensk;
Two divisions of infantry and one brigade of cavalry in the province of the River Amur;
300 tanks:
300 aircraft, of which about thirty are heavy bombers;
Six submarines of 500 tons at Vladivostok.

In the event of war the supplies of these forces would become a rather complicated problem, for the Irkutsk-Vladivostok railway, which stretches 1,250 miles and which skirts the frontiers of Manchukuo, cannot suffice for all these needs.

The transport capacity of this railway does not exceed, at the maximum, the modest figure of fourteen military trains a day in either direction, which would hardly be sufficient to supply with provisions and arms the units at present concentrated in eastern Siberia and on the Pacific coast.

The maintenance in that region of more numerous forces would be the more difficult as they could not live on the country. This territory, naturally rich, but completely neglected till lately by the Soviet authorities, is not in a position to feed considerable armies. Any large-scale concentration of Soviet forces would only be possible, for these reasons, in the region of Lake Baikal.[36] The Russian concentration would be split into two groups more than 650 miles distant from each other; its strategic value would be much weakened. Russia should make a serious effort to develop her eastern communications and improve her situation; she is already working towards

this end with much energy. The Soviet navy, lacking sufficient bases in Asia, could not play an important part. Only the flotilla of submarines at present concentrated at Vladivostok would be capable of making a diversion.

The most efficient arm which the Soviet Union could employ at present would be its air force. Situated between Vladivostok and Khabarovsk, the Soviet air-bases are about 650 miles from Tokio. Apart from easy operations from the Manchurian side, the Soviet air force could undertake raids, even if ineffective, on the Japanese islands, if the Soviets succeeded in holding Vladivostok and the coastal region called Primorskaya Oblast. The Soviet air force, as is known, is one of the first in the world in numbers (more than 2,000 aircraft), and in quality it is not in any way inferior to the Japanese. The Japanese air force, having at its disposal bases recently built in Manchuria, can, in the event of war, undertake preventive actions against the Russian air fleet.

In these circumstances, the chances of the two adversaries would be more or less equal in aerial war, provided that the Japanese do not succeed in occupying Vladivostok and the maritime province of Russia, which would, of course, give them a considerable advantage.

The result of these considerations seems to be that in the event of a localized conflict, if Japan wisely limited its objectives, without advancing in Siberia, the Japanese Empire could consider itself the possessor of important advantages.[37]

The occupation of the railway from Vladivostok to the Trans-Siberian line and subsequently of the Soviet possessions situated on the Pacific coast would not present insuperable difficulties for Japan, in spite of the defensive

works undertaken there by the U.S.S.R.[38] The strategic position recently gained by Japan on the Asiatic continent would be consolidated and would allow her to neutralize the naval base of Vladivostok, which would be very dangerous to Japan in case of a conflict with the United States.

On the Soviet side, the Soviet-American *rapprochement* seems to have strengthened the position of the U.S.S.R. in the Far East. The economic power of the United States would enable them, in case of their intervention,[39] to undertake a prolonged effort which would be fatal for the Japanese. We know, moreover, that the naval programme recently developed in the U.S.A. in accordance with the London and Washington agreements is not unconnected with the menace which Japan constitutes in the Pacific.

Finally, Japanese policy in the Pacific and its tendencies to make sure of the exclusive use of the Chinese market, seem to make even Great Britain uneasy. A mutual understanding between Great Britain and the United States, with a view to barring the way to a Japanese hegemony in the Far East and of maintaining the principle of the "open door" in China, does not seem to be out of the question, in spite of the Anglo-Soviet rivalry and the numerous British and Japanese common interests in Asia. For the moment we may suppose that considerations of this kind have made Japan incline to prudence.[40]

The declarations of the Tokio Government to the British Government assuring them of their peaceful intentions, the tendencies to strengthen Japan's position in Manchukuo, their offers to the Nanking Government of a common front against Communism—all this seems to

confirm their intentions of postponing the conflict with the U.S.S.R. This conflict, however, appears inevitable one day or another and its possibility in a none too distant future seems to fit in with the intentions and interests of the Japanese Empire. On the other hand, time works against Japan and for the Soviet Union, especially since the Soviet entry into the League of Nations and the Soviet-American *rapprochement*. Although the possibility of an armed conflict in the Far East would cause considerable interior difficulties in both opposing camps, it appears that Japan will not be able to support for very long the enormous financial burden of her armaments. If the military understanding of China and Japan, for which Germany is working by the intermediary of General von Seeckt, could be achieved, one may suppose that Japan would not hesitate to use its arms to fight over Asia with the Soviets.

On the other hand, we cannot conceal our fear that the year 1935 will mark the beginning of a universal political crisis in this sphere. In 1935 the period expires which gives Japan its freedom with regard to the League of Nations. It is difficult to suppose that Japan will then renounce the mandate it holds over the Caroline and Marshall Islands which she has fortified and organized militarily, thus enlarging her naval bases in the Pacific Ocean. In 1935, also, the Naval Conference will take place, which may bring into brutal opposition the Powers competing in this region of the Pacific, the more so as the Japanese Government is determined to demand equality for its navy[41] and the creation of an autonomous Manchurian fleet. At the same time the second Five-Year Soviet Plan, which is known to be directed towards re-

inforcing the material situation of the U.S.S.R. from the military point of view, will come to an end.

Certain military theorists and even German politicians seemed to believe before the advent of the Third Reich in the possibility of a localized armed conflict. The situation is at present totally changed. If, however, the programme announced by Chancellor Hitler in his book *Mein Kampf* is not merely an election pamphlet, if the Third Reich is preparing itself in the long or short run for the "destruction of France," and then for the "expansion of the Third Reich towards the East"; if the first stage of this programme aims at the realization of the Anschluss, followed by the creation of a *Zwischeneuropa* and the recovering of the old German colonies—if, in a word, the Germans are preparing to take over the whole tradition of the First Empire, these intentions alone suffice to keep Europe in a state of siege and to provoke, in the long run, a world-wide war, just as in 1914.

Contrary to the rather simplified conceptions of some notorious pacifists who would like to shut their eyes to a localized conflict—i.e. to leave the weakest to his fate —the innumerable pacts binding all the countries of the Continent by linking up their interests, are of such a nature as to generalize every local conflict automatically.

On the other hand it is quite clear that it is because of this generalization that the conflict has been postponed up till now, the condition of political equilibrium being rather unfavourable at present for a European or an Asiatic aggressor.

In principle, according to the Covenant of the League

of Nations and by virtue of Articles XII, XIV, XV, and XVI, every member State which provokes war is considered as automatically in conflict with all the other members of the League. The regional agreements such as the Rhine Pact, initialled in 1925 at Locarno, would be of a nature to spread the conflict. But even if the pacts and agreements were broken or inoperative, the groupings of interests on the Continent cannot be materially altered without constituting a serious menace for one another. From the technical point of view, on the other hand, modern arms, too, are adapted to an intensive war. Thus Great Britain has vital interests in the independence of Holland and Belgium not being violated. With the development of flying, London and the industrial region of England would be particularly threatened if Great Britain had no support on the Continent for her armed forces. In the same way the lines of communication which bind her through the Mediterranean to India, the Far East, and Australia could not be efficiently protected without the participation of the great continental Powers of the Mediterranean.

Lastly it is impossible not to take into account the new factors which have come upon the scene since 1914—Bolshevism and Fascism . . . so that an armed conflict, at present postponed, might break out suddenly and take the form of a conflict that would be at the same time both political and social.

In the present state of national, political, economic, and social antagonisms it is quite probable that war, wherever it breaks out, in the Far East or in Europe, will soon be transformed into a world conflict.

REFERENCES

1. This text, of capital importance, is as follows:

Article I.—The popular representation of the separate States is abolished.

Article II (*a*).—The sovereign rights of these States are transferred to the Reich; (*b*) the Governments of the States are subordinated to the Central Government of the Reich.

Article III.—The presidents of the States are subordinated to the Reich Minister of the Interior.

Article IV.—The Government of the Reich can create new constitutional laws.

Article V.—The Reich Minister of the Interior is directed to take all measures and to issue all the necessary decrees for the execution of this law.

Article VI.—This decree comes into force on the day of its publication.

2. My italics.

3. *Mein Kampf*, p. 437–438, 1933 edition.

4. Cf. Chapter IV.

5. A comparison between the present organization of the *Truppenamt* and that of the German High Command in 1914 shows that the central office is now represented by the section T.2 (organization). The section of operations, railways and fortifications has been replaced by the section T.1; the section of foreign armies by the section T.3 (statistical); the section of instruction by the section T.4. Finally, the geographical and historical sections having been transferred to the Ministry of the Interior, a special section, called the League of Nations section, has been incorporated in the *Truppenamt*.

In short, the *Truppenamt*, which has replaced the former Great General Staff, is directed by a General Staff, to which three officers are directly seconded; it comprises five sections:

1. Section T.1 (operations and topography): fourteen officers.

This section is subdivided into three parts:

(*a*) *Heeresabteilung* (operations), concerned with the following questions:

Conduct and employment of the troops.

Protection of frontiers, national defence, fortifications.

Army supplies.

Questions of military policy.

Employment of political intelligence.

(*b*) *Heeresvermessungstelle* (topography), an organ of liaison with the geographical service of the former Great General Staff, taken over in its entirety by the Ministry of the Interior.

(*c*) *Transportgruppe*, created to replace the old transport office which has been suppressed.

2. Section T.2 (organization): fourteen officers.

Budget.

Organization of the Reichswehr.

Legislative and administrative measures.

Effectives.

Promotion, transfers, leave.

3. Section T.3 (foreign armies): fourteen officers.

France.

Great Britain.

Belgium, Holland, Switzerland.

U.S.A., China, Japan.

Russia.

Poland and the Baltic States.

Code section (codes and decoding).

4. Section T.4 (instruction): twelve officers.

Army training.

5. Section V.H. (*Völkersbund Abteilung, Gruppe Heer*): seven officers.

League of Nations section.

Training of Officers of the General Staff.—According to the Versailles Treaty, the school for officers, assigned to the German Great General Staff, the Academy of War, was suppressed. The selection and instruction of officers destined to serve in the General Staffs are nevertheless carried on by the German High Command. The selection takes place as the result of a competitive examination which, in many points, reminds one of the entrance examination for the *Kriegsakademie* before the World War; it takes place once a year, at the seat of every military district (*Wehrkreis*) and therefore bears the title of district examination (*Wehrkreisprüfung*).

The subjects of this examination are the same for all districts, and are supplied by an organ of the Direction of the Army, the Office of Troops (*Truppenamt*), which corresponds to the pre-War Great General Staff. The officers who have passed the examination of the *Wehrkreis* are prepared for the functions of officers of the General Staff.

Until 1928 they received their instruction in the staff of their division or of the district of the army corps on which it is dependent. After that date they were grouped alternately one year in the general staffs subordinate to Eastern *Gruppenkommando* (group command), the next year in the Western *Gruppenkommando.*

The probation period for general staff officers seems to last two years, interrupted by periods with the troops.

During the probation period a selection is made among the probationers, as was done before the War among the officers who passed to the *Kriegsakademie.*

The best probationers are assigned to the *Heeresleitung* in Berlin, where they follow joint courses, analogous to those of the old *Kriegsakademie.*

In fact, this category of pre-War officers, called officers of the Great General Staff, or popularly *"Stäbler,"* still exists, but

under the camouflaged denomination of *"Führergehilfe"* (auxiliaries of the chiefs).

6. According to the budget of the Third Reich for 1934 (1st April, 1934–31st March, 1935), published in the *Official Journal* of 26th March, 1934, the expenditure for the territorial army was estimated at 654.6 million marks, *i.e.*, 172 million or 35 per cent more than in 1933. The expenditure, in comparison with 1933, has increased by 26 per cent (119,200,000 marks) for the upkeep of the troops, by 38 per cent for clothing, by 33 per cent for quartering, and by 31.9 per cent for replacements.

7. These effectives will be attained thanks to fresh recruits who were incorporated on April 1st, 1934, and whose enlistment contracts are concluded for eighteen months. A second incorporation, foreseen for October, 1934, will bring the effectives of the Reichswehr to the level of 300,000 men, thanks to other one-year recruits. For 1935, a third incorporation is provided for which will bring the effectives to 400,000 men.

8. The police detachments, militarily armed and trained (*Landespolizei*), are on duty in all the important cities, such as Trier, Mainz, Koblenz, Cologne, Aachen, and Düsseldorf.

9. All the young men who have completed their secondary school studies are compelled to spend four months in labour camps and six weeks in the S.A.

10. Cf. the speech of Captain Roehm in Berlin on December 7th, 1933.

11. It arises, on the other hand, from the documents presented to the Reichstag by Communist deputies long before 1933, that the mobilization included a secret organization, conducted by "civilian officers." These, who were district officers (*Kreisoffiziere*), had the task of organizing in every detail the mobilization in their districts of all men capable of carrying arms.

12. *Obergruppe*—army corps; *Gruppe*—division; *Untergruppe*—brigade; *Standarte*—regiment; *Sturmbann*—battalion; *Sturm*—company.

13. It is known that the Government of the Third Reich intends to introduce compulsory service for a period lasting six months, which, together with the military preparation and supplementary courses, would suffice to form yearly 400,000 recruits, well trained and ready for battle.

14. Heavy artillery at Essen, Augsburg, and Düsseldorf; tanks at Eisenach and Leipzig, munitions at Krupp's and its branches, in the factories of the A.E.G., at Werner's in Berlin, at Siemen's, Bergmann', Kochkienzle's, and at Schichau's in Elbling (East Prussia). As far as modern material is concerned, since 1933 the Daimler factories have produced a new type of heavy armoured car, served by five men (two drivers and three gunners). The "Rheinmetal" factories at Düsseldorf-Derendorf, specializing in the construction of 80-mm. cannon, have almost doubled their personnel (from 190 to 350 workers). They are at present producing a new type of heavy machine-gun (20-mm. calibre), which can be used against any air or land objective, and can be transported on any kind of terrain. The "*Berlin–Karlsruhe Industrie-Werke,*" specialising in the production of Mauser rifles, which was inactive in 1930, now employs 3,000 workers. The "*Berlin–Maschinenbau*" (torpedoes), which until 1931 exported 22 per cent of its production, no longer exports more than 16 per cent, while shares issued by this company have risen to eight times their initial value.

15. We should recall that during the two last years of the War it produced a monthly average of about 2,000 guns, 14,000 heavy machine-guns, and 200,000 rifles.

16. Imports of nickel, for instance, have risen by 94 per cent and those of iron by 70 per cent in eight months. These vast imports of raw materials are one of the principal causes of the

catastrophic situation of the Reich from the point of view of its trade balance; this does not seem to be caused by anything but the production of armaments.

17. Thus the engineer Dornier completed in 1927 the construction of the most powerful aircraft existing at that time: the "Superwal," which won twelve world-records.

That it could be used for military purposes had been proved by Japan, which bought it as a bomber. In 1929, they worked on another giant of the same kind, with twelve engines of 500 h.p. each, capable of taking 100 passengers in addition to the 72 tons represented by the crew and by the necessary reserves of oil and petrol. Its speed would be 115 miles an hour, and its range 625 miles.

Another great German constructor of aeroplanes, Junkers, produces a three-engine aircraft of 1,650 h.p., specially intended for night flights and adaptable to a double purpose: as flying-boat and ordinary aeroplane. It is a perfected type of the three-engine Junkers G.24 of 900 h.p., which was able to carry, during its tests, 2 tons of load on a flight of 625 miles at a speed of 130 miles an hour. The G.31 would not require many changes in order to be transformed into a bomber or multi-seater fighter. This type, improved and armoured (K.30), is used in Sweden as a bomber.

Junkers also announces an aircraft of the same type with four engines of 2,500 h.p. which, under the guise of a quick postal aeroplane, is the prototype of the reconnaissance aircraft, as are some other Junkers models, while the S.48, a sports two-seater, is the best possible type of fighter plane. We can find fighter planes of the same type constructed by Junkers in Sweden, in Turkey, and in the U.S.S.R.

Lastly, the engineer Rohrbach has constructed a three-engine aeroplane, Roland, which has beaten thirty-two world-records, and which can transport two tons. Another type, the *Romar,* is the biggest German flying-boat; with three motors,

a strength of 2,100 h.p., it can carry twelve passengers, five members of the crew, and one ton of cargo besides its reserve of petrol for a flight of 2,500 miles. The Danish factories of Rohrbach have constructed military flying-boats of the same type for Japan and Turkey, which would place them in the category of bomber-aircraft.

18. The German military technicians, as is well known, attribute a primary role to bomber aircraft which, apart from their special functions, have to co-operate closely with the mechanized and motorized land-army.

19. Armoured as military aircraft, in the Swedish branches of Junkers at Bofors, it has been sold in vast quantities to the Soviet Union and Japan. Armed with three machine-guns, it can achieve a speed of 200 miles per hour, and climb to the height of 12,000 feet in eight minutes; its ceiling is 27,000 feet.

20. The Germans do not yet possess the sixth projected cruiser of this class, and maintain in service three old cruisers of the *Berlin* class of mediocre value.

21. They renounced the construction of twelve destroyers of 200 tons authorized by the treaty, not thinking them of much value in case of war. After consultations with the Conference of Ambassadors they replaced them by old destroyers of the 1907–1913 types, modernized in recent years.

22. The new German battleship (Panzerkreuzer A. Ersatz *Preussen*), for the launching of which a first batch of credits was voted by the Reichstag in 1929, allows us to realize what these new men-of-war, of which this is the first example, will be like. She is a ship of 10,000 tons, with a speed of 26 knots, armed with six 28-mm. guns placed in two armoured turrets, with eight 15-mm. guns, four A.A. 88-mm. guns, and four 50-cm. torpedo-tubes. While not yet definitely fixed, it appears that her range of action will be very high; it should reach 10,000 miles. Her value lies, above all, in her great speed, her powerful armament, and her extensive range of action, in spite

of her relatively light tonnage. Her other qualities are her wealth of modern material and the recent improvements which consist in welding the armour plates instead of riveting them, thus saving a considerable amount of weight. Besides the *Deutschland,* two battleships of type A, the *Admiral Scheer* and the *Admiral Spee,* are to be launched in 1934.

23. The budget assigned to the German Navy has been increased this year to 236,200,000 marks (an increase of 87.4 per cent on the preceding year), of which 108,000,000 marks are for the construction of new units.

24. As a reminder we may quote one of these methods, the control of armaments by an international commission. Let us recall, on this subject, that it was at the moment when the Inter-Allied Commission of Control was functioning in Germany, that there were constructed (and fortunately discovered, a little later), the modern fortifications situated near the Polish frontier in East Prussia.

25. As author of the essay "On Perpetual Peace."

26. On July 3rd, 1933, the representatives of the U.S.S.R., Poland, Roumania, Turkey, Latvia, Persia, Afghanistan (later joined by Finland) signed in London a convention which established in a precise enough manner the definition of an aggressor. It recognized as an aggressor a State which, after or without an official declaration of war, would attack the territory of another State, or which would support on its own territory armed bands attacking another State. This formula corresponds to the one proposed by M. Politis to the Security Committee which met in 1933 at the Disarmament Conference, but which the Conference declared it was not able to accept.

27. In view of the opposition of the Western Powers to the Anschluss, the methods which the Reich will apply in Austria will doubtless be analogous to those already applied in Danzig, a city which, theoretically remaining "Free," is entirely under the orders of the Third Reich. The clandestine and unofficial

state of war that has been brewing for some time between the Third Reich and Austria, can serve as an indication. The joint declaration of Britain, Italy, and France of 14th February, 1934, affirming against Germany the inviolability of Austria's independence, constitutes a striking proof that there is danger of war threatening in Europe. In fact, the attempt at a National-Socialist *coup d'état* in Vienna and the assassination of Chancellor Dollfuss on 25th July, 1934, almost provoked an armed conflict. Mobilized Italian army corps then made their appearance on the Austrian frontier, in Carinthia, and in the Tyrol.

28. Review of the National Alliance (Berlin, 1933).

The number of men aged from 25 to 35 years would be spread in Europe in the following manner, according to German statistics, which are clearly uncertain and very tendentious:

	In 1930	*In* 1940	*In* 1950
Germany	3,211,000 ..	1,898,000 ..	2,559,000
France	1,647,000 ..	889,000 ..	1,554,000
Italy	1,948,000 ..	1,474,000 ..	2,023,000
Poland	1,641,000 ..	1,089,000 ..	1,789,000

29. *L'Ordre Nouveau.* Paris, June, 1933.

30. We clearly cannot reject, *a priori,* the possibility of a Franco-German *rapprochement* which might be brought about under the impulsion of a new and fruitful policy inaugurated by a France sure of herself, of her immense prestige, and of her strength, a sort of eastern Locarno, into which the Baltic States, the U.S.S.R., Poland, Germany, the Little Entente, and France would enter, completed by a Mediterranean Pact grouping the Balkan States, Turkey, the Little Entente, Italy, France, and the U.S.S.R. These plans, which for the moment are only projects, remain not only subject to Germany's acceptance, but also to the evolution of the internal situation in the interested countries and to the government crises which

they are undergoing. The changes which might arise in this respect allow us to envisage all sorts of possible solutions, somewhat incompatible with one another, such as the formation of a block of anti-revisionist countries liable to prolong the truce, a unified Europe, strictly limited to its European interests on the American model, or, on the contrary, what we should not desire, but what unfortunately remains plausible enough, a Europe profoundly divided between groups of rival States, the prey of an armaments fever and simultaneously exposed to external war and to civil war.

31. General Araki—*The Japanese problem at the time of Siowa.*

32. Since 1932, the Japanese have endeavoured, with their well-known energy, to ensure for their army the most modern war equipment. The increase of Japan's military budget is a proof of this. In 1931 this budget attained the figure of 454 million yen; in 1932, 659 million; in 1933, 820 million, and in 1934, 937 million.

33. As an indication, the line Paris–Strasbourg alone could carry as many as about 120 trains a day.

34. Japan would propose to apply to Southern and Eastern Asia a kind of Monroe doctrine.

35. Let us recall that the U.S.S.R. has at present 87 regiments of infantry for the regular army, and 125 regiments for the territorial army; 100 autonomous battalions for the service of the garrisons; 79 regiments of cavalry of the regular army and 18 regiments of cavalry of the territorial army; 1,500 batteries of artillery types; 15 liaison and reconnaissance regiments; 5 autonomous liaison regiments and 17 signals battalions (radio); 10 ordinary battalions and 40 autonomous companies of army service corps; 7 battalions of pioneers (bridge services); 15 battalions of transport services of railways; 5 motor-car and motorcycle regiments; 60 armoured trains and 300 tanks; 10 regiments for the service of poison-gas; 50,000

men of the G.P.U.; 100,000 men drafted from the frontier guards; 60,000 assigned to transport, and about 150,000 guards in the industrial centres and the ports.

The Soviet air force is thought to number about 2,000 aircraft, including the A.N.T.3 machines of entirely metal construction, and produced in the U.S.S.R. In spite of the secrecy observed about everything touching aviation in the U.S.S.R., it is known that its autonomous air force is one of the most numerous in the world, especially as far as the aircraft of heavy tonnage are concerned.

36. The executive of the Red Army is trying at present to move towards the East the centres of supplies of material and of all sorts of other supplies.

37. We cannot share in this respect the opinion of the American General Gaves, according to whom a localized conflict with the Soviets would lead Japan to a certain defeat.

38. On the contrary, a more extended penetration of the Japanese forces, namely into Siberia, would weaken them in proportion as they would advance farther from their operational bases, and would thus increase the chances of the Red Army.

39. This intervention is not at all certain. The attitude of the United States would not necessarily be hostile to Japan, which presents for them an important outlet. A certain extension of American influence in Manchukuo or even, possibly, in Eastern Siberia, if circumstances should detach it from the Soviet Union under the form of an autonomous State similar to Manchukuo, might very well be in the interest of the United States and of some European Powers, which might then by common accord check a too dangerous expansion of Japan in Asia.

On the other hand, a naval and economic blockade applied in the event of a conflict in the Far East by the United States would be calculated to exercise a strong pressure on Japan, if only by reason of the raw materials, indispensable for war-

industry, raw materials which the United States possess in the proportion of 50 per cent of the world production.

40. In addition, her financial situation, very difficult and encumbered, among other things, by 9,000,000,000 yen of internal debt, would not allow Japan to wage a long war.

41. The Japanese Government has notified the interested Powers that it will not accept the renewal of the Washington Agreement.

SECOND PART

Modern Warfare and the Problems of National Defence

CHAPTER I

The Powers of the Government and of the Military High Command

1. GENERAL REMARKS.

THE ORGANIZATION OF NATIONAL DEFENCE AND THE PRESUMED DURATION OF WAR

IN 1914 the organization of national defence was envisaged, throughout the world, in a relatively simple manner. People provided for a localized war whose duration would be a few weeks or, at most, a few months. All the efforts thus led to the raising of armies capable of sustaining the first assault and comprising only a third of all the men available for mobilization. As, on the other hand, the armaments included very few types of weapons (rifles and guns, in principle) with limited supplies of munitions, the system of the so-called "armed nation" only absorbed a part of the vital forces of the nation.

These conceptions were upset by the hostilities of 1914–1918, which took the form of a general, total, and stagnant war. All the human and material resources of the nation had to contribute their bit; the technical means have multiplied and developed in every field. When the decisive battle did not take place, as desired, efforts had to be prolonged for many years, until 1918.

The system of national defence adopted since 1918 then made an appeal to all the sources of strength without any exception, in expectation of a long war. Its plans surpassed very much in their intricacy, complexity and tasks the simple, sketchy and automatic plans of 1914.

To-day, the preparations seem to have taken on a more supple character. It is only right, however, to start by trying to determine the probable or possible characteristics of a future armed conflict, refraining at the same time from confining oneself to a single hypothesis, even if it is the most likely one; must we prepare for a total war, of a long duration, or for a more or less localized war, with a swift rush of events and rapid decisions?

In the first case, the system of national defence would rest, in principle, on compulsory military service, or, in other words, on the system of the armed nation, capable of a prolonged resistance. In the second case, in view of the dynamic form of warfare, we should have recourse to a professional army, necessarily less numerous but perfectly instructed and trained.

One can find, of course, many examples in history of long wars, when it was possible to lay hold of the main body of the enemy forces and to obtain a quick decision in a pitched battle; then there followed the occupation of the conquered country on which was imposed a victor's peace. The nineteenth century is full of such examples. Napoleon conquered the whole of Prussia within three weeks (September 24th to October 16th, 1806). The war of 1870 offers another classical example of a short, intensive campaign, abounding in quick decisions.

It was under the influence of that recent experience

that, contrary to the views of the old Marshal Moltke, a campaign of short duration was provided for in 1914. It was to correspond in duration to the supplies provided for the mobilization. The Schlieffen plan [1] aimed, in fact, at putting France out of the struggle before the Russian armies, whose mobilization and concentration were slow, would be ready for major operations. It thus aimed at seeking an immediate decision in the West, where the very great majority of the German battle effectives were directed at the start. This reasoning might seem judicious; the plan failed because of the defects in its execution, which a unilateral and exclusively military preparation, however detailed, was not able to avoid.[2] At the same time, the French, too, failed in their endeavours to reach a decision by an offensive; it seems that they were more or less surprised by the fire power of modern arms and that their mobilized troops had not enough time to adapt themselves to it before the start of the principal operations.

It follows from these experiences that the immense armies of 1914, including a vast proportion of reservists, did not offer enough cohesion or training to undertake straight away offensives on a large scale. Their considerable mass, difficult to command and to move in the state of transports and communications of 1914, did not facilitate manœuvring, speed, secrecy and the brutal thrust which were, according to the established views, the necessary conditions of a decision on the battlefield.

In these conditions it was rather improvident to expend the best forces during rapid, very uncertain engagements, at the very beginning of hostilities. Decimated and disconcerted, the armies became stabilized, contrary to the

intention of the command. Now, no study had been made of the problems of a long war, in either of the two opposing forces. The supplies of arms and munitions quickly became exhausted and soon showed themselves to be insufficient not only for reaching a decision but for keeping up the fight. On the Western Front, soon after the battle of the Marne and the "race to the sea," in the shelter of strongly reinforced trenches, the opposing parties took feverishly to the organization of a war industry, of which the mobilization plans only offered a rudimentary sketch.

And it was only two years later, in 1916, that this organization started to make its effects felt and to develop itself ever more until it absorbed all the internal forces and contributed at last to fixing a term to the war. The reasons for the war having lasted four years and taking on towards its conclusion the aspect of a cataclysm, are not to be sought in the mistakes committed at its start but in a miscalculation in peace-time, a mistake which it had been difficult to remedy in a short time, in the course of hostilities.

However convincing such a recent experience might be, there are experts who maintain that a possible future war will be a short one. This is a strategic conception of which one finds numerous partisans everywhere, but mostly in Germany. There is nothing astonishing in it, if we allow ourselves to be guided by a very natural tendency to avoid at all costs a new war which would lead, in the long run, to the ruin and annihilation of the belligerents. On the other hand, it is clear that the countries which are economically and industrially badly off and depend on foreign countries for their armaments,

raw materials or other basic necessities, would wish for a rapid conclusion of a war which would be imposed on them and the duration of which might well exhaust them completely.

It is certain, finally, that the technical means put at the disposal of the offensive [3] by the progress of science have considerably increased since 1918. The speed of the transport of troops by motor-cars, the motorization of the units, the speed and power of the new tanks, the co-operation of the air force, the improvement of the radio, all these factors now favour the assailant to such an extent that a rapid attack would be much more redoubtable now than it was in 1914.

The defence against aggression, however, can be increased by permanent fortifications [4] of such strength that the screening forces would be capable of pushing back or checking the first efforts of the aggressor. And chance in war plays such a part that it would be rash in future, as it was in 1914, to risk all the active forces in a premature climax to the detriment of the subsequent mobilization of the national forces. It is by no means certain that any future war would take this precipitate form and that it would be short. But, long or short, the duration of the war is, much more than in the past, the outcome of the organization of total defence opposed to the aggressor—the aggression being directed simultaneously against the interior and the periphery of the country attacked.

A rapid decision could in any case be obtained only by complete surprise [5] or by crushing superiority. To be able to realize these aims, the Eastern policy of Germany would certainly benefit if it met beyond the frontiers,

as it did a thousand years ago, no one but "weakly armed tribes," incapable of opposing the German armies, or "turbulent hordes, numerous but powerless."

If, on the other hand, the opposing forces are relatively balanced, the possibility of a short war and of a rapid decision will greatly diminish. Should even all the dangers that war calls for lead to a moral, material, and economic exhaustion of the belligerents and maybe to revolutionary movements, and were we persuaded of the efficiency of the technique of present warfare, an organization of defence, based solely on the expectation of a rapid decision within the first few weeks after the declaration of war, would seem very imprudent.[6]

And so we have to be prepared for a feat of strength which would engage in the struggle, from the very first days of mobilization, well organized and formidably armed forces. But the whole of the organization of defence should go further and be ready for a total war, that is a mobilization[7] of all the vital forces of the nation, which alone is capable of providing for prolonged hostilities; and first of all, deal with the opening operations characterized by violence and rapidity, where permanent armies would be trying to reach a decision before the completion of the mobilization of reserves. Should these endeavours be vain, the war would enter a second stage, in which the most powerful means of action and innumerable human masses would be opposed to one another on the battlefield.

If these suppositions are correct, they require the application of an effort of organization and co-ordination which must be the greater in proportion as more complex

since 1914, have become the means of action, brought about by ever more numerous and differentiated weapons. Very arduous in themselves, the problems of the mobilization and concentration of troops, of the mobilization of industry, of supplies of arms, munitions, different materials and food-stuffs are especially difficult in the countries where the standing army is rather small. And what about financial problems demanded by such a preparation? Where can we find to-day a State rich enough to cover such expenses? Thus the solution does not lie—because it would be materially impractical—in an intense peace-time accumulation of war material, quickly obsolescent, but in a preparatory and methodical organization of the nation, capable of assuring from the very outset of mobilization the full output of the war industries.[8]

The army alone is not enough. A preparation of this kind must be the work of a whole nation and the outcome of an active collaboration of the political, administrative, economic, and military authorities. It makes an appeal to the moral as well as to the material forces of the nation. It makes indispensable the institution of a body having the authority to co-ordinate all the efforts of the technicians which are directed toward this aim.

This would be an institution which, in present international conditions, and in peace-time, should be readily adapted to the needs of war, enabling the nation to pass automatically and smoothly from the state of peace to the state of war. On this subject more than one lesson is to be learned from the vicissitudes which illustrated the course of the 1914–1918 war.

2. THE EXPECTATION OF A SHORT WAR AND THE FAILURE OF THE GERMAN FEAT OF STRENGTH IN 1914

Eighty-five infantry divisions and ten cavalry divisions were engaged by the Germans against France in August, 1914. They amounted to about four-fifths of the German Army. The German doctrine of war, originally conceived by the disciples of Frederick II and adapted by Clausewitz to Napoleon's strategy, had been tested during his lifetime by Clausewitz's famous pupil, Marshal von Moltke.

The equipment of troops, which had been studied in detail, consisted of powerful and varied armaments. The numerous artillery, heavy and light, adapted to objectives of all kinds, represented a new force. The whole constituted, in German eyes, an unrivalled fighting value, reinforced by the exceptional quality of picked officers, thoroughly familiar, from the theoretical and from the practical point of view, with the smallest details of execution. It was seconded by ranks of methodically drilled N.C.O.s and of trained soldiers.

Small wonder that the German Army, convinced of its superiority, began the campaign with the certainty of a quick victory.

The violation of Belgian neutrality gave Moltke II one of the essential elements of victory, the element of strategic surprise. How can we explain then that he did not finish the war in one stroke, with the help of the main body of his forces, concentrated on his right flank, ready to encircle and crush the French Army near Paris, as at Sedan, on September 2nd, 1870? The more so as on the French side the inferiority was manifest: small numbers

of heavy artillery, reserves lacking in cohesion, and concentration based on assumptions which were proved false from the very first few days of war. . . .

How can we explain that, when the battle was waged in conditions apparently so unfavourable for her, France not only threw back the first onslaught but achieved final victory?

In reality, independent of the chances of the combat, the fundamental differences between the French and the German conceptions of war and of its conduct, which appeared from the very start of hostilities, became more distinct in the course of the War, to result four years later in a duel between Foch and Ludendorff, and thus to contribute to victory.

3. THE ORGANIZATION OF NATIONAL DEFENCE OF THE ALLIES IN 1914

It is a commonplace that none of the belligerents in 1914 was adequately prepared for war, either at home or at the front.

But while shortcomings on the Franco-British side did not constitute organic defects and it was possible to remedy them gradually, on the German side the whole military system and the doctrine of warfare, in spite of facilities provided by the regime and of real efforts to adapt them, showed themselves to be too rigid and too one-sided to be capable of undergoing fruitful modification in the course of the War. It is true, almost two years of bloody ordeals for the Allies had elapsed before it was possible to organize their national defence and to determine the attributes and the respective competencies of the Governments, of the War ministers and of the com-

manders-in-chief. Not until 1918 did they recognize that the conduct of operations had to be assumed by one person and would not bear the division of responsibilities.

In principle, it was on the Entente's side that the famous law of Clausewitz was applied: "Politics are the brains, warfare a means, and not vice versa. . . . And so it is right that the military should be subordinated to politics." [9] From the constitutional point of view, it was the head of the State who, with the Allies, represented the supreme authority, political and military alike; in fact, the conduct of war rested with the Government. From the point of view of military organization in peace-time, the permanent institution of Army Council (*Conseil supérieur de la Guerre* in France) assured the unity of direction. In reality it was not always so. The influence of political parties had a certain weight; in normal circumstances, however, i.e. when the technical factors dominated—and this was the rule—this system gave a suitable framework to the standing army and to the organization of defence in peace-time.

As to the part played by the economic and political element we need only recall the results of the political mistakes made by Germany during the War in order to measure their importance. The violation of Belgian neutrality and the submarine warfare provoked not only the entry of Great Britain into war but that of the United States, and in the long run sealed the German defeat. From the economic point of view, the inadequacy of the German preparations made the blockade of the Central Empires even more efficacious.

With the Allies, on the contrary, the *Conseil supérieur de la Defence nationale* formed in France in 1906 and the

Imperial Defence Committee in Britain did not neglect to provide, under Government auspices, for certain measures of an economic and administrative nature. Their part, purely advisory, it is true, consisted in examining all problems connected with the country's defence. In spite of their not having any definite functions in war-time, their activity in peace-time was useful in so far as it prevented the problems of defence being treated in too one-sided a manner. They provided on the other hand certain groundwork for the foundation of a War committee [10] in England (*Comité de guerre* in France) and the forming of authoritative governments, of which the War Cabinet in 1916 and the Clemenceau Government in 1918 were the best examples.

The direction of war was not the exclusive prerogative of one man. Even Clemenceau, whose extensive authority is not questioned, did not on principle intervene in the conduct of operations. The unity of the general direction of war was absolutely assured by an organization of political power; for all the ministers, the Minister of War included, were subordinates of the Prime Minister.

The authority of the Prime Minister on the other hand was undiminished with the Allies, for the heads of the Governments did not assume under any form, either directly or surreptitiously, the conduct of operations on the front.

The authority of the Commander-in-Chief was not, it is true, questioned so long as the war was waged on one front. But the opening of a second front in the Balkans created difficulties.

The departure for Bordeaux of the Government, at the beginning of hostilities, under the menace of the occupa-

tion of Paris, gave General Joffre a free hand. Only later on, with the stabilization of the front, did the situation become more complicated.[11]

The energy that General Joffre had to display to fight the interference of incompetent politicians, made impatient by the long duration of the War, was equalled by that which he devoted to the conduct of operations. At long last he had to leave. The tragic fate of his successor brought to light the dangerous consequences of the interference of politicians in the conduct of military operations.

4. THE PREPARATION FOR WAR OF THE GERMAN EMPIRE IN 1914

In Germany, the chief of the Great General Staff was placed directly under the orders of the Emperor; his authority was discharged outside the Government and the Ministry of War. His functions were limited exclusively to preparing the Army for war. The military administration, completely subordinated to his competence, had as its head in each State the Minister of War, who received orders direct from the Emperor, not initialled by the Chancellor on whom the minister was dependent in his quality as a member of the Government.

The supreme command was constitutionally assumed even in peace-time by the Emperor, who wished to have the land and naval forces directly under his orders. Helped by a military cabinet whose powers increased to a disproportionate extent, the Emperor alone was responsible, in principle, for the co-ordination of the national defence; if we add that, through the intermediary of the Chancellor he directed the entire war preparations in the

political and economic field, the organization will seem relatively simple and, contrary to the view of General von Hoser,[12] it did not constitute a triumvirate composed of the Emperor, the Chief of the General Staff, and the Chancellor. In reality, this organization was complicated by a heavy bureaucratic machine which created regrettable "bottle-necks" in the preparation of the nation for war. The general staffs of the Army and of the Navy ignored each other. The military administration worked in its separate way while the economic mobilization of the State was studied in the offices of the Chancellor, independent of the military authorities.

Similar to a Napoleon and a Bismarck working together, such a machine could lead, at the least clash between the holders of the principal posts, to dangerous complications, and even, in some cases, to chaos.

The isolation of the General Staff, kept apart from the Government and the Parliament, had the effect of causing important gaps in the whole structure of national defence. If it obtained positive results in the training of the Army, its inefficiency, on the other hand, became manifest in what concerned the total mobilization of the nation which had not been foreseen in the narrow provisions for a short war.

Thus General Ludendorff could write: "Apart from measures which were directed towards assuring the indispensable funds for expenditure necessitated by a possible mobilization, nothing had been done from the economic point of view for the preparation for war." [13] According to the same author, the projects which aimed at setting up an economic war council had been rejected.

There is no doubt that apart from the tactical and

strategic mistakes which were committed, this inefficiency of Germany's economic preparation was, among many others, one of the causes which prevented her from exploiting her numerical superiority over France. A little later, moreover, it caused a serious crisis which told on the food supplies of both the Army and the country.

Small wonder that the civilian authorities, systematically held in ignorance of the measures of preparation for war, were not competent in the discharge of their duties when events at long last made it necessary to seek their collaboration.

The passive submission of the civilian authorities to the military element was equivalent to a total capitulation of the German political elements; it excluded any intelligent and active collaboration. In a moment as crucial as war, said Michaelis, the head of the Government must not confine himself simply to running at the side of the chariot of State.[14] The conduct of war, exclusively taken over in Germany by the military element, accumulated mistakes which it became difficult to remedy in the course of hostilities.

Thus the High Command of the land and naval forces was assumed, in principle, by the Emperor, and in fact by the Chief of the General Staff, who was, in the legal sense, nothing more than one of his numerous technical advisers. The result was that according to the mood or to the personal value of the supreme chief, the Chief of the General Staff could either find himself restrained in his initiative and his freedom of action, or, on the contrary, play the part of an irresponsible dictator; this latter happened towards the end of hostilities when Ludendorff, without consulting either the Emperor, or his direct chief,

Hindenburg, arbitrarily took into his hands the conduct of war. After the failure of the spring offensive in 1918, during which he displayed an energy and an activity deserving of admiration, he was the first to look for support from the Government, which until then he had ostensibly ignored. He did not find any response in Germany to his appeal.

Finally, without direct contact with Berlin, and far from the battle-front, the General Staff acted in a vacuum, completely isolated from the nation and from the Army.

5. THE ORGANIZATION OF A NATIONAL DEFENCE GOVERNMENT AND THE POLITICAL CONDUCT OF WAR

According to whether the armed conflict is localized or takes on the character of a struggle of coalitions, the premises on which the political conduct of war should be based will bring about either a simple or a complex organization, determined by the very various contingencies which a war of coalitions implies.

The political bases of a war of coalitions are, in fact, defined by treaties of alliance. In case of war, a whole series of questions of a political order will arise, which will call for solutions necessitating periodical meetings, either between Ministers of Foreign Affairs, or, as is more often the case, between their representatives. It may be necessary, on the other hand, to conclude political agreements of a special type, such as during the last War, the London Agreement (May, 1915) or the Agreement of Kreuznach (in 1917) between the Central Powers.

The differences between the economic structures of the Allied States lead also, in view of the common front, to economic and financial agreements, which the logic of

events must impose. It would probably become necessary in this connection to create inter-allied committees of experts.

Finally, the problem of unity in the conduct of war which will present itself as obviously as the common plan of operations should be solved. It was only towards the end of 1917 that the Allies signed an agreement of principle, which, however, was still too general, for long negotiations and bloody experiences were needed in order to achieve, by the end of the War, the unity of command without which General Foch would have been unable to assure the joint action required by the circumstances. On the other hand many useful results were arrived at through the agreement concluded in September, 1916, between the Central Powers.

When there is no agreement already outlining in peace-time all the elements of co-ordination and of united direction of war between the countries determined to maintain and, if need be, to impose peace,[15] it is clear that on the day when war breaks out in the form of a struggle of coalitions the operations will present at the start the most chaotic aspect as in the eighteenth century the Seven Years' War and, more recently, the war of 1914–1918.

The aspect of a national localized war would be quite different. Unity would be automatically assured, both from the point of view of home and foreign policy as from the economical point of view, by the government which would assume the supreme conduct of the war. Its activity with regard to the needs of military operations might be expressed quite well by the concise formula adopted by Clemenceau when he took over the Government in

1916: "My policy? I make war. My finances? I make war. My justice? I make war."

If the lesson which we ought to learn from the war of 1914 is not to remain a dead letter, we must now consider it proved beyond doubt that the organization of national defence necessarily carries with it the total mobilization of the nation and the employment of all the available forces both inside the country and at the front.

The necessities of modern warfare, on the other hand, call for a strong concentration of power, both in the sphere of the general direction and in that of the operations. The co-ordination between the two sources of the will to victory will find itself realized in a hierarchic manner which will imply precise responsibilities.

The respective powers of the highest authorities in the State will have to be rigorously defined. With regard to the conduct of war, only the government whose exclusive prerogative it is, will be qualified to direct the collective effort of the nation, inside and outside the country, in the political, economic, and military field.

To the exceptional situation brought about by war should correspond exceptional powers and an exceptional organization of the government which would limit in particular the role of the legislative power, and at the same time consolidate the executive. The State must be able to intervene usefully in all fields of the nation's activity, restricting, among others, the freedom of the Press, of production, and of trade. While avoiding an excessive and nearly always harmful militarization of the nation, these measures should permit the government to free itself from the bonds of internal policy particularly dangerous in time of war. On the stability of a war gov-

ernment also depends, to a large degree, the morale of the combatants and the continuity of effort.

The action of the government, in time of war, is incompatible with the normal functioning of Parliament. Because of the rapidity of events which call for instantaneous decisions, the responsible government cannot be tied by the habitual procedure of questions and debates. Invested with the confidence of the nation, the government of national defence should enjoy the same freedom of action with regard to the direction of the war as the supreme command with regard to the conduct of operations.

In time of war, when all the energies of the nation have to be directed towards action, the activity of Parliament should also be adapted to the exceptional circumstances which war implies. The most rational solution would be for the legislative authority to confer full powers on the government and to adjourn, and to hand over the majority of its privileges to a council of national defence which would automatically take over its functions.[16]

Provided with full powers, the government as it is constituted in peace-time is, however, not yet capable to direct war. Called upon to make rapid decisions, the head of the government would gain many advantages by reducing the numbers of his collaborators to the minimum. His cabinet would include the following ministries: the Ministry of National Defence which would centralize the Ministries of War, of Air, and of the Navy; the Foreign Ministry; the Ministry of the Interior which would comprise, in addition to its usual departments, those of the Ministry of Health, of Labour, and of National Educa-

tion; the Ministry of National Economy, whose jurisdiction would include finance, trade, industry, and agriculture; the Ministry of Roads and Communications, which would deal with communications on land and by sea, posts and telegraphs, and public works. The secondary posts would be assumed by under-secretaries of State. A "secretariat for national defence," a mixed institution, composed of civilian and military technicians, would constitute the technical general staff, put at the disposal of the Prime Minister; it would be exclusively charged with the preparation of the basis of decisions which would rest, in peace-time as in war, with the head of government, in everything connected with the general conduct of national defence and of war.

The head of such a government would acquire, at least in appearance, quasi-dictatorial powers.

In reality, as all the posts would carry with them well-defined powers and responsibilities and would, in spite of their reduced number, correspond to all the aspects of national life in war-time, the functions of the head of the government would above all constitute a kind of liaison or supreme co-ordination carrying with it the power to make arbitrary decisions.

6. THE GOVERNMENT, THE COMMAND, AND THE MILITARY DIRECTION OF WAR

The general directorate, with regard to military actions to be undertaken, will wield the essential power of the general military direction of the war, which must not be confused with the supreme command or the conduct of operations.[17]

Being in close touch with the government, the military

direction of the war will have as its objects, outside the country, the co-ordination between the allied military moves and its own, in view of a united plan; inside the country, the distribution of effectives, of military material and munitions among the different fronts. It will have to choose between the results which an offensive or defensive attitude may have with regard to national defence and, then, perhaps work out the plan for an offensive. It will decide on the opening or closing of local fronts, as was the case with the Salonika front during the 1914–1918 war. Its job would be the proposal or the rejection of a partial or general armistice and the political exploitation of the successes obtained. In a word, it will constitute the supreme instrument of liaison which centralizes all the matters relating to the policy of war, equally vital both for the government and for the supreme command.

Decisions of such importance cannot be entirely subject to the individual decision of the head of the government or of the Minister of National Defence. They involve the responsibility of the entire Cabinet and of the head of the State. They are within the competence of the government, and in case of necessity, should there arise differences of opinion, the Prime Minister would be called upon to take an arbitrary decision.

In order to be able to face the obligations resulting from their different functions, the Government of National Defence draws up the budget and makes pronouncements itself on measures suggested by the supreme command with regard to A.A. defence, the territorial army, the navy, and the air force. Its powers extend to the establishment of a war plan in all that concerns the

effort demanded from the nation. Should a simultaneous conflict with several adversaries be foreseen, the government has to decide against which of them the principal effort of the armed forces is to be directed.

It is obvious that in view of their adjustment all these matters of purely technical order require the active collaboration with the government of the military element. A high military committee could be created with that power. It would comprise in peace-time the chiefs of the general staffs of the army, navy, and air force; at the head of it would be a general designated to assume the supreme command. It would be composed, in war-time, of the deputies of the chiefs of staff and of a general designated by the commander-in-chief.

The plan of war, as far as the operations of the military forces are concerned, would be thus the work of the High Committee. The High Committee would then submit it to the government by whom it could either be accepted, rejected or modified.

In reality, from the professional point of view, the institution of a military High Committee is far from being ideal. It would be infinitely more logical to create even in peace-time a supreme command of the army, navy, and air force. It is a solution which will probably be adopted by all the countries whose navy and air force are relatively little developed, and by the dictatorships.

Be this as it may, a technical instrument of this kind would be useful even in the countries where there exists a ministry of national defence co-ordinating all the elements. The head of this High Committee would submit his proposals to the Minister of National Defence, who would refer them to the government, or rather, in war-

time, to the reduced cabinet of which we have spoken, and in peace-time to a council of ministers, constituted in an analogous manner.

7. THE CONDUCT OF OPERATIONS AND THE POWERS OF THE COMMANDER-IN-CHIEF

The conduct of operations and all the decisions concerning them are the exclusive privilege of the General Officer Commanding-in-Chief, responsible for his actions to the government. He has full discretion to use the means at his disposal within the framework of the general plan of war. This excludes formally all interference on the part of the government and, *a fortiori,* also that of other political elements, in the military operations which in the course of a modern warfare would demand immediate and resolute decisions.[18]

The conduct of operations comprises not only the direction of the battle *stricto sensu* but everything appertaining to the material organization of the front, its lay-out, the concentration of the armies and their distribution in armies or army groups; in a word to the whole of the military operations, as conceived and directed by the Commander-in-Chief within the plan of warfare adopted by the government. The initiative of the Commander-in-Chief cannot be restricted any more than that of the captain of a ship in a storm. He must be the absolute master of his decisions, not only by reason of the rapidity characteristic of military operations in modern warfare, but also because of the element of surprise and consequently of secrecy which would be its decisive element. In all instances when the armed forces are operating on different fronts and are under a single command, the

Commander-in-Chief would limit himself to giving general directions, which would leave to the commanders of the fronts all scope for their execution.

The army, navy, and air force, operating on one front, will be under the command of one chief. This will avoid the capital mistake made at Gallipoli in March, 1915, when the Navy and the Army had each their separate commanders-in-chief. Every time the allied armies find themselves united in a joint action, a joint inter-allied command should be instituted.[19]

The crushing and, from the technical point of view, manifold burdens which weigh on the one hand upon the Minister of National Defence, and on the other upon the Commander-in-Chief, make the unification of these two functions impossible even if the Minister should be a soldier by profession.

It is none the less true that by reason of the character of modern warfare, in which extension in space forms one of the principal characteristics, the zone of operations cannot be restricted. It can be seen from this that the powers of the Commander-in-Chief and of the government threaten to overlap if they have not already been clearly defined in peace-time.

With regard to the responsibility of the supreme command, the experience gained during the 1914–1918 war seems to have settled the question quite definitely, putting the Commander-in-Chief under the orders of the government through the intermediary of the Minister of National Defence. Such at least was the solution adopted by countries having a parliamentary system.

But whatever the regime of a country, the freedom of action of the High Command must be absolute with re-

gard to the conduct of operations. Should the High Command lose the confidence of the government, it might be dismissed, but this should be done without interfering with the conduct of operations.

8. CONCLUSIONS

We must state with regret that the civil and military organization of national defence such as we have outlined, seems so far not to have attracted anyone but the dictator countries, including the U.S.S.R. We might therefore think that only these regimes have benefited from the experience acquired in the war of 1914. But whatever the political regime, once the necessity of national defence is admitted, it is war which imposes the methods. For the democracies, *the danger of a dictatorship* does not lie in a rational organization of defence which necessarily implies special powers as to the respective jurisdiction of the head of the government and the Commander-in-Chief, *but in the chaos which would result from the confusion of responsibilities and powers.*

For some time, moreover, the dictatorial spirit has left the military element without hope of ever returning and passed to the civilian sphere. There was, perhaps, some reason to welcome the authoritarian power of Georges Clemenceau, which proved to be a providential event in the course of a crisis; this is, however, an exception and not a good example. An unforeseen dictator, imposed by circumstances, may not always be so beneficial, but may show himself more harmful than an accepted chief and one whose powers are defined and limited beforehand, excluding all possibility of arbitrary decisions. Be this as it may, if we assume that war is not a vain menace in

to-day's world, the organization of these institutions cannot be improvised. Even in peace-time the integral mobilization of the nation has to be provided for by the Council for National Defence and the High Military Committee. This will call for all necessary measures for investing the reduced war-time government with exceptional powers.

Directed by the head of the government, the Council of National Defence co-ordinates the preparatory action of the different ministries in the political and economic sphere. From the strictly military point of view, the general appointed to exercise the chief command in war-time, assumes the responsibility for the technical preparation of the army for war. His competence must be sufficiently extensive for him to be in a position to assume the co-ordination of the army, navy, and air force whenever there is no ministry for national defence.

Such an organization should be provided for in peace-time by the constitution and should confer upon the head of the government a power extensive enough to enable him to direct effectively all the activities connected with national defence. The presidency of the Supreme Council of National Defence, in view of the limited powers at the disposal of the Prime Minister in democratic countries with a parliamentary regime, cannot suffice as such. On the other hand, the co-ordination of the technical services with the Supreme Council, that is the direction of the High Military Committee, must be exclusively assured by the general selected for the high command.

Sponsored by certain statesmen and professional soldiers, like Generals Robertson and Maurice,[20] an organization of this kind has been working in Italy for several

years. The Prime Minister, Signor Mussolini, held there until 1929 and again in 1933, the portfolios of War, of the Navy, and of the Air. The Chief of the General Staff, subordinate to him, the future generalissimo, is entrusted with the preparation and the co-ordination; he gives his orders to the chiefs of staff of the Army, Navy, and Air Force who, together with the under-secretaries of State of these ministries, constitute the executive powers in the technical and administrative fields. Although he gave up the portfolio of War in 1929, thinking that the unification of the Army had been achieved, Signor Mussolini kept the Chief of the General Staff under the direct orders of the Prime Minister.

Though it seems to be best suited to the necessities of modern warfare, an organization of this kind might not prove practical in other countries. But even in the most democratic regimes, there is no constitution opposed to the nomination, in peace-time, of a commander-in-chief entrusted with the preparation of all the elements of national defence. His position with regard to the government may be clearly defined if he is put under the orders of the Minister of War; this would particularly exclude all the preponderance of the military element over the civilian one.

Thus the direction of war, both in case of a fight of coalitions as in that of a localized war, cannot be assumed in the present circumstances by one man only. It would demand universal powers, at the same time political, economic and military, possessed by men of genius, who even then would not be proof against fatal errors.

To conclude, a rational organization of national defence would comprise a reduced war cabinet, headed by

the Prime Minister invested with full powers by the Council of National Defence to which the general direction of war would fall, and a High Command, solely responsible for the conduct of operations.

Provided that they are strongly united and fully conscious of their ideal, to the extent that their love of freedom would be equalled by their will to preserve it and to defend it, the democracies can find in their institutions the elements of a rational organization which will assure their victory.

REFERENCES

1. *See* Chapter VI, Section 6.
2. In staking everything on military preparations and a plan of warfare suited exclusively to a campaign lasting a few weeks and bringing a brutal decision, the Germans committed a cardinal error when opposing an adversary so important as France.
3. *See* Chapter VII, Section 1.
4. *See* Chapter VII, Sections 1, 2, and 3.
5. *See* Chapter V.
6. It is significant to point out in this respect that the Soviet military organization is based on the assumption of a long war.
7. *See* Chapter IV.
8. The armies engaged at the beginning of hostilities represented only a limited part of the military potential of the belligerents. Only in the thick of war, after the developing of all the means of action, would the effective power of an armament, of which the mobilization resources constitute only an insignificant part, show itself. The differences which would then be seen will surpass by far those of the 1914–1918 war. The efficiency of modern military systems thus lies principally

in an organization which can in a minimum of time attain the maximum development of its armed power.

9. General V. Clausewitz—*Vom Kriege,* Behrs Verlag, Berlin–Leipzig.

10. The war committee, composed of the ministers of Foreign Affairs, War, Navy, Finance, and Armaments, was directed by the Prime Minister.

11. *See* R. Poincaré—*L'Invasion,* v.V. of: *Au service de France* (Plon, Paris).

Mémoires du General Joffre (Plon, Paris).

J. M. Bourget—*Gouvernement et Commandement* (Payot, Paris, 1922).

General Alexandre—*Avec Joffre* (1911–1916). (Berger-Levrault, Paris, 1922).

12. General von Hoser—*Die obersten Gewalten im Weltkriege.* (Stuttgart, 1931).

13. Ludendorff—*La conduite de la guerre et la politique* (Berger-Levrault).

14. General von Hoser, *op. cit.*

15. The difficulties to be overcome in order to bring about an understanding of this nature are of the same kind as those presented by the creation of an international army. In the present state of international relations and of national rivalries, the limitation of national sovereignty seems difficult to envisage in practice.

16. We recently had an example of this kind of procedure on the occasion of the Polish–Soviet conflict. The General Commander-in-Chief of the Polish Army, Joseph Pilsudski, exercised at the same time the functions of the head of the State with the assent of Parliament, that is to say, a real dictatorship. He could count entirely on the patriotism of the young Polish Parliament. Although the Polish–Russian conflict was a total war, at the critical moment the Parliament constituted a war cabinet, presided over by Vincent Witos, repre-

senting the peasant masses, and resigned its functions in favour of the Council of National Defence. Called by Parliament, which did not intervene in the conduct of operations, these two institutions contributed considerably towards the final victory.

Among parliamentary privileges, the right of control of the armies in the field seems in fact to be one of the most controversial. Superfluous in a well-founded organization, this right proved to be more harmful than useful in the War of 1914. It indirectly influenced discipline by diminishing the authority of the chiefs on the battle-front to such an extent that, by his circular of October 6th, 1917, which is a model to follow in view of a possibly more complete reform, Paul Painlevé, Prime Minister and Minister of War, decreed that this right of control would henceforth be exercised only on special authorization of the Minister of War, and that it refrained from all interference in the conduct of operations.

17. A mistake committed by the Germans by the creation of a G.H.Q. (*Oberste Heeresleitung*) which combined these two functions; this amalgamation seems to be one of the causes of their defeat.

18. The war of 1870–71 constitutes a classical example of the untimely interference of political elements in the conduct of operations: While Bazaine shut himself in at Metz with the army of Lorraine, MacMahon ordered the retreat of the army of Alsace on Châlons. According to Moltke (*a*), these two operations were such as to assure to the French armies the maximum of advantages in the given conditions; MacMahon's "volte face" on Metz to help Bazaine seemed to him incomprehensible.

However, he very soon learned the reason for it. He found it in the French papers which published the speeches made in Parliament, and which claimed that the whole country would disapprove of MacMahon should he abandon his colleague.

The consequences of the changing of MacMahon's plans quickly followed: his army thrown back to the Belgian frontier, the defeat of Sedan, the final smashing of the army at Châlons, the opening of the road to Paris where revolution broke out, for other reasons, incidentally, than those quoted by the Minister of War.

(*a*) It was learned later on that, informed by MacMahon of his project of retreating towards Paris, the Minister of War sent him the following telegram: "If you abandon Bazaine—it will mean revolution." *

19. The part played by Mackensen in Serbia, 1915.

20. William Robertson—*Soldiers and Statesmen*, 1914–1918.

General Maurice—*Le gouvernement en temps de guerre.*

* *Gesamte Schriften und Denkwürdigkeiten des Generalfeldmarschall Grafen von Moltke, III Band, Geschichte des Deutsch-Französischen Krieges;* pages 69 and 73.

CHAPTER II

The Modern Army

1. GENERAL REMARKS.

"THE ARMY OF DISARMAMENT." OFFENSIVE AND DEFENSIVE

THE demographic force of a population, the resolution of a nation to fight mercilessly for its rights, the extent of the territory and the advantages of a happy proportion between the number of inhabitants and the length of the frontier, are no longer the sole factors deciding the military power of a State. Much more than in the past, military strength depends on the degree of industrial power which a country's national economy can attain in war-time. This change has been brought about by the evolution of technology, so very characteristic of the twentieth century, which stamps the modern organization of national defence.

This condition puts at a disadvantage all the countries situated to the east of Germany and Italy, for the present not excluding Russia. On the contrary, the Third Reich benefits by it, and it would profit more by this natural advantage if it were to free itself from the military clauses of the Treaty of Versailles; and this is almost an accomplished fact.

Only a far-sighted organization, both political and mil-

itary, would be capable of maintaining or re-establishing the balance between the European countries.

With the introduction of new weapons such as the submarine and the air force, the general distribution of the military potential in Europe has, in fact, completely changed. The times are past when the British Empire could rely entirely on its Navy for its security. It has held the mastery of the seas ever since 1588 (the destruction of the Invincible Armada). The insular position of Great Britain, as it appeared during the 1914–1918 war, no longer provides her with sufficient elements of natural security, because of the danger of air-raids.

The re-organization of national defence thus calls for new factors, unknown before the 1914 war and not wholly developed in the course of that war; among these factors, the quantitative and qualitative proportions to be determined between the army, navy, and air force are not the least important. Without entering into details of this organization with regard to the air force, to which a special chapter is devoted in this work,[1] we can easily foresee that in the near future it will free itself from the narrow framework of a complementary weapon, in which it was enclosed until recently.

According to the part assigned to them in modern warfare, the special weapons of the army are subject to changes tending towards a diminution of the infantry effectives in relation to the increase of collective armaments; towards an increase of artillery, of the services and general reserve units; towards a suppression of mounted cavalry units and the creation of motorized units. The increase of armoured vehicles and the development of A.A. defence units are constant and rapid. Some of the

old weapons such as, for instance, the infantry, and the cavalry, tend on the other hand to become self-sufficient, by the addition of units from the other arms; we may also foresee liaison through integration.

The tendency to combine different arms, interesting in itself, calls for considerable caution, lest the old arms, benefiting by the fact that they are equipped with new technical means, should lose their essential characteristics, i.e. those which determine their usefulness and the advantageousness of their intervention in battle.

Whatever the solution of this problem, the principal difficulty remains the same: namely, that of providing the troops with material, and above all with modern material.

It is beyond doubt that in modern warfare use will be made of the most varied and the most abundant technical means. The most modern military material is, however, very costly. Considerations of a financial nature will very often hinder the amassing of the stocks of technical material necessary for an army. Maybe we shall have to revert, by economy, to ancient traditions and create picked units; the best-armed and best-equipped soldiers would then exercise incomparable fire-power, greater mobility and offensive capacity superior to all other units. These would be crack troops, destined for difficult and exceptionally important operations.

In certain countries, particularly in those which have a very well developed system of fortifications, it might seem opportune to form special tactical units, particularly suited for service in fortified regions, while the other armies would remain organized entirely with a view to manœuvre and mobility.

In short, it is of capital importance to define formally

what is meant by the motorization and mechanization of the units, to know in what measure and to what arms these principles apply, whether totally or partly. There would still remain to be solved the problem of co-operation of the motorized and non-motorized units; and lastly the raising of the total power of these troops to its maximum by an adequate distribution of the various means.

While estimating at their proper value the modifications prevailing at the present time in the organization of armed forces, we must refrain from precipitating or exaggerating their introduction. The snobbery of modernization at any price is expensive. In getting rid of an exaggerated conservatism—frequent in the old armies and bound to degenerate into a routine apt to hamper improvements necessary in the twentieth century because of the rapidity of technical progress—we should avoid hazardous and manifold adjustments in the field of organization. An army is a complex and delicate organism, which may be easily upset and is difficult to repair. In particular, to undermine the soldiers' trust in the military system in force by premature experiments would suffice to render that system inoperative in the event of war.

Already, before 1914, the invention of quick-firing automatic arms, the considerable development of artillery material, compared with which the artillery of 1870 was a primitive arm, the great progress of ballistics, the introduction of the telephone and radio-telegraphs, and the development of the motor-car had brought about a complete transformation in the principles then prevailing in strategy and tactics. It is undoubted that, influenced by these inventions, strategy and tactics underwent profound changes; the 1914–1918 war, during the four years

of its duration, gave an extraordinary impulse to inventions in the technique of warfare; it even brought forth a certain evolution in the methods according to which the art of warfare was practised. Nevertheless it is quite true, as Marshal Foch justly observed, that they did not upset the fundamental principles.

The same will happen in future. The principles will remain intact. But, under the capital influence of technical progress, the methods of warfare employed, as well as the systems of military organization, will have to be submitted to a constant revision.

Thus it seems probable that in the present state of international relations one of the most decisive weapons in war would be poison gas. It is at least possible to deduce this from the failure of the efforts made in the international sphere to set up a "chemical peace." The mere menace of chemical weapons and the possibility of applying them on a large scale have brought forth all sorts of measures in the organization, both of the armed forces and of whole nations. The individual defence against gas-attacks consists, up to now, in the use of masks and other apparatus with filters. This means is only partly efficient and serves only for the protection of respiratory organs. It would become inoperative in cases of gas acting on the whole body. If, in this eventuality, overalls covering the men from head to foot were to be used they would check the soldiers' movements, which would hamper their capacity for combat. Thus it is a consideration not without interest from the point of view of the equipment of troops and their tasks. The only arms against which the gas-attacks remain ineffective are the aeroplane and the tank. The first reaches safety by climbing into the air

above the danger zone, the second obtains the same result with the help of hermetically closed armour or thanks to the use of compressed air or oxygen inside the tank. To obviate the danger of chemical war it would be expedient, in the first place, to develop and to use to the maximum these two arms.

But the modern organization of the army might also be subject to the often preponderant influence of political factors. Thus the differentiation (there have lately been attempts to establish it) between specifically defensive or offensive armaments [2] corresponds less to a factual state of affairs than to an ideology without positive foundation; it has only a face value. The army is an instrument which can be used either to defend oneself or to attack: even if the aims are different the instrument remains the same; but it can be deflected whenever conceptions which have nothing to do with necessities of a technical order inspire its organizers.

It is beyond doubt, in fact, that an army systematically prepared for an offensive—such as is envisaged by certain European States in spite of international conventions—assures the aggressor of an incontestable superiority over a country whose military preparation has been entirely inspired by defensive views. Even if there is a moral difference between a defensive and an offensive war, there should be none, in principle, from the technical point of view, between the opposing armies, unless the aggressor benefits by important initial advantages. A solely defensive organization would expose the attacked country to bloody sacrifices and to a manifest inferiority, at least in the first period of war.

A so-called defensive organization would prove really efficacious only in case of a crushing superiority in the armaments of the attacked country, as if, for instance, Austria declared war on a Germany having peaceful intentions while employing all her military means. The alleged solely defensive organization of a modern army does not correspond in reality to any of the necessities imposed by war.

We cannot, however, deny the existence of paratechnical influences which act in this sense. They tend to reduce to the minimum the duration of active service, to diminish the importance of the army in peace-time, to deprive it of the so-called defensive weapons in order to take away from it all that might favour any aggressive intentions. They seduce pacifist spirits, who by the horrors of war are strangely misled as to the proper means to oppose it and who ignore the technical needs of national defence.

On the contrary, one might envisage for this purpose the forming of a union of peaceful nations whose military preparation would be organized according to a common plan; such a union would limit the military means of each member-country and would be really capable of imposing peace, by exercising an incontestable superiority only as a whole.

This would not, of course, be a resuscitation of the system of military alliances such as was in operation before the War although it must be said that it assured quite a long period of peace after the Franco-German conflict of 1870. Based on the balance of power, this system provoked an armaments race the only issue of which could be war. This situation also runs the risk of prolong-

ing itself until such time as an *entente* is formed, of the kind we have advocated and which would put at the service of peace a united armed force.

A union of this kind which would comprise, at the beginning, all or a part of the old allies, *without, however, excluding any candidature,* would lessen considerably the expenditure on armaments of each of the participating nations, at the same time rendering materially impossible every attempt at aggression against any one among them.

Be this as it may, although this system seems to be the only remaining chance of limiting armaments without any risk, the least we can say of it is that it is not politically mature. It amounts to this, that, in the present state of international affairs, an army of a defensive type, that is, according to the Geneva terminology an "army of disarmament," in whose favour considerations of a financial order weigh heavily, would not be able to face the problems which would arise before it in the event of war.

2. THE MISSION OF THE STANDING ARMY IN PEACE-TIME

It is not enough to equip an army with machines as perfect as they possibly can be to assure the defence of a nation. Defence cannot be effective without preliminary preparation, which must tend towards united action on the part of the army and the nation—the first and foremost task of the standing army in peace-time. The unforeseen damage brought by so devastating a weapon as gas, might even paralyse all the activities of an unprepared population. The spirit prevailing in the army faithfully reflects that of the nation. As Taine has already observed: "All the causes which disintegrate a nation, also

disintegrate the army." The times are past when a professional army could exist apart from the nation.

The military training of a citizen thus remains one of the principal tasks of the army. But the tendency at present is to reduce the duration of military service; this makes itself felt in spite of technical progress which multiplies the items of instruction to be given to the soldiers. As it is the job of professional instructors, the military education of the citizens would achieve better results if it were performed within the framework of the standing army and not at schools or at centres of military education, independent of the army. Apart from the technical advantages in favour of this solution, military education cannot dispense with the moral force represented in the corps of troops by their traditions, the collective notion of an accepted discipline and the respect for the colours. It is to Napoleon, who knew how to obtain a maximum efficiency from his soldiers, that we owe this definition which has not lost any of its present-day value: "Moral force compared with physical force is as three to one."

With a view to increasing the moral force of the standing army, the instruction given will be more fruitful if the body of professional instructors is very reliable and the troops to be trained are well disciplined.

The same applies to the second mission of the army in peace-time which consists, in the majority of countries, in seeing to the maintenance of public order. It seems, however, that this is completely opposed to its essential mission which lies in preparing for the national defence and not in assuring internal peace. Should a party government use the army for its particular aims and mix it with its police, the army may incur unjust reproaches, liable to

facilitate anti-militarist feeling. The missions relating to the maintenance of public order are the concern of the Minister of the Interior and should be assumed by a State police, such as the *Schutzpolizei* in Germany (*Schupo*) or the constabulary in the majority of countries.

To use for controlling movements against public order detachments of recruits, more or less badly instructed and officered, and in any case very young, is to commit a double error from the political and military point of view. In fact, it may happen that, losing their heads, they may be disarmed, as in 1923, in Cracow, or they may start bloody massacres, as in Geneva, in 1932. It is preferable to use units which may be small but are perfectly officered; men who are in control of their nerves and who know all the resources of their calling.

3. SCREENING OPERATIONS AT THE OUTBREAK OF WAR

Screening operations have as their object the protection and integrity of the territory, safeguarding the mobilization of the nation and the concentration of the army.

From the purely military point of view, the incursions of enemy detachments beyond the frontier need not present serious inconveniences if they can be repelled without delay. From the political point of view, on the contrary, and mostly where public opinion is concerned, it seems preferable to avoid any enemy incursion on the frontiers as well as inside the country, because it might prevent mobilization by spreading panic among the population.

In principle the purpose of the screening operations will be to assemble *in a minimum of time* fighting effec-

tives sufficient to stop the presumed aggressor. The A.A. defence of the entire territory will not be a part of its tasks, but the screening will benefit by it and the covering units will be equipped with units of defence against aircraft, taking part in the operations. They will make use of the speed and the suppleness of movement characterizing the motorized combatant units adapted to every terrain. Well-equipped in means of transport and transmission, the units employed in the covering operations will be technically well trained and will possess powerful supplementary means of fire, air force units and armoured machines.

The covering operations, but for a few particular cases, cannot, however, be considered as an element independent of the prevailing military system. Their tasks originate in the civil and military organization of the national defence in peace-time and of the general plan of mobilization; they are a part of a whole.

The covering operations will devolve upon units which will consist of local reserves mobilized in a minimum of time (a few hours if possible) from the very first day of war and specially trained for this purpose. Some of these units may be active troops that have been stationed on the spot during peace-time with reinforced effectives, such as, in the U.S.S.R., the corps of Red Cavalry. It would be more logical to make them formation troops, and to reserve the active units for manœuvre, as in Germany (*Grenzschutz*); but the wish to protect oneself against a possible precipitate attack sometimes prevails.[3]

In this respect the ideal armament for modern screening operations[4] with reduced effectives would include a system of permanent fortifications armed with powerful

means of fire, with passive obstacles, numerous shelters, an underground network of communications and signals and a safety garrison, in order to assure the security and the defence of the frontier at the first alert. Should the resistance be locally broken, mobile reserves, formed principally by great active units, preferably motorized and conveniently distributed over the rear, should be kept in readiness to re-establish the integrity of the front.

The building of fortifications thus conceived is nevertheless very onerous. Countries having reduced budgets would be compelled to remedy it by using special troops similar to the German *Grenzschutz* or to the Soviet or Polish corps of frontier-guards, which from the point of view of screening action would play an auxiliary part beside the standing army. It is only fair to add that the organization of these formations is not based on the same principles. It is clear that in Germany it is based, independently of budgetary considerations, on the will to keeping in hand the standing army, equipped and in battle formation, in the expectation of an offensive war with rapid decisions.

4. THE CRACK CORPS AND THE PROFESSIONAL ARMY

Even if methodically performed, the mobilization can increase the effectives that have been reduced to the minimum in peace-time, only by the incorporation of reservists, not always adequately trained and of inferior physical resistance. To prevent this inconvenience which runs the risk of momentarily lowering the fighting value of the army, almost all the belligerents before 1914 had at their disposal chosen corps which, of course, were not

officially designated as an *élite*, but were ready to be employed in the delicate initial operations. Such were, in France, certain screening units and the African troops; in Germany, the third Brandenburg corps and the regiments of the Guards; in Great Britain, the Guards, the Highlanders, and the Regular Army in general.

It is true that with the prolongation of war the differences between these crack units and the others gradually diminished, and this brought forth a general levelling of the fighting value of each army after a few months. It became apparent, however, on all the fronts, that it was useful to train specially selected corps in the form of battalions, regiments, and even large units called assault or shock units.

A fortiori, with the modern armament, the reduction of active service and the weak proportion of active elements in the mobilized troops, it is to be feared that the formation units, of an average type and medium value, capable of giving satisfaction in commonplace circumstances, do not offer enough solidity during particularly hard tests. Would they be quite reliable, for instance, in case of a precipitate initial attack, or in zones of defence attacked by powerful mechanized arms, or for the offensive and for manœuvring on a free terrain? Nothing is less certain, particularly in the first weeks of hostilities.

These tasks call for very well-trained troops of proved cohesion and great moral vigour. Modern fighting will more than ever demand of the soldier courage and training under the orders of very experienced chiefs. The mechanized armies, the air force, and the tanks will achieve good results only if manned by a personnel of

high professional value. Moreover, the maintenance of the delicate and complicated material will call for very skilled technicians.

Thus the picked combatants, the qualified men and the technicians will first have to be selected, then to go through very careful training. We shall be able to find them among the best arms of the force but on condition that their training is prolonged and their instruction intensified. In a word they will be mostly professionals who will form the framework for the mass of recruits and reservists. The professional soldiers will thus regain in our own time the importance and the prestige denied to them by some at the end of the nineteenth century. Their number will in general have to be increased; their proportion among the mobilized troops will not be uniform, but medium in the units of medium category and high in units having important missions to fulfil.

While basing the defence of the country on the general mobilized forces of the nation, trained beforehand by active service and periods spent in the reserve, we are thus led to foresee real crack units. They would be formed either by the halving or reducing of certain professional peace-time units, by the incorporation of exclusively young elements, well trained and distinguished by their moral value, or by reinforcing the ranks of certain arms by voluntary recruitment for long terms of service.[5]

Some people have gone further in so far as the employment of professional soldiers is concerned and have advocated the return to mercenary armies. This conception is rather Anglo-Saxon; but Central Europe seemed, at least quite recently, to be inclined to adopt it. It was examined as an expedient for disarmament.

If all the armies of the Continent were organized according to an identical system and on a reduced basis, the type of professional army could, perhaps, prevail over the system of the armed nation. It would even suffice, as we pointed out before, that a group of nations, important enough to impose peace, should come to an understanding as to the qualitative and quantitative distribution of the armed forces, excluding all possibility of aggression by one of them, for the problem to be definitely solved in this sense.

But this is a project touching much more on politics than on the technique of warfare.

Be this as it may, the partisans of these new theories make it apparent, independent of a solution of this sort, that in virtue of the efficiency of modern arms, the system of a professional army supplemented by a national army would be the best at present. The heavy burden of mobilizing and maintaining human masses as colossal as towards the end of the 1914–1918 war should, in this view, be avoided if possible. There were, in fact, almost 16,000,000 men in the western theatre of war in 1918.[6] The material used by the formidable armies during the 1914–1918 war grew too, until it reached almost astronomical figures. The battle-fronts extended over hundreds of miles. The conduct of operations with such masses and with usually imperfect means of transport and communications became an almost insoluble problem. It is for this reason that General von Seeckt in Germany[7] resolutely declares himself in favour of a professional army and a lightning offensive.

England, whose army has always been a small professional body of men, seems to envisage for the future a

"mechanized war." [8] Italy, too, originally declared herself in favour of an army of picked men which, according to the doctrine of General Douhet, would be supported by an air force to which a decisive part would be assigned in war-time.

Illustrious precedents seem to strengthen this view. As Clausewitz pointed out, Alexander the Great, with reduced but admirably-trained effectives, easily won the superiority over armies incomparably more numerous, and he "reduced to dust the rotten frame of the Asiatic States." Gustavus Adolphus, Charles XII, and Frederick the Great did not proceed very differently. This is another good reason, some theorists will say, to follow their example; such armies would not fail to assure an undoubted superiority over incoherent masses less well trained and organized in accordance with the system of the armed nation.

If we think, in addition, of the enormous cost of modern armaments, when sums necessary for the construction of a fighter-plane would suffice to equip a whole regiment with rifles and machine-guns, and the price of twelve tanks would pay for the normal armament of an infantry division, the thesis does not lack elements to support it.

Other arguments of a technical order also back this view. The rear formations destined to supply the motorized units and keep them in motion easily surpass in volume the combat units they have to serve. Besides, the formidable quantity of ammunition consumed in combat by automatic arms or by quick-firing artillery, and the manifold character of the various requirements, necessi-

tate services of supplies and of transport increased to proportions which have never been foreseen.

For these two reasons, the development of armies equipped in a modern way does not seem likely ever to surpass certain limits. The first reason would bring about a crisis of armies relatively important and abundantly provided with technical means of combat. These are too expensive for countries, even the rich ones, to acquire in peace-time in sufficient quantities to last until war-production is in full swing. On the other hand, the replacement of modern war-material must be continuous if it is to keep up with incessant technical progress. The obtaining and maintenance of stocks, even in reduced limits, exceed the economic and financial capacities of most countries. This crisis may become even graver in future. Thus it is possible that for all these reasons and others which we will not enumerate, with the development of the technique of warfare, the reverting to armies of limited numbers, but of a high value, may well become a necessity.

However, the exaggerated faith of some people in the value of technology and an inconsiderate scorn for the value of numbers might give doubtful results. The *condition sine qua non* in the application of the principle of a professional army is its absolute universality. Should a small professional army, not supported by a national army, encounter in war a much larger organized army, it might radically fail.

There are many defects in this conception. A reduced army, even very well-equipped, is forced to seek an initial success by a lightning offensive; it is incapable of occupy-

ing the enemy's territory; it presents many weaknesses from the point of view of operations in general.

The motorized and mechanized units are subject to the wear and tear of combat in a geometric proportion to the period of their being in use. Their efficiency diminishes as the battle is prolonged and the action extended. Their vulnerability on the flanks and at the rear increases in proportion to the length of the columns of services following them. Facing more numerous forces, even if not so well equipped from the point of view of material, they will find themselves at a disadvantage, should the masses opposed to these picked armies put into the first-line elements other than mere "cannon-fodder."

This eventuality makes very controversial, in the present state of affairs, the experiment, so appealing at first sight, of reduced professional armies, which would certainly be equal to their tasks in a total war. The idea of organizing, together with professional armies, trained and fanatical masses, will impose itself fatally on bellicose and conquering races, desirous of totally annihilating their adversary.

It is characteristic, in particular, that General von Seeckt was the initiator of a project which consisted in completing the professional army based on long-term voluntary service by a national army with a compulsory service of a few months.

According to this conception, the professional army would be ready to engage in battle very quickly, without previous mobilization. Destined for active operations, not, as a rule, taking charge of the covering operations, it is equipped with all the means of transport assuring mobility and speed; it comprises units of all arms and all

services, and is self-sufficient during the first few weeks of war. Supplied from the professional army, selected ranks are entrusted with the instruction of young soldiers recruited for compulsory service and already licked into shape by the military preparation of youth; this would be the nucleus of a second army, or national army, of less value than the professional army, but having inexhaustible reserves. While the professional army would seek to obtain a decision by an offensive, the national army would cover it, would assure the manning of the defensive sectors and the secondary missions, until the time when the equalization of the training would permit amalgamation.

Apart from the exorbitant war budgets which it entails, this system, which is tantamount to throwing in at one stroke all the trumps one holds, was subject to rather serious criticism, from the purely technical side, by General Debeney.[9] The employment in mass of professional soldiers in combatant picked units necessarily limits their number in the reserve units and the defence formations, to the detriment of the solidity of the latter.[10]

On the other hand the duality between the corps of officers and N.C.O.s of each of these armies would present serious inconveniences.

Lastly, in the event of a prolonged war, the incorporation of new reserves in the professional army would, temporarily at least, lessen its value. In a word, the professional army would run the danger of losing qualities which the badly officered national army would be incapable of acquiring in a short time.

Thus the system advocated by General von Seeckt, because it consists in juxtaposing two radically different

values to the detriment of both, does not seem to be practical; besides, it is powerless to reconcile the quality of the army, i.e. its selection, with its extension, inevitable in modern warfare.

Thus we shall have to reject this duality, as we have already rejected the conception of a picked army of reduced effectives, as an exclusive element of the country's defence.

5. THE MILITIA ARMY

Advocated by advanced democrats of various countries, the militia seems for them to present advantages of the first importance from the political, social, and economic point of view. Under this name we must understand a non-permanent troop of citizen-soldiers, serving a very short time with an almost total exclusion of all professional elements. As to its purpose, all the theorists, from Engels to Lenin, have thought that it might have a defensive mission, but should not be incapable of undertaking an offensive. It is this path that was taken initially by the Soviet Government which, by the decree of April 22nd, 1918, made the military preparation of the workers' masses compulsory.

Some experience, however, showed the Soviets that the system of militias could not be recognized as giving adequate security. It was reduced consequently to the role of a complement of a powerful standing army or army of cadres. Because of the impossibility of incorporating more than 270,000 soldiers out of the 900,000 of the annual conscription, and not wanting to reduce military service to less than a year, the Soviet Government finally adopted a mixed system, defined in the law of September 18th,

1925. Apart from the active army or army of cadres numbering 560,000 men, the territorial army or militia entails an active service lasting one year for the infantry and artillery, and nine months for the cavalry and special formations.

The military preparation of young men for the territorial army, before they are conscripted, lasts two years and comprises 280 hours of compulsory work. The military obligations of citizens assigned to the territorial army are extended over a period of five years. On the whole, the territorial army, by reason of the duration of the active service, can no longer be considered as a militia army proper.

A classical example of an army of militias is, on the other hand, the Swiss Army. Analogous to the *levée en masse* practised in olden times in Poland, the defence of the State is to be assured there by the calling up to the colours of all citizens. The compulsory military service lasts four months. Besides 150 officers and 100 professional N.C.O.s, there is no other active permanent personnel and in consequence no standing army. The general direction of the training of conscripts is assumed by this body of professional officers and N.C.O.s, but the command rests with the reserve or militia officers. A privileged geographical and political situation no doubt facilitated in Switzerland the adoption of this military system reduced to the minimum. If, on the other hand, we consider the value of the Swiss soldier, we shall not be surprised that Imperial Germany, apart from political and economic advantages which she could draw from the neutrality of this country, hesitated to attack that country during the 1914–1918 war.[11]

But what will be the value of such an organization in case of war? The report presented on this subject, after the War, to the Federal Council by General Wille, the general in command of the Swiss Army, is quite categorical in this respect. Practically no ties between the command and the troops; an inadequate training of the militia officers who, beside an exaggerated feeling of independence, do not possess either the spirit of initiative indispensable in combat, or a clear consciousness of their individual value. There are important gaps with regard to the cadres. Theoretically trained, the reserve officers have no experience of command; the system of instruction at colleges does not allow them to acquire it; and the units under their orders do not feel themselves to be commanded by resolute and determined chiefs.

These observations apply to any organization of a similar type.

In modern warfare, troops trained and commanded according to this method would oppose to the enemy but an incoherent mass, unsuited for mobile warfare. Armies organized and trained more solidly and equipped with modern armaments would have no difficulty in dispersing them.

Before the war of 1914–1918, as is acknowledged by the most ardent partisans of regular armies, among them Jaurès, the militia could constitute, apart from the special case of neutral Switzerland, only a programme for the future. Since then its relative value has decreased even more. The reason for this is obvious. A country which based its national defence on a militia, would, in case of war, present an easy prey for the first aggressor who came

along; its troops would be incapable of resisting a precipitate attack and would be unable, because of their lack of training, to use modern material.

Even more than the system of professional armies with reduced effectives, separated from the rest of the nation, the system of militias would assure a certain amount of security only on condition that it could be honestly and simultaneously applied in all the countries as a result of a universal agreement. But, even in that case, the nations where militarism is inborn, those of which the youth is naturally bellicose, would benefit by a crushing superiority over the nations with a peaceful character and traditions. And, lastly, at the outbreak of a war the necessity of improvising an armed force would be all to the advantage of countries spread over a vast area, powerful and provided with a high military potential.

6. THE CONSCRIPT STANDING ARMY

To ward off at present the possibilities of aggression and of war in general, the national defence could be assured only by a permanent standing army, capable of incorporating the mass of citizens in the event of mobilization.

The fundamental element of national defence should consist of professional ranks, solid and equal to their tasks, their numbers increased by contingents of recruits called up every year to the colours on the legal basis of compulsory military service.

Strongly criticised to-day, compulsory military service has its origins in the French Revolution, for the mass levy of the citizens was decreed by the Convention on August

23rd, 1793. Codified by the Directory (Law of September 5th, 1798), conscription became a rule and finally came to stay under Napoleon I.

The defeats inflicted on Prussia by Napoleon gave Scharnhorst not only the idea of an organization based on universal compulsory service, but also on the employment of reserves. For professional military formations were substituted the so-called national armies, i.e. armies embodying the totality of the citizens. This innovation which transformed the character of wars in the nineteenth century considerably, also played an important part in the development of various institutions in the countries which adopted it. The duty imparted to all the citizens of actively participating in the defence of the Fatherland, the only natural and differentiated grouping in which an individual can find the value of his personal and social accomplishments, contributes to the democratization and unification of the Western countries.

Independently of the maintenance of a standing army, indispensable for reasons of security, the advantage of compulsory conscription is to prepare numerous and adequately trained reserves. The permanent standing armies represent nowadays from 1-100 to 1-50 part of the population of each country.

In time of war the men liable for conscription represent about one-eighth of the population, which reduces the proportion of the standing army as compared with the reserves from one to five, in the total number of those called up.

It results from this that after a general mobilization the army would be inappropriate to its mission if the reserves were not adequately trained. The training of reservists is

thus one of the essential aims of the modern military organization. This requires time. In order to fix the duration of the active service, we cannot, of course, take as a norm the standards of the last war, when it was necessary to anticipate the normal dates of incorporation and often to employ, as soon as possible, the classes called up. However, trained at first in the rear, then hardened in the calmer sectors of the front, the conscripts, officered by seasoned soldiers, were gradually inured to the soldier's profession. The premature use of young classes, especially in mobile war and in offensive—as risked by Falkenhayn in October, 1914, in Flanders, where the flower of the German youth was slaughtered—is an irreparable error.

On the other hand, the training which is to be given to a soldier in a modern army should be decidedly inspired, as we have already said, by the general principles of mobile warfare. Qualified for the offensive, the troops will be qualified *a fortiori* for defence, the opposite not being true. Now, mobile warfare, much more difficult than the war of positions, demands from the trooper a training of which the normal duration was estimated, before 1914, at two years at least, and generally three years. The problem at that time was less arduous than it is now. The armament of an infantryman was mostly represented by a rifle and bayonet; machine-guns were rare; tanks did not exist. Aviation was in its infancy, so that there was no question of training the infantry, the artillery or the cavalry with a view to their co-operation with the air force. The problems of liaison between different arms were summarily treated. The protection against aircraft and gas had to be improvised in the course of hostilities. Since then the subjects which the soldiers have to learn have multiplied.

Now the creation of instinctive reactions, which is the foundation of military education, becomes the more difficult as the contingencies to be foreseen grow more numerous.

It would, however, be very difficult at present, in most countries, to introduce compulsory military service of a duration equal to that of 1914 or even limited to two years; in any case, it could not be kept up for long. The national defence has thus to take this factor into account whether it wants to or not and to adapt itself to the necessity of applying service of a minimum duration, but established once and for all. The peace-time army would be exposed, on the contrary, to perpetual fluctuations and to changes harmful to the continuity and smoothness of its efforts.

This preventive policy would in future help to avoid the fatal consequences which the periodical shortening of active military service would entail were it not preceded by preliminary measures which seem necessary.

This shortening of military service seems inevitable for political, economic, financial, and social reasons. To palliate the grave inconveniences which attend it, it is necessary, first of all, that the active army should be provided with an *élite* of professional officers who should be the stronger and the better prepared for an arduous task as the duration of the compulsory service would be reduced and as, in consequence, the training of the conscripts would demand more intensive and more methodical efforts.

The programmes concerning the instruction of recruits will have, however, to undergo a radical and objective transformation. In particular there can be no question of

a general instruction which would necessarily lead to giving the young soldier only superficial and dangerously inadequate notions with regard to the heavy duties which modern warfare implies. One will have to be content to give him a profound knowledge of his weapon, which he will have to know perfectly well, and to give him some notions of other arms only to the extent in which they are indispensable for him to be able to perform his task adequately.

The training of professional ranks will be quite different. The curriculum of the Reichswehr, which makes obligatory for each of its members the theoretical and practical knowledge of all the arms, can serve as a model in this respect; the senior officers, in particular, have to pass a preparatory training allowing them in case of necessity to take over the command of a detachment of any arm. The modern army has, besides that, a certain number of specialists, whose complete instruction cannot be finished in a short time. They will be trained according to the same methods as the professional soldiers. Their recruitment in large numbers by voluntary enlistment for long terms of service, especially to the tanks and to the air force, may be quite easily assured at the price of certain financial advantages.

The time spent in service by the conscript will have to be dedicated entirely to his training as a combatant.[12] All the services and all the various tasks deviating from this object will be suppressed. The instruction will be simplified and facilitated by the use of all scientific means and methods.

Another essential condition for the reduction of active service is the preliminary preparation of young men.

7. MILITARY PREPARATION, CONSCRIPTION, AND THE RESERVES OF THE STANDING ARMY

The organization of young men, such as the "Balilla" or, in a certain measure, but in quite a different spirit, the associations of the Boy Scouts, constitute from the physical and moral point of view an excellent preparation of the conscript for his duties as soldier. They may render most valuable services in all the countries where the time spent under the colours has been reduced to a strict minimum.

If adapted to the traditions and customs of a country, they develop in the young people a sense of solidarity, discipline, and spirit of sacrifice. It is imperative, however, to organize, apart from these associations, the military preparation *sensu stricto*. In Switzerland this military preparation of youth has been for years a national tradition. In France it has until now come up against certain difficulties. The Government has taken in hand the preparatory instruction of pupils of the State schools, but its efforts are concentrated on the recruitment and instruction of ranks of reserves. In Germany, the instinct of collective discipline and the love of sports constitute an excellent ground for official initiative of this kind. The compulsory military preparations finally have an important place in the national life of Soviet Russia, Italy, and Japan. Whatever the ideals of these States, it is beyond doubt that this preliminary training of young men cannot remain without effect on their character and their general attitude towards life, and consequently, on the general aspect of international relations in the future.

One of the great advantages of military preparation

would be to suppress the watertight division between the military and civilian spirit which too often gives reason to be regretted in countries with compulsory conscription. By the obligatory military preparation, the call-up would become a natural culmination of an obligation with which the conscript would have become familiar a long time before. It is suitable, to this end, that the military preparation should be performed under the direction of professional instructors and that it should form an integral part of a general organization of national defence, in the same way as the laws for recruitment and forming of cadres.

And so the military preparation would consequently consist, apart from a general programme, of particular and more detailed studies, intended for the training of specialists and N.C.O.s. It would thus avoid the imparting of a superficial instruction which would be a dangerous lure, but at the same time it would be careful not to instil into the young men notions of militarism, jingoism or party spirit.

When called up to the colours, the conscript would be trained, as a rule, in the unit to which he would be later assigned as reservist. It is more or less the only means of giving the mobilized units a sufficient cohesion at once and thus enabling them to triumph over the hard experiences of modern warfare. For that reason, and because of the necessity of maintaining the effectives of the tactical units at a satisfactory level which would allow the instruction to proceed to the training of commanders of units, it would be best to reject the plan of special schools, of training-camps, and of units of two distinct categories: initial and advanced. In the same way, it is indispensable

not to separate the mobilization of the army from its training, for this would lead to the maintenance of two connected military organizations, one tactical, the other territorial, which would increase tenfold the official machinery, while reducing the value of the combatant units.

The reduction of the duration of active service entails, moreover, the necessity for the reservist to complete his instruction by means of periodical courses. It would, of course, be ideal if he could accomplish these courses in a camp, in his unit of mobilization. This is not always practicable not only because of the cost of transport, but also because of the civilian occupations of the reservists, of the ageing of classes and of the constant movement of the population. Thus one has to consider the fact that the reserve units in future will not have a perfect cohesion at the moment of their mobilization and that they will not be suitable, at the beginning, to be used for difficult operations.

Let us not forget, on the other hand, that there will be an increasing need of professionals with superior competence and of specialists. It was true once that the gulf was not very great between the degree of instruction of the reservists and that of the professional soldiers. This is no longer true at present. Just as industry needs picked professionals, so modern warfare, making use both in the offensive and in the defensive of a complicated machinery, cannot do without them.

Numerical superiority will undoubtedly always constitute one of the factors of victory. The principle of economy of strength applied in a masterly fashion by Napoleon and later on thus formulated by Clausewitz: "To concentrate at the chosen moment and at the chosen

point the greatest possible number of forces," will remain one of the fundamental rules of the art of warfare. But it has been specialized and amplified since then. It is not only the effectives but the quality of the army which decides the victory. We have to comment on the old aphorism: "Victory comes to the big battalions," and add to it, "with the best components," which corresponds more exactly to the needs of our time. For the main effort the best units will be chosen; we shall put at their disposal supplementary material from various branches of the general reserve (artillery, air force, tanks, etc.) which will reinforce their power without considerably increasing their effectives.

Most countries create to-day too numerous contingents of recruits for it to be possible, from the financial point of view, to instruct them all to the same degree of efficiency. A part of them, after having passed a simple military preparation, will remain at the disposal of the State for a mass-levy, for secondary tasks or in the capacity of militarized workers at home.

8. MOTORIZATION AND MECHANIZATION OF THE ARMY

It is beyond doubt that the use of very varied and powerful material will constitute one of the characteristics of modern warfare and will make it different from all past wars, not excluding the last world conflict.

The war of 1914–1918 was already remarkable owing to the considerable number of effectives of the modern armies and the quantity of technical material which they used. The relationship of these two underwent a very marked evolution in the years 1914–1918. The infantry divisions had several times to lessen the number of men

armed exclusively with rifles and increase almost twenty times the number of automatic arms. The effectives of an infantry division dropped by about a third, which permitted the formation of new infantry divisions of young men, while the older men reinforced the services of the rear. However, in 1918, the human factor still dominated on the battlefield. Since then, the material has continued to grow in quantity and in power; this evolution is an important fact which must be seriously taken into account.

There cannot be any question, however, of sacrificing men to material, or of substituting the struggle of machines for the combat of human forces. An excess of modernism would lead straight to absurdity. Between the two extremes we must find an intermediate solution which will correspond to the needs of the moment.

The attitude of different nations to this problem varies considerably.

It is logical that the countries where industry is highly developed should insist on mechanized warfare. The Germans, however, stress the part and the importance of men in warfare (General von Taysen, Major Soldau); they affirm that "German culture opposes the striking power (*Gewaltstoss*) of the German to French tactics, based on the systematic use of war-material."

This reasoning was at the time the consequence of the military clauses of the Treaty of Versailles. The German army badly lacked material not so long ago. To prevent this lack from having a discouraging effect on the combatants, the German Command systematically extolled the superiority of the forces of German morale. It is undoubted, however, that German military technicians fully

appreciated the role of technical equipment in modern warfare and at the opportune moment started accelerating its production to the maximum.

In the British experimental camps serious studies are being made as to the total mechanization of the modern army. According to the conceptions of the young British school of thought, which are only partially approved by the official authorities, all the infantry will be motorized and mechanized in future, while the cavalry will be totally replaced by light and rapid tanks with a wide range of action.[13]

The possibilities of the motorization of an army are closely connected with the development and the industrial potential of a country. This applies not only to the creation of motorized detachments in peace-time, but to their maintenance in war-time. Even in peace-time, by reason of the constant progress of the motor-car industry, the maintenance of motorized means of locomotion requires a great financial effort and a permanent collaboration of the army with the constructors.

This is why strongly industrialized countries, such as the United States, Great Britain, and Germany enjoy great possibilities in the field of military mechanization and motorization.[14] Industrialization would play an even more important part in war. It would be impossible to maintain in action the motorized units and to renew their destroyed or quickly deteriorating material without maintaining a certain permanent relation between the degree of motorization of the army and the output of the national factories.

It is quite obvious that the problem is also determined by the quantities of petrol available. The countries which,

like the Reich, have no oil-wells, try to solve the difficulty by producing substitute synthetic carburants. Quite interesting results have already been obtained, especially in by-products of coal-tar and alcohol.

In spite of these purely technical difficulties and of the enormous costs which they entail, it is probable that the motorization and mechanization of the modern army will increase with growing strength.

In fact, the fire power will be constantly on the increase. It will not be manifest to its full extent at the beginning of the war, for the means of action at the disposal of the warring armies will be limited enough, at first. This situation will undergo a radical modification after the launching of war-industries in full swing; then the number, the variety and the power of the technical means of combat will be considerably multiplied. The only counterpart of this evolution should be the introduction of armour, that is the mechanization of the army, and this especially as, thanks to it, the offensive capacity of the units will be increased at the same time.

The principal advantage and innovation, as far as motorization and mechanization are concerned, is to increase the strategical and tactical mobility of the units. The motorized units, capable of rapidly covering great distances and moving on all terrains, contribute to the flexibility of manœuvre, which on the battlefield will take advantage of the power and the speed due to mechanization.

9. TANKS

The extraordinary development of fire power and of war fortifications after the beginning of the 1914–1918

war destroyed almost entirely the balance which should have always existed between the offensive and the defensive capacities of the troops. The use of automatic arms, with which the trenches were amply supplied on the whole length of the front, assured to the units in defensive position an immense superiority over their assailants. It became almost impossible to make progress on open ground and to approach the adequately defended enemy positions. The advance under enemy fire, even over short distances, entailed such losses that they paralysed the attack before the assault was made. To remedy it, recourse was made to methodical preparation by artillery fire, which destroyed many obstacles and a certain number of fire elements, but warned the enemy as to the imminence of an attack and allowed him to throw his reserves into the endangered sector; it excluded the element of surprise so necessary for success. Direct fire was multiplied without solving the problem of immediate support.

With the prolongation of the war the need was felt more and more strongly of a means of support whose freedom of movement would not be hampered by trenches, communication trenches, block-houses, barbed-wire entanglements, and machine-gun nests.

The caterpillar tank, capable of movement on every terrain thanks to its armour and its armament, allowed the infantry to carry out efficiently offensives against armed positions of machine-guns, trench-guns, and all quick-firing arms.

Tanks were one of the revelations of the last World War; they form, together with flying and gas, one of the characteristics of the beginning of the twentieth century.

Introduced on the battlefield by the French on the Aisne on April 16th, 1916, and in a different model by the British at Cambrai in November, 1917, they facilitated the regaining of mobility but were still too scarce and too imperfect. They remained tied up to the infantry as immediate support artillery, and could only advance slowly.

Towards the end of the War, the tanks, more numerous and much improved, permitted the breaking of the stabilized fronts with less expenditure of strength and much smaller losses. They offered the possibility of shortening or even of suppressing the artillery preparation, and hence the renewal of surprise attacks. But, on the other hand, they could not quicken the rhythm of the offensive, deepen successes or assure their exploitation.

The first, British and French tanks were of medium type. They were the cause of many discomfitures and suffered heavy losses in action. Very rapidly, however, after the initial experiences, people began to study the problem of their adaptation to the conditions in which they were to operate. In 1918, two new models of tanks came into use. The first, British made, of a heavy type, was capable of overcoming important obstacles; it had a multiple armament, but cost a great deal and consequently could not be produced in great numbers. The second, French, of a light type, less powerful but less costly, had the advantage of being produced in larger numbers. Their mission consisted in opening the way for and giving support to the artillery; their tactics were more or less the same. During the war, these two types of tanks never operated together in two successive waves for the benefit of the same infantry.

The German army, deprived of tanks, looked for means

of defence against enemy tanks. The Germans tried out several methods. After having made sure that the barrage fire of the artillery did not give satisfactory results, they put in the first line 77 mm. guns or "*Minenwerfer*," firing point-blank. They also used a rifle, of a rampart type, of 13 mm., with perforating shells, a heavy machine-gun,[15] grenades, blocking of the approaches by means of concrete walls, inundation when the ground was suitable for it, very deep and very wide trenches, either camouflaged or not, and, lastly, minefields with automatic fuses. After that the tanks had to be protected during attack by artillery and the air force whose mission was to reconnoitre the ground and to assure the liaison between the artillery and the tanks.

Since the 1914–1918 war important technical improvements have been brought into the construction of tanks. There have been envisaged, in principle, three types forming a scale: light tanks, rapid, supple, and manœuvrable, armed with machine-guns and playing more or less the same part as the mounted artillery of medium weight; heavy tanks, better armed and better armoured, destined for medium battle conditions; and, lastly, the break-through or battle tanks, very heavy, very powerful, strongly armoured and equipped with cannon.

The tank is in the first place an offensive arm which can nevertheless be applied to defence by counter-attack. It may well be that in future it will acquire a greater independence and partly supplant the infantry; it can already largely relieve the infantry of its heaviest duties. Without, however, under-rating its part, it is worth remembering that certain terrains still remain unfavourable for tanks. Densely built-up areas, forests, mountains, and

marshes (such as the Eastern Marshes in Poland) are almost inaccessible to tanks. Darkness and fog make their use very difficult. It is true that their co-operation with the other arms (the infantry, the air force, the engineers, the artillery) is becoming closer thanks to the use of wireless, which increasingly facilitates the action of the tanks; but, without any notable success as yet, attempts are being made to make the tank an autonomous arm.

Until now, the tank has been on the battlefield the auxiliary of the infantry, it has constituted in some sort its hub, its centre of strength. The heavy tanks were called for to open the way for waves of assault by destroying certain obstacles; the light tanks—to supplement the supporting artillery. The ambition of the tank now is to achieve successes by its own means. This is a tendency which should be considered with caution, while we must recognize that modern tanks can already operate all by themselves, at great distances from the infantry and without being tied to it. But on the whole tanks are destined in principle to collaborate in combat with the other arms.[16]

The building of new tanks with double mechanical traction (wheels and tracks) or with improved tracks (much more numerous plates according to the British system, giving a speed of 40 miles per hour on roads) has considerably increased their mobility and their speed, and consequently their value from the strategical and tactical point of view. On the other hand, the new tactical conceptions, according to Fuller, Chedeville, Estienne, and Swinton, foresee the simultaneous engagement of light, medium, and very heavy tanks—hence the considerable increase of their efficiency on the battlefield.

In future, the rapid tanks analogous to the medium calibre artillery might, in certain cases, be brought to cooperate with the cavalry for reconnaissance and rapidly performed offensive actions. As a typical offensive arm and to a lesser degree as a defensive arm, the tank will come into action together with the infantry. It will also form a part of mixed detachments, composed of light tanks and medium calibre artillery, of motorized infantry units and of batteries suited for every kind of ground. These units will be used at the flanks and the rear of enemy armies and in pursuit, where they will follow the example of the old cavalry operations.

In spite of the progress made, the tanks will not totally replace cavalry in the near future. Studies are, however, in progress on the question of the combat of tank against tank, a fight where the very heavy tanks would play the part of the dreadnaught on the sea. Besides, the future possibilities of tanks are so vast that we might say that the tank may, perhaps, become the principal weapon of tomorrow.

10. MODERN INFANTRY

The infantry has undergone, in the course of centuries, essential changes and a profound evolution. It was all-powerful in antiquity, at the time when cavalry did not play any important part and when artillery did not exist at all. In the Middle Ages, the flourishing of chivalry reduced it almost to insignificance. The Hundred Years' War brought about its rebirth, with the introduction of archers; it regained its importance when the gun sounded the decline of chivalry (the Renaissance). Thanks to the use of the plain muzzle-loaded rifle—at the time of Louis

XIV, then of Napoleon—the infantry at last equalled the cavalry. At the time of the quick-firing rifle and slow-firing cannon it attained its acme.

At the beginning of the Great War the infantry was equipped almost exclusively with rifles and bayonets. It already had one machine-gun for every 500 men, but it did not appreciate as yet the capital role of automatic arms; it assigned to them the episodic role of supplementary fire, putting its foremost trust in rifles and in frequent use of the bayonet. These errors proved to be costly in the very first combats; the losses of the infantry were enormous and the wear and tear rapid, compared with the unsatisfactory results.

In the course of war, the infantry tried to amplify its equipment and renew its methods in order to regain its lost power. It multiplied its heavy and light automatic arms; it started using guns of very small calibre, mine-throwers, hand- and rifle-grenades. Thus armed it acquired a very great capacity of resistance, mostly in an organized terrain, but it recovered only in a small degree its lost offensive capacity.

In consequence, the infantry had to have recourse to outside help. At first it had the support of the artillery, whose importance became such that it could be said without great exaggeration up to the end of 1917: "The artillery conquers, the infantry occupies." In 1918, the mass introduction of tanks upset the order of factors. The infantry once more became redoubtable in attack as well as in defence, whenever it benefited from an adequate support of artillery and tanks.

Since the end of war, all the efforts of the infantry have tended to increase its own means, in order to become self-

sufficient in case of necessity, without having to have recourse to outside help, always uncertain. To this effect, it absorbs a quantity of ever more considerable and varied material: means of communication and of transport, ever more numerous mortars, anti-tank guns, anti-aircraft defence machines. It becomes gradually motorized and mechanized.

What will be the outcome of this evolution? No one can fix its scope *a priori*. It seems that the infantry will increase more and more its possibilities of action, its suppleness of manœuvre, its power of fire, its capacity of movement. Transported for longer distances, it would reserve marching on foot for short distances, for movement across fields and into battle. Capable of every task, on every terrain, it would become the universal arm, most frequently used. Increasing the proportion of its material in relation to its effectives, it would cease to be what it had become during the 1914–1918 war, a discarded arm, dedicated to work, fatigue and danger, and would occupy its proper place among the scientific arms of the modern era.

It seems, however, that there is need to impose certain limits on this development. The infantry cannot run the risk of losing its essential qualities of suppleness and mobility, and cannot, therefore, become either complicated or excessively heavy. It must remain, in the first place, capable of conquering and holding ground; for this principal mission it needs sufficient numbers of men. It should not entirely replace its combatants on foot by a swarm of one-seater tanks, as daring reformers are wont to dream.

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zation and mechanization are limited in their application by the industrial and financial resources of each country. The rich countries have many factories; anxious in the first place to economize their staffs, they might think of pushing to the extreme the transformation of the infantry. The countries less fortunate from the material point of view, but benefiting by a strong birthrate, could preserve a type of infantry less expensive and easier to achieve, where the human element would be a more important factor.

Be this as it may, it should be impossible in future to see infantry covering hundreds of miles on foot or marching to the attack exposed to the fire of an invisible enemy. This would be a criminal and very costly waste of an inestimable force.

Modern warfare, even more than in the past, will demand of the infantryman individual qualities of endurance, both physical and moral, which can be obtained only by a solidly performed military training.

11. MODERN CAVALRY

The Middle Ages and the modern era up to the nineteenth century were the reign of the cavalry.

It is not without interest to note that in the sixteenth and seventeenth century the Polish cavalry was one of the best in the world.[17] The Pole knew how to make the best use of the value of this arm, namely, dash and the power of shock, while preserving suppleness and speed. These were the essential elements of the tactics applied by the hussars, the light Polish cavalry and the Cossacks. Whenever there was a question of breaking through the battle-front or of pursuit, the Poles invariably

employed the cavalry with the maximum vigour and speed.

Frederick II followed these tactics, adapting them successfully to the Prussian Army. Since that time, the attack of mounted troops in close ranks, with white arms and in gallop, became the rule in all the Western armies.

The proper value of the cavalry depended mostly on its qualities of morale, audacity, energy, initiative, and keenness. Napoleon's genius knew how to make use of these qualities and how to employ this arm to perfection tactically and strategically.

The nineteenth century is on the whole the time of the decline of cavalry. The War of Secession saw, it is true, a few distant expeditions similar to the charges of the Polish-Tartar wars, but the improvement of fire-arms (1866) had more or less put a stop to the possibility of mounted attacks. The war of 1870–1871, in spite of the charges at Reichshoffen and at Rezonville, famous in the chronicles of the cavalry, confirmed this. The Russo-Japanese War (1905), by reason of the inertia of the Russian cavalry and of the reduced effectives of the Japanese cavalry, did not bring any interesting examples of the modern use of this arm. The errors committed by the Russian Army were, however, so obvious, the lost opportunities so manifest, that they roused anew the hope of using the mounted cavalry in combat, provided that it was adequately prepared for its task and commanded by an experienced leader.

At the beginning of the 1914 war, the cavalry in no country did what was expected of it. The cavalry preserved the advantage of a greater mobility than the infantry; while the infantry covered about three miles per hour and fifteen to eighteen miles per day, the cavalry

could cover double and even, in certain exceptional cases, treble this distance. On the other hand, there was no possibility of mounted engagements, which was in accordance with the current doctrine, namely that the principal mission of the cavalry is reconnaissance. The participation of cavalry in combat became an exception; besides, the horses became tired very quickly. Badly prepared for combat on foot, the cavalry, on the other hand, had inadequate equipment for playing an important part in battle.[18]

In the course of the War, attempts were made to increase the power of the large cavalry units without diminishing their mobility. Most of all, their means of fire was increased by the addition of rifles (battalions of foot cavalry), of automatic arms and of batteries of artillery. The division of cuirassiers thus became a strategic reserve, easy to move and capable of being engaged on extended fronts; but it was still composed of an immense majority of mounted men and of horse-driven vehicles; its kit was so heavy that it only moved slowly; in a word, it reminded one very much of mounted infantry.

After the War, the cavalry gradually became motorized; it was armed with medium-calibre artillery and had motor-cycles. Thus it was again able to perform distant missions, such as are necessary for discovery and safety, without losing any of its power. The inconvenience of this reform was that the division now included elements of a very different character and range of action; this heterogenous whole was rather difficult to handle. And so one is not surprised that the partisans of motorization and total mechanization started clamouring for the complete suppression of horse-driven units.

This radical transformation does not seem to be very opportune. The horse squadron was still the arm best able to move on all terrains, to engage in regular combat, to investigate a covered zone and to practise a so-called delaying action. The cavalrymen thus still had to supply the majority in reconnaissance units of the divisions of infantry and of the army corps as the tactical basis of these groups; in many circumstances they remained indispensable for the cavalry division.

The mixed body is in other respects advantageous, from the point of view of budgetary expenses and mobilization, for horses are easy to requisition, while tracked motor vehicles, armoured and camouflaged, have to be specially constructed for the army. This consideration remains of interest for countries that are more agricultural than industrial, or have not sufficient financial means.

In large units of cavalry regiments, motorization according to the German model would be only used in the auxiliary services and technical detachments and would comprise a battalion of riflemen and of artillery. Failing an organization of this kind, it would be very difficult to co-ordinate the units composing a division and even more so to direct them during battle. The tanks, on the contrary, could usefully co-operate with the cavalry, every time it became necessary, in tactical reconnaissance and, *a fortiori*, in combat.

It thus seems certain that large units of cavalry will become entirely mechanized in the near future. They will, moreover, have such possibilities of speed (12 miles per hour), of range of action (60–125 miles a day) and of fire (means similar to those of an infantry division), that they will be able to engage the enemy alone, on a

large front, at a great distance and by surprise. Their use may very well cause a revolution in the conduct of operations.

Let us suppose, for example, that at the beginning of the 1914 war General Joffre had had at his disposal units of this kind.[19] During the concentration, the French Commander-in-Chief could have demanded of them a much deeper, much faster, and more efficient reconnaissance than that carried out by the cavalry corps commanded by Sordet. Then he would have pushed them to encounter the army of von Kluck to delay his outflanking movement on every uneven piece of ground. During the race to the sea in September and October, 1914, by the same means and thanks to his speed, he would have reached the German right wing and covered the landing of his army corps in the immediate proximity of the front to be occupied.

In battle itself, the large mechanized units would have considerable power, supported by the air force and tanks. In 1914 on the Marne [20] it would have been possible for them to break through and to exploit immediately the breach in the German front between the armies of Kluck and Bulow, and to draw off the Allied armies of French and Franchet d'Espérey. Analogous possibilities of action would have been found in much greater numbers on the Eastern front of Europe (the battle of Lodz, etc.). But these are only suppositions.

Be this as it may, it is probable that we shall see, in the mechanized cavalry division, one of the prototypes of the large light units of the future. The evolution in this sense will be rapid in some countries, less rapid in others;[21] but it seems quite certain. In the future as in

the past, however, the cavalry will perform its mission of combat only on condition that it is used *en masse*. Being an autonomous arm, it must remain at the disposal of the High Command.

Diversions undertaken on the flanks and in the rear of the enemy army in the course of the battle, pursuit and protection of the rear during the retreat—such will be the classic tasks of the cavalry operations. It is possible that the air force will in future replace the cavalry reconnaissance over great distances. The cavalry will then take on an auxiliary role.

12. MODERN ARTILLERY

For some time to come the artillery will use the war-material employed in the 1914–1918 war. From the traction point of view, the horse is still the least costly and provides the artillery with a sufficient tactical mobility. On the other hand, it is more than mediocre as far as strategical mobility is concerned. The motor-lorry and the tractor have exactly contrary qualities.

The most modern means of traction is the perfected caterpillar attaining a great speed on roads and offering remarkable facility of progress on all terrains. Rapidly travelling great distances from one region to another and instantly ready to go into action, artillery thus equipped could meet all the necessities of war much better than by any other means. Being very costly, this system can be introduced only gradually, starting with field-artillery and the units at the disposal of the commander-in-chief.

The motor-driven artillery, that is to say on motor-driven under-carriages, preferably armour-plated, would be most capable of closely accompanying the infantry,

of fighting the enemy tanks, and of changing its position very quickly in a warfare of rapid moves. At present it gives way to heavy tanks armed with cannon, but it is possible that it may become a sub-division of the artillery, without developing greatly because of its cost.

The supplying of artillery with munitions still constitutes a very heavy burden for the armies; it calls for much time and for powerful means of transport; it is impossible to put into working order more than one unit a day. The whole problem thus lies in saving as much ammunition as possible without diminishing the fire effect. As long as the artillery of only one division consumes hundreds of tons of munitions per day, the supplies of munitions will offer very great difficulties and will slow down the rhythm of the operations.

Recent discoveries seem to be able to remedy this inconvenience by improving the preparation and the execution of firing, which tend to increase the precision and the speed of intervention by an abrupt concentration and a rapid transfer of fire, as well as to bring the targets of the fire nearer to the first lines of infantry without danger to the latter.

The progress to be achieved in these matters is still considerable. We have, however, to-day, thanks to the progress of communications and to the co-operation of the air force, reached the possibility of conducting massive artillery action from great distances, which is particularly important in manœuvre warfare.

It would doubtless be more important still to achieve the speeding up of the firing of the guns, a condition imposed by the rapidity of action in modern battle and by the ever-growing intensity of combat. Owing to the

considerable development of flying which, in fact, extends the action of the artillery to hundreds of miles, the increase in the range of artillery-fire, outside the immediate zone of combat, will remain a secondary problem. It follows from this that modern warfare will doubtless put light and medium artillery in the foremost line. This is the type of artillery, including the 155-calibre, which all countries of the world are studying in particular.

Since the World War there have existed a great number of types of guns. In 1925 there even arose a plan of constructing a type of light howitzer, and a little later of an all-purpose gun (1929), for every aerial or ground objective. Lately the howitzer has seemed to prevail, as being more suitable for close combat, thanks to the curved trajectory of its fire, useful against an adversary who is under cover. On the other hand, the gun of the so-called universal type seems to be a product of fantasy. Variety in artillery types remains a necessity, for the manifold tasks demand manifold materials, even to-day.

The medium range of light artillery is from five to eight miles for the field-guns and seven miles for a howitzer of 150 mm. or 155 mm. calibre. The principal aim of the improvements is to increase the range and the power without harming the mobility. The problem is facilitated, as we have already said, by the use of motor-traction.

But the most characteristic trait of the evolution of artillery after the War is the multitude of types of guns supporting the infantry. We can count nowadays about twenty-five types. The artillery tries, on the other hand, to create special guns capable of fighting tanks, aeroplanes and machine-gun nests. These special tasks have led to the study of material with two tubes or with

removable tubes, but these are not very practical as yet.

It is interesting to note that the artillery would be in a position to use gas on a great scale, if this means of combat were to come into practice. One battery of 150 mm. alone can discharge a tonnage equivalent to that dropped by a whole squadron of aeroplanes, within the same period of time, but with a much greater precision of fire.[22]

Thanks to its fire power, to its speed and mobility, the artillery will remain one of the decisive factors of superiority both in warfare of manœuvres and in position warfare. Adequately armoured, it is the principal adversary of tanks and of all armoured arms. It is, lastly, the essential basis of anti-aircraft defence.

The artillery will remain pre-eminently an arm capable of projecting a maximum of explosives in a minimum of time. The creation of a supporting artillery on tracks, very mobile, not vulnerable, precise, and with a great discharge, would constitute for modern warfare one of the principal elements of manœuvre.

In the hands of the commander-in-chief, the general reserve of artillery will be the mass of steel which he will use at a chosen time and place in order to gain the victory.

13. CONCLUSIONS

As we have seen, among the principal arms of the past the infantry and the artillery have retained all their importance intact. The latter, thanks to the technical progress and to the sensible application of the caterpillar track, has already increased its role, and will increase it even more in future combats.

In strongly industrialized countries, the part of the

mounted cavalry, on the other hand, has been more or less reduced. In other countries, this arm, profoundly reorganized, has acquired different characteristics.

The complementary arm, the air force, has now become a principal and autonomous arm. An important part will fall to tanks and, maybe, to the chemical weapons. Technical material has made immense progress. Not less great will be the part in modern warfare of the organization of communications and of liaison,[23] which will assure the co-operation of the principal arms, and the combined action of tactical groups, necessarily composed of ever more varied elements.

Thus, the elements which help to increase the combative value of the modern army are in many points different from those which existed towards the end of the 1914–1918 war. To apply the methods corresponding to the conditions of the last World War to forecasts of a modern war, without taking into account the changes necessitated by technical progress, would be to succumb to a dangerous routine.

By reason of the dominant influence of technology on modern warfare—the superiority of numbers with regard to effectives continuing to play an important part—it will be impossible to equip a whole army with modern armaments simultaneously. It follows from this that the modern army should have tactical or shock units, composed of soldiers whose training should be faultless from the physical and moral point of view. These units, very mobile, will be particularly suited to violent operations where decision is needed.

The military system which we have outlined in these pages takes into account technical progress in its practical

applications. It frees the organization of the modern army from the anachronism of trench warfare. Similarly, it pushes aside more than one dogma of the past. In the presence of a continual evolution of war-material the present stage is evidently a transitory one. The structure of the army should be elastic enough to allow gradual evolution, parallel to that of technical progress which determines, to such an important degree, all military progress.

This system differs in a certain measure from all the former types of armies; it does not hesitate to point the way for the future, but in trying to be objective, practical, and realistic it avoids premature anticipations, such as the total mechanization of troops and the attribution of a decisive role to the air force as it exists to-day.

REFERENCES

1. Chapter III.
2. *See* Chapter VII.
3. In France, for instance, in twenty military regions those who have the task of carrying out covering operations have tactical units that are almost war-time effectives; the standing units in other regions are not so completely maintained. Besides these, there exists in home territory a mobile force, permanently ready for action and composed of North African and Colonial contingents.
4. *See* Chapter VII.
5. In Italy, especially, there were created in 1926 specialized militia battalions (Blackshirts). In 1928 Signor Mussolini thus defined the role of these units: "The militia will fight with its battalions incorporated into the great army units. I am certain

that these battalions will deserve this supreme honour by preparing themselves from now on to become shock-battalions whose task will be to perpetuate the martial traditions of 'arditismo' and 'squadrismo' with daggers in their teeth, bombs in their hands, and in their hearts—a supreme contempt for danger."

6. Napoleon commanded at Austerlitz 92,000 men; the Grand Army crossed the Niemen with 462,000 men; during the Battle of the Nations at Leipzig the effectives engaged attained the total of 772,000 men. Finally, in 1870, the Prussian army, at the price of great efforts, succeeded in mustering about 500,000 men.

7. He was compelled to do so, it is true, by the Treaty of Versailles, and tried to make the best of it.

8. In Great Britain, the most distinguished protagonist of the total mechanization of the army is General Fuller; the German army of specialists, supplemented by the territorial screening and occupying units, should constitute a model for the future for him.

General Fuller is seconded in his action by military writers so highly qualified as General Ironside and Captain Liddell-Hart.

9. General Debeney (*Revue des Deux-Mondes,* 1932).

10. The risks incurred by the Soviets, who adopted this system with a few modifications, might be relatively compensated by the advantages they find in the vast area of their territory.

11. The Germans were not unaware, on the other hand, that France was taking precautionary measures, especially in the direction of Belfort.

12. We should note, by the way, that to obtain the same results the militarist nations will need less time than the traditionally peaceful nations.

13. The British have always used a small army, mostly des-

tined for colonial expeditions. For two years now they seem to have realized that they went too far in 1931–32 in preaching total mechanization.

14. *Motorization* consists in replacing a certain number of horse-driven vehicles by motor-cars of popular types, hence partial or total motorization of the units. Enabling rapid movement of lorries or similar vehicles, particularly on roads, it increases in the first place strategical mobility. *Mechanization* consists in using combat vehicles, fitted for all kinds of terrain, armoured and armed; it chiefly gives tactical mobility, aptness for rapid manoeuvre, and offensive capacity. *Motorization* has as its aim transport, *mechanization* combat.

15. There exist to-day heavy machine-guns of large calibre (in America, the Browning 12.7 mm.; in England, the Vickers 12.7 mm.; in France, the Hotchkiss 13.2 mm.; in Italy, the Fiat 12 mm. and the Breda 14 mm., whose bullets, with great initial speed, can pierce the armour of tanks with medium thickness plating at less than 1,000 yards distance.

16. The operations undertaken in Syria and Morocco with the help of groups of tanks thrown very far in advance of the columns constitutes an exception to the rule. A medium tank of modern construction can only carry a load of petrol necessary for a distance of about sixty miles.

If a brigade comprising fifty tanks has to cover 120 miles it needs twenty supplementary tanks for the transport of petrol and oil. Attempts have been made to increase the range of action only in the medium artillery of the cavalry (Panhard model in Morocco, the range of action of which is 350 miles without refuelling). The perfecting of the tanks has, until now, been directed towards improving their capacity for overcoming obstacles, their armour and their armament. This weapon does not as yet possess all the qualities of an autonomous arm and cannot part with the arms with which it is fitted. Its fire-power is not very great as yet; the tanks of 15–20 tons can only fire

one machine-gun at a time; and so fifty tanks are, as far as fire output is concerned, the equivalent of fifty machine-guns or of three battalions of infantry.

17. The victory won by King John Sobieski in 1683 before Vienna is a memorable example of the part played by the cavalry at that time.

18. The actions of the cavalry corps on the Marne in September, 1914, and the raid of the German cavalry on Molodeczno in 1915.

19. As we are only making hypotheses, we will suppose, for the sake of argument, that the German army has been deprived of them.

20. *See* the preceding note.

21. The Italian cavalry comprises twelve mixed divisions, semi-motorized and each having a regiment of cyclists. Poland has forty mounted regiments, Germany (officially) eighteen regiments, the U.S.S.R. has the most numerous cavalry (ninety-eight regiments).

22. The rate of fire of a gun of 155 or 150 mm. is an average of 1.5 shots a minute, or 60 to 80 shots per hour, and this for several hours, or from about 400 to 600 shots a day. As a shell weighs about 80 pounds, this gives the total of 24 tons of munitions a day.

23. The technical means of communication would facilitate the command in modern warfare. Thus, during the 1914–1918 war, the tanks were directed by means of optical signals. This system, then rather mediocre, would now become even more so in view of the speed which the tanks attain. The radio has given this problem an entirely satisfactory solution. Every tank is now equipped with a receiver, and the tanks of the command with a transmitting set.

CHAPTER III

The Air Force and the Anti-Aircraft Defence

I. THE AIR FORCE

1. ITS MEANS AND ITS PART IN THE 1914–1918 WAR

THE use of aviation for military purposes in 1914–1918 was an innovation which caused a real revolution in the art of war; the possibilities of the new arm were, however, very modest at that time.

In 1914, the first not very powerful machines were used mostly for strategic exploitation within a very limited range of action. Then the reconnaissance plane appeared to supplement, and sometimes supplant, the cavalry for reconnaissance and liaison work.

The next stage came when the air force took part in combat with fighter and bomber planes.

The fighter aircraft, single-seaters at that time, were armed with a single machine-gun firing in the direction of flight and whose fire was only effective at a very short range (of from 75–150 feet in general). Lacking a wide range of action, rather slow, very vulnerable on the flanks and at the rear, it had to limit its action to the immediate protection of the lines, without going deeper into the enemy zone than a few miles. Difficult to handle, it was redoubtable only in the hands of very rare virtuosos, who

very often fell victims to the hazards of combat (Guynemer, Nungesser, Richthofen, Boelck, etc.).[1]

The bomber aircraft was also very imperfect, with a limited range of action (about 60 miles), and with a loading capacity generally reduced to a few bombs of medium calibre (20–100 pounds). Besides, its firing was very faulty and its effect more moral than material; powerless against objectives that were either of small area, scattered or protected, it aimed mostly at large agglomerations of unsheltered personnel. It was far from having the power or the precision of artillery fire.

Lastly, the efficiency of flight being closely connected with atmospheric conditions, long-distance raids constituted a hazardous operation. Statistics show that in the twenty-eight raids on Paris attempted by the Germans, 37 aircraft out of 485 attained their objectives; 13 others were destroyed by the French artillery, others by fighters and yet others fell victims to accidents.

2. THE AIR FORCE IN 1934

Since this primitive era, flying has made enormous progress. The aeroplane is at the same time more resistant, lighter, more manœuvrable and faster both in vertical and in horizontal flight (160–250 miles per hour). It can attain a much higher ceiling (mostly of from 25,000–30,000 feet) and its range has become considerably wider (1,250 miles round trip); it flies equally well by night as by day. It can transport considerable loads (from one to two tons).

Disposing of a much more powerful armament than in 1914–1918, equipped with wireless sets which keep it informed all the time and allow the squadrons to

manœuvre with precision, the fighter aircraft seems at present to justify the importance which it has recently acquired in modern armament thanks to the technical progress accomplished.

3. THE AIR FORCE OF THE FUTURE AND ITS CO-OPERATION WITH THE ARMY AND NAVY

Being both an offensive and a defensive arm, capable of performing the most varied tasks, such as bombing, liaison, transports, reconnaissance, etc., the air force would be entrusted in particular with gaining the mastery of the air and with bombing all the important objectives on the ground.

The air offensive can be undertaken either against armies or against the rear of the enemy armies. It may be directed: at the front against troops, at the rear against strategical communication lines, the establishments of the various services, dumps of supplies, railway stations, dumps of material, camps and quarters, air-fields, etc. The objectives that can be bombed are thus very numerous; the services of the rear, by reason of the accumulation of war-material, present particularly numerous sensitive points, very visible, very vulnerable themselves and between which the flow of traffic is incessant.

The bomber aircraft, still lacking precision and seeking to create a destructive effect, operate by mass, by groups, regiments or brigades, especially against vital objectives. Great attempts have been made to remedy this drawback with the help of perfected sights and by specially trained excellent marksmen. A current procedure to-day is to make the aircraft "dive" at full speed, almost vertically, towards the objective, drop the bomb at 600 feet from

the ground and climb again at once.[2] It seems, however, that the best solution would lie in studying a type of aircraft capable of great differentiation in speed, in such a manner as to allow the crew to fly above their objectives and to drop the projectiles as if they were thrown by hand.

The range of activity of the air force will thus include numerous large-scale actions destined to clear the way for the army and the navy[3] rather than to obtain a final decision by themselves. They would be destined, especially, to hinder the concentration and the re-grouping of enemy armies, or even to prevent their transport at a time and a chosen place, that is to say, to upset their plan of operations at the decisive moment.

The military air force is, on the other hand, called upon to play an important part in the covering operations, on condition that it is capable of developing an intense activity from the very first days of the war. In every instance of disquieting political tension, it would carefully guard the frontiers and all the zones situated beyond the covering front, without flying over the territory of the adversary.

Immediately on the declaration of war, squadrons of reconnaissance planes will fly over the enemy territory in depth (120 miles and more) in order to observe the direction and the importance of movements of transport and of moves of the troops and to determine the regions of enemy concentration. Flying over the rear of the enemy, these squadrons will make a thorough reconnaissance.

However strong the defence, these reconnaissance flights would be the more useful as the movements of

troops and of transport would be affected by day and night, by rail and road, by reason of the extreme urgency of concentration.

Thus it is particularly important that the covering force should have, from the very start, a reconnaissance air force sufficiently strong and numerous to effect all sorts of reconnaissance flights, even the most distant. The latter would require the use of aircraft with a wide range of action, equipped with powerful engines, capable of attaining a very high ceiling and having adequate instruments of navigation.

The tasks of reconnaissance nearer to the front could be effected by squadrons of aircraft of medium power, at the orders of the commanders of the great screening units.

Distant reconnaissance would be entrusted to squadrons whose activity would be controlled by the High Command.

Simultaneously, squadrons of bombers with great range and great carrying capacity, powerfully armed and attached to the army of the air, would attack *en masse* the enemy supply concentrations and his columns of motor-transports, sow disaster in the centres of war industry and bomb strategical junctions hundreds of miles distant from the frontier.

The fighter aircraft would screen the concentrations against reconnaissance and bombing raids on the enemy air force. They would be able to contribute to the air protection of the country, by order of the government.

The constant progress of this arm (two-seaters and large fighting machines) will doubtless allow it in future to escort the reconnaissance and the bombardment of

enemy lines, which was a difficult task for the single-seater fighter of the last war.

In any case, fighter aircraft are capable even now of covering the movements and the transport of covering units successfully, protecting them against the enemy air force and assuming an active part in the defence of the vital points of the country.

In its fight against living objectives, the methods of which have been considerably improved since the 1914–1918 war, the air force will try to disperse enemy concentrations, to isolate from the battlefield the bulk of the reserves, to check the enemy progress, and to facilitate the attack. The fighter air force in a modern warfare should thus be capable of undertaking direct and repeated attacks against armed organized forces, with the help of low-flying machines, which are being particularly studied nowadays in the U.S.S.R.

The intervention of air squadrons on the battlefield was already frequent in 1918; but it produced a more moral than material effect. Their mode of action has not been changed to-day: this will always remain, in principle, bombing with gas- or smoke-bombs and, as an exception for the present, machine-gun attacks. This action, as a general rule, will be performed in daylight, by aeroplanes flying in formation, at an altitude low enough for them to be able to see and fire on objectives as limited, mobile and poorly visible as are detachments in the course of operations.

In consequence, the following measures seem to be imperative in operations against troops on land:

(*a*) The flight of bombing squadrons, *in formation*, to

enable them to defend themselves from all sides by machine-gun fire;[4]

(*b*) the use of aircraft, generally *extremely mobile* and less loaded than the great transport planes, which are heavy and slow;

(*c*) bombing with medium-calibre bombs, so that every plane may take a great quantity of them (with the exception of anti-tank bombs and bombs against material objectives in general).

When the following measures have been taken, air operations will have as their principal objective for the armies:

(*a*) in the offensive, to prepare, start, cover and support the attack of tanks and of motorized units;

(*b*) in the defensive, to slow down and even to paralyse (with help of heavy-calibre bombs) at their starting positions the attacks of tanks and of motorized units;

(*c*) to prolong and generally to amplify the action of long-range heavy artillery.

It is the last task which the circumstances will probably impose. But it runs the risk of exacting a heavy price, if the forces of the adversary are capable of assuring the counter-action.

The co-operation of the air force with the navy is also to be emphatically taken into account, for it can contribute to the issue of naval combats. Ships are, in fact, vulnerable by aircraft, either bomb or torpedo-carrying. The security of flights was extremely slight in the past; in the open sea only flying-boats piloted by airmen-sailors could co-operate with the navy. This co-operation was, of course, very limited, as the flying-boat could only alight on water in calm weather. At present, a well-balanced

flying-boat can float on the surface for a certain time. A multiple-engined aircraft does not fear a mechanical break-down. The progress made in this field goes so far, that in certain countries there has been some talk of incorporating the air force with naval aviation. It would be preferable, in our view, to attach a certain number of squadrons of flying-boats to the navy, with a view to their permanent co-operation. The air force proper would operate with the naval aviation according to the circumstances, in order to attack the enemy air force or the enemy navy: this would, however, be an exception.

The normal action of the air force would lie in bombing the ports, the coasts, the air-fields of the enemy, according to the demands of the navy or the instructions of the government.

We shall have to take into account, in a future war, the increased power of the fighter air force. It already uses two-seater machines, thanks to the increased power and strength of its engines. It can even be foreseen that in the near future these aircraft, partly armoured and powerfully armed,[5] may take on board a numerous specialized crew. The squadrons composed of aircraft of this kind will, in future, form a redoubtable adversary whom the air force will have to face.

Air reconnaissance will replace, for the purposes of distant exploration of the terrain, the former reconnaissance rides of the cavalry. It will give the command the information indispensable for making decisions. As troop movements will be performed mostly at night, the air reconnaissance will take effect by day as well as by night, employing flares in the latter case.

Its part will be the more efficient as it will not limit

itself to the observation of the roads and the railways, but very little will escape its observation in a given region, thanks to film photographs which will reveal especially the moves of motorized units throughout all kinds of terrain, perhaps even at night-time.

In modern warfare with rapid changes and full of sudden surprises, the command would be powerless if it had not a reconnaissance service functioning permanently in a very active fashion and communicating, if need be, from hour to hour, the information obtained. The detachments of the army, the armies, and the army groups will thus have at their disposal squadrons of reconnaissance aircraft, numerous and powerful enough for the command not to be compelled to act haphazardly.

The *air observation,* even in 1916–1918, already provided valuable results for the regulation of the artillery fire, the establishment of liaison between the units of combat and the provision of information for the command.

It will possibly encounter difficulties greater than in 1918 by reason of the progress achieved in the precision of artillery fire against aircraft, but better organization and the improvement of communications will increase its usefulness.

The absolute necessity of watching the adversary's moves on the battlefield and his preparations for combat will be as necessary as in the past. Without observation-aircraft it would be impossible to discover at a given time, and from afar, the precipitate attacks of motorized units and rapid tanks. With this object in view, groups of observation-aircraft will fly by day and night, will take

photographs of the ground they cover and communicate continuously by wireless with the command.

Their tasks of air-observation will be especially facilitated by the use of machines with appreciable speed and range and capable of landing on every sort of ground, like the helicopter (or the autogiro of La Cierva). The missions will normally require the use of aircraft seating many people (the pilot, the observer, the wireless operator, the gunner), less powerful and slower, and in consequence less expensive, than the multiple-seater reconnaissance aircraft or those which will be a part of the independent air force. The crew will include observers from the territorial army.

It would thus be a specialized air force which would act in close liaison with the troops on land and which would not enter the ranks of the air force, strictly speaking, as in Italy, for instance, where the army co-operation air force is quite distinct from the independent air force.

One of the tasks of the air force will possibly be, in future, the transport of troops. In order to transport a battalion of infantry entirely equipped for battle, with provisions sufficient for a few days, some twenty transport aircraft of strong tonnage will be enough in another few years.[6] It will become possible, in modern warfare, to transport for great distances small combative units destined for skirmishes or diversions in the rear of the enemy. We should not forget however, that transport by plane, even if flying fast and in all secrecy, raises many objections. Should they even arrive safely at their destinations, detachments of this kind will be able to perform the mission entrusted to them only in exceptional circum-

stances. They will always be exposed to total destruction on their way or at their arrival, if the enemy is not taken entirely by surprise. They would have, however, some chance of success over a demoralized adversary or one compelled to undertake a disorderly retreat. The occupation of a few chosen points on the enemy's road of retreat could change his defeat into disaster. Exceptional cases may arise where risks taken by airborne troops would be compensated by the results obtained: every time, for instance, when isolated or encircled units have to be dealt with—to be rescued or provided with supplies—or when communication lines of strategical importance are to be maintained the loss or destruction of which would entail the disorganization of the adversary.[7]

4. AERO-CHEMICAL WARFARE

Unfortunately, it does not seem likely that, should war break out in our time, the activity of the air force will be limited to purely military objectives. All the more, in spite of constant progress in the precision of bombing from aeroplanes, the air force lends itself, even now, rather to the bombing of extensive objectives than to that of small and defined ones.[8]

Although it has been condemned by every civilized human being who still preserves any sense of human dignity, chemical warfare associated with aviation constitutes a redoubtable menace, above all, for the civilian population.

Reprehensible though it is, war, like every other manifestation of human life, has a moral aspect. It is beyond doubt that besides motives of an economic order, considerations of a purely moral order led President Wilson to

declare war on Germany; the violation of Belgian neutrality brought about the decision of Great Britain to range herself at the side of France and Russia. Having thought herself in a position to neglect international law, Germany exposed herself to universal reprobation which isolated her from the world.

Even to-day, technicians such as Professors Hanslian and Bergensdorff assert, not without finding a large audience among the ruling classes of the Reich, that the chemical weapon is the principal weapon of modern strategy . . . that the power of chemical industry should assure to the Reich not only of a crushing superiority over the weak nations but also of the rule of the world. To justify (?) themselves they stress the lightning efficacy of the chemical weapon, the facility with which any chemical factory can produce new kinds of gas, the secret of whose production is relatively easy to keep in peacetime. As in 1914, they are convinced that the horror let loose by putting such principles into practice can only be short lived, the end justifying the means.

But the Germans are not the only ones to voice such theories. According to General A. Fries:[9] "There is no other domain where the possibilities seem so great as in chemical warfare. Poison gases proved themselves one of the most efficient measures during the 1914–1918 war. This is one of the reasons why there will be no question of failing to make use of them again. Conventions on paper cannot prevent it."

No illusions are possible any more. From the day when Great Britain, the United States, Germany, Italy, Holland, and Sweden rejected at Geneva the principle of collective sanctions with regard to the State which would make use

of the chemical weapon, the situation has become quite unequivocal. The laboratories where poison gases are studied have multiplied all over the world. Associated with the air force, the chemical weapon, in the absence of sanctions, is dreaded everywhere as an eventuality to be remembered, with only this reservation—that attempts may be made, when the day comes, to throw all responsibility for its use on those who first take the initiative. . . .

We cannot deny the efficiency of the methods advocated by the promoters of this strategy which is, indeed, "very modern." A few squadrons of aeroplanes, equipped with gas bombs, at the rate of several tons per aircraft, would certainly be capable, if they reached their destination, of annihilating for a long period all manifestation of life in such centres as Paris, London, Berlin, etc. . . . Besides, there are not only gases to be feared. The incendiary phosgene bombs, of a reduced weight of a few pounds, kindle within a few seconds fires almost impossible to extinguish. Lastly, there are the two-ton bombs which, dropped from the altitude of 12,000 feet, are capable of completely destroying objectives extending over several hundreds of feet of surface and about thirty feet in depth.

5. GENERAL DOUHET'S THEORY

Because it may be adapted to so many various uses, it is not astonishing that flying has become one of the principal topics in the modern doctrines of warfare. Thus in June, 1927, in a speech in the Chamber of Deputies, Signor Mussolini declared: "It is indispensable that our air force, in which I have ever more faith, should be numerous and powerful enough to stifle by the roar of its

engines all other noises on our peninsula, and that the span of its wing should intercept the sunlight falling on our land. When we achieve this, we shall be in a position —to-morrow, that is between 1935 and 1940, when Europe will find itself at a turning point in its history—to constrain others to listen to us and to recognize our rights. . . ."

That this speech was not solely a declamatory manifestation—in spite of the speaker's conscious exaggerations —the imposing development of Italian aviation can serve as proof; this development was crowned in 1933 by the flights from Rome to New York and back, effected with complete success by a squadron composed of twenty-four flying-boats carrying a crew of 100 men—which is not altogether devoid of meaning from the military point of view.

This development is entirely in accordance with the theory formulated by General Douhet in his book *Il dominio dell' aria*,[10] which foresees an autonomous air force and a total air war.[11] It is with the air force that the decision would rest, in the event of war, aiming first at air superiority by the destruction of enemy air force, then smashing at the same time, by a methodical offensive against the armed forces on land and sea, the possible defensive reactions of the civilian population.

General Douhet's conceptions find, it is true, their starting-point in the geographical position of Italy, eight-tenths of whose frontiers consist of coast-line, extremely vulnerable, by reason of its very expanse, to a simultaneous attack from the sea and from the air. The Italian land frontier, which runs along the whole chain of the Alps, is relatively easy to defend on land. Thence General

Douhet's formula: "Defensive on land and on sea, offensive in the air."

Let us note in passing that the military measures taken by Italy are certainly not unconnected with her Mediterranean policy. A powerful air force, in case of a European conflict, would be capable of assuring her tangible advantages and, if not of supremacy in the Mediterranean, at least of a certain control of this sea, and possibilities of arbitration which would have to be taken into account.

The theory of General Douhet is, however, neither entirely new nor entirely original. It is known, in fact, that towards the end of the 1914–1918 war, Great Britain had undertaken the construction of a powerful air force, from which some Englishmen expected decisive results, but which they had not time to use.

We have said already what we think of a military organization and of doctrines of warfare based solely on one weapon or one exclusive method and claiming to decide the victory *a priori*. What is more, if flying has made real progress, it has done so in all countries; and, on the other hand, the organization of A.A. defence had made some progress, too.

The efficacy of a mass air attack thus remains subordinated to the numerical and qualitative strength of the aviation of the possible belligerents as well as to the anti-aircraft defence to be overcome. The air offensive can be prevented and turned back by the air force of the adversary. Admitting that it will attain its objective, even with the use of incendiary and gas bombs, the result obtained may not entail a rapid decision if the defensive organization has been sensibly conceived; this organiza-

tion is evidently more difficult to achieve in countries having dense and close agglomerations of population, and in consequence more vulnerable, such as Germany, and relatively easier in countries such as Poland or even France (apart from Paris), where the population is less concentrated.

It should be pointed out, besides, that a nation whose morale is solid will not declare itself beaten because the enemy air force makes a few air- or chemical-raids even if crowned by good results. Especially so if it has produced a modern army enjoying all its confidence and capable of bringing the enemy to his senses at once.

Harrassed by fighter aircraft, compelled to climb high or to operate behind smoke-screens in order to escape artillery fire—which in both cases lessens the precision of bombing from aeroplanes—the air squadrons, unless they want to risk heavy losses and unless they have made a surprise aggression before the declaration of war, will by daylight attain their objectives only with difficulty.

Lastly, though the night flights have gained in precision and safety, a night attack would be only relatively efficacious and then only against an adversary who had not been warned.

Powerful planes, armoured and having a great range of action and a great speed, would considerably increase the value of aviation as a decisive weapon in modern warfare. Air cruisers of this kind, armed with light and quick-firing artillery and numerous machine-guns, and capable of transporting important explosive material great distances, would constitute a particularly dangerous force, if such a force existed with only one of the belligerents.

Although air dreadnaughts of this kind have not been constructed anywhere as yet, there are already some types of aircraft which are similar to them.[12]

The first step in order to reach a decision by the air force would be to obtain the mastery of the air and then to maintain that superiority all the time, which is not at all easy.

The struggle for the mastery of the air will develop in conditions very different from those which can be attained on land, where stable fronts can play their part covering well-defined spaces and allowing the defence of conquered positions, while it is possible to envisage a progressive realization of a plan established in advance and to advance step by step to the fixed aim.

Quite a different thing happens in the air. As on the sea, but to a much higher degree, the adversary can remain inaccessible, by reason of the insufficiency of observation in daytime and the more so during the night. What is more, while the new technical discoveries as a general rule reinforce the defensive strength of the territorial army, the opposite is true for the air force. The technical progress multiplies the offensive power of the air force, which, in addition, differs essentially from the territorial army by its almost unlimited capacity for manœuvre.

At 21,000 or 24,000 feet the aeroplane escapes the action of the land A.A. defence. The latter is more and more difficult to carry out, if only by reason of the constant increase of the range of flying. The creation of even the most powerful air force cannot, in consequence, entirely eliminate the danger of enemy air-raids. The

cover it can give to the army and navy is equally inadequate, by the nature of things.

The aeroplane dog-fights during the World War were mostly limited to duels between aircraft or to combats between patrols. In modern warfare, the possibilities of air battles are, of course, not excluded, although they may easily degenerate into individual fights as the result of the dispersal of squadrons. Air battles could thus present some analogy with the onrush of masses of cavalry or with naval combats. The side which is faced with defeat will not be far from being annihilated; while victory will exhaust the victor. Consequently, the two adversaries will not expose themselves to this type of sacrifice, unless one of them has a crushing superiority. If this is not the case, each one of them will be compelled to increase at any price his aircraft production in order to make good, if possible, the losses suffered.

The mastery of the air is only certain and entire with the complete destruction of the enemy air force.[13] It is, however, impossible to compel the opposing air force to accept a battle which would decide its fate. It will always be able to avoid it; it will be able, in the majority of cases, to return to its bases if it has at its disposal fast enough machines, if it is well informed, and if its command is in good hands.

It will be the weaker party's job to profit by these possibilities and to temporize. On the other hand, the stronger air force may expose itself, if it seeks battle at any price, to the risk of a premature exhaustion of its strength.

We can easily understand how difficult it can be to

induce the adversary to accept battle, if we realize that, even if one of the adversaries fixes the direction of an air attack exactly and at a given time, he will not be able to reach the enemy and to start the combat unless he has machines superior in speed and in power.

In short, to obtain air superiority, it will be necessary to attack the enemy air-bases and destroy them. The battle of the air, strictly speaking, can take place either accidentally by the unexpected encounter of two squadrons, or when the two parties have decided to confront each other; but this will be an exception. As a general rule, war in the air will consist of an exchange of destructive air-raids against enemy bases. For the time being this is still the most efficient means of aerial action.

One can presume, besides, that this method would also become unfruitful if, in consequence of the new technical progress, the problem of landing-fields ceased to exercise a dominating influence. The rapid dismantling of the wings would make it possible to hide the machines under covers or to disperse them in the open like the batteries of field-artillery, outside the hangars and the tents where they are generally. In the vicinity of the front, the aeroplanes could be hidden in underground shelters. Lastly, a convenient spreading of bases would render them less vulnerable and would diminish the risk of their destruction.

In these conditions the mastery of the air could very well constitute at the beginning of a war the same kind of chimera as the mastery of the seas. The air offensive would end in an exchange of raids, unfruitful from the point of view of air supremacy, if one only of the two air forces, or both, avoided a pitched battle.

In the long run the supremacy will fall to the air force that is not only more powerful, but also more numerous, that is to say, to the one which is able to devote at the same time the greater number of units to the defence, to raids, to pursuit and to the destruction of enemy aircraft and their bases. It is only thanks to this superiority that the mobilization, the concentration, and the army and navy operations can be performed usefully and decide the victory. It is well understood that the future may bring many modifications of this subject, in more than one respect. At present the decision, it seems, may only be obtained by the co-operation of all the armed forces: army, navy, and air force: among which the air force is now called upon to play the role of an autonomous weapon.

6. THE TASKS OF THE AIR FORCE IN MODERN WARFARE

As long as the risk of aggression and in consequence that of an air war is not banished from international life, one of the duties of national defence will be to create an air force, whether autonomous or not. We find in Italy the classic type of an autonomous formation of this kind, the aim of which is to start a mass war, either in an independent manner, or in co-ordination with the army and the navy, in defensive as well as in offensive warfare. In proportion to its total effectives, the units of co-operation allotted to the navy and to the territorial army would be, in future, relatively small, because they would be entrusted with tasks of a secondary nature from the aeronautical point of view. Under the influence of General Schwarte and Major Ritter the theories of Douhet seem to have been partly adopted by the Germans, who have

already more than 250 machines capable of carrying out bombing raids. The latter constitute the nucleus of the powerful force organized by General Goering. In Japan, out of a total of effectives of 1,312 units in 1933, 350 machines were detached to form an autonomous air force. The Soviets apparently have an air fleet of 2,000 units, out of which 400 are bombers, some of them of the modern five-engine type.

It seems that all the other countries, France, the United States, and lately Great Britain,[14] have been resolutely working in this direction.

In its present state the military air force embraces a variety of types of machines which render its organization very complicated. Even the suppression of the differences established between the observation and the reconnaissance which would entail two more types of aircraft, one with a short and one with a long range of action,[15] and similarly among the day- and night-bombers we shall have to reckon with several types of machines, including fighter, transport, communication, and ambulance aircraft.[16]

It is quite obvious that from the technical point of view the rational organization of an air force will necessarily entail the centralization of research, of tests and of the construction of aircraft, with a view to obtaining a better co-ordinated production, swift, economical, and serial, which would limit, to a given maximum, the models of aeroplanes, at the same time facilitating the training of pilots, of engineers, and of the technical staffs. The regrouping of the squadrons easier for the formation of operational groups would thus become.

Other considerations of a tactical nature also influence

this evolution. An air force should form a homogeneous mass, powerfully armed, and having great mobility which renders it capable of manœuvring. It will thus comprise bombers capable not only of bombing land objectives, but also of ensuring their own defence and engaging in air combat.[17]

The fighting, the observation, and the liaison will be entrusted to the two-seater, an armoured and armed machine whose essential characteristics will be speed and flexibility.

The safety of the air force in flight, in formations of considerable squadrons, remains, however, quite clearly a condition of the efficacy of air-raids. Assuming the aircraft to be equally powerful it will be achieved only by the numerical superiority of the squadrons.

7. THE MOBILIZATION OF THE AIR FORCE

Having in peace-time effectives very nearly as high as those in war-time, the air force should, besides, have enough spare material to be able to outlast the beginning of hostilities until the moment when the construction of new machines in the mobilized factories will attain its maximum output. About one-third of the total peace-time number of machines should be put into the reserve to cover possible losses.

In addition to the active military air force, the requisitioning of the civil aviation, already provided for in peace-time, would supply more or less useful machines for secondary tasks. In certain countries, e.g. Germany, where civil aviation is subsidized by the State, the aeroplanes of transport companies are even now constructed with a view to being immediately adaptable for military

tasks such as bombing or reconnaissance. Everywhere else, transport aeroplanes would be used mostly as ambulance or communication planes, etc.

The active military personnel, recruited on a voluntary basis for shorter or longer periods of service according to the special qualifications as pilots, engineers, gunners, machine-gunners, radio-operators, photographers, will be reinforced by a reserve personnel, subjected in peacetime to periods of training, indispensable to put them and keep them in training.

By reason of the continual increase of speed and the lifting of the ceiling of flight to great altitudes, the physical qualities and the training of the crews will become important factors in air battles. The piloting of a machine, while the crew is compelled to have recourse to artificial respiration, becomes a test of endurance which tells on the efficiency of the air force in war.

II. THE A.A. DEFENCES OF THE TERRITORY

1. GENERAL REMARKS

The A.A. defence of a country should take all necessary measures to prevent enemy aircraft from flying over their territory and, should the enemy nevertheless succeed in flying over his objective, to protect establishments and human lives against bombing from the air.

The A.A. defence was classified, until recently, into two different categories. The first one, purely defensive, popular in Great Britain, mostly made use of fighter aircraft and land A.A. defences. The second, of an offensive character, adopted in Italy, consisted exclusively of bomber

aircraft. But fighter aircraft are not quick enough in interception and have a limited range of action. The fire of the A.A. batteries, even if it could be instantaneous, lacks, as yet, precision, and the defence through bombing of enemy bases can be useful only as prevention or in the form of retaliation raids. An exclusive choice of one or the other of the two systems seems, in the present conditions, to be inopportune.

The result is that countries which have adopted exclusively offensive methods have been led in the last few years, with regard to the A.A. defence, to supplement their bomber air force by fighters and adequate land A.A. defences, and vice versa.[18]

2. GENERAL CONDITIONS OF DEFENCE

Whatever the system adopted, it will be effective only in the measure in which it possesses an aircraft-spotting service and a service of communications, organized in such a way as to render any important surprise impossible. Surprise can be avoided up to a certain extent if, even in peace-time, the intelligence service functions as it should do. In war-time, a well-organized spotting service is a condition *sine qua non* of the entry into action of the defence. Furthermore, we should make provision for the fact that, even if it can perform its duties relatively satisfactorily during the day, thanks to visual observation, spotting by ear at night has neither the same range nor the same infallibility. The indications given by detector-posts will thus be more certain if the net of spotters is thicker inside the country and along the frontiers, and if the centres of command are able instantly to sift the intelligence received, so that the information and its

exploitation should be almost simultaneous. The number of spotting centres, and consequently that of relaying ones, ought to be such that an alert could be given with full certainty and at the right time.

Only a trained personnel, mostly in the central observation posts, will give, in this respect, sufficient guarantee of success. The network of communications and that of alarm signals, perfectly organized, should be even surer and should function more quickly as the flying speed of the modern air force becomes greater.

Among the organizations of this kind, the Italian and German ones seem to be very well planned. Carried out in Italy by a militia (D.J.C.A.I.) composed of territorial soldiers over forty and young men below military age, officered by units of the standing army, the spotting and locating service has effectives in peace-time of 100,000 men. In the event of a war Italy will thus avoid having to improvise her system of A.A. defences, unlike many other countries less well prepared in this respect.

3. ACTIVE DEFENCE

The most effective means of defence against an air offensive remains, in spite of all its shortcomings, aircraft. Attacks directed at the air-fields of the enemy air force, reprisal raids, air combats—such are the reactions of the anti-aircraft defence. The autonomous air force will see to a part of it. The defence will remain, on the other hand, to some extent the task of the light aircraft, equipped with improved fighter machines. Concentrated at conveniently chosen points, ready at any moment for action, they should be able to fly out to meet enemy squadrons, in order to

engage them in combat either in the course of flight or in the vicinity of the objectives of the adversary, to inflict on him the greatest possible losses, to compel him to retreat or at any rate not to allow him to accomplish his mission.

In the present state of affairs, we must agree that defence solely by means of fighters, except in unusual cases, seems rather a problem, and will become even more so as the speed of the bomber aircraft will increase. There will be a race in speed between the squadrons of attack and the communications of the attacked country.

The principal mission of the autonomous air force and of the co-operation air force assigned to the army and navy is to collaborate with the latter to achieve final victory. It is advisable for this reason, not to waste the air force and to employ it only in exceptional cases for purely defensive air-covering missions. We must doubtless foresee that the air force will take an active part in the defence of the territory every time the enemy force directs its attacks against points of vital importance for the national defence, such as the industrial centres, or if its action should prove of a nature to spread panic among a too nervous population. In cases of this kind the government might call for squadrons of fighters and, most of all, for preventive actions or for reprisal raids by bomber aircraft over enemy territory.

The air attacks against enemy air-bases, the destruction of air-fields, hangars, and dumps of material, will be the normal form of action of the air force. They will be facilitated by surprise, the chances of which will become the greater in proportion as the operations are better

prepared. These operations will have as their object the paralysing of the enemy air force even before it starts bombing.

In order to ward off the danger of such an attack, or at any rate to minimize its results, attempts were made in 1918 to avoid stationing squadron groups on limited spaces, and a beginning was made in the construction of special shelters for aeroplanes. This last preventive measure would be very expensive for a large air force and would be very difficult to achieve in practice. The type of machine which we should attempt to build should be a robust and manœuvrable aircraft, capable of landing on every kind of terrain and staying all night in the open, that is to say, a machine which could do without special landing grounds and hangars, which would render its discovery by the enemy very difficult.

The aeroplane in modern warfare will thus constitute only one of the principal elements of active defence. Its action will be amplified by all the means at the disposal of the defence on land. Among the latter, the most important are the A.A. artillery composed at present of special guns of 75 mm. and 105 mm. and the heavy machine-guns of from 13 to 25 mm.

In 1918 the number of shells necessary to shoot down an aircraft was calculated at 5,000. To-day the A.A. artillery is a specialized weapon, entirely modernized, and whose fire, directed by batteries and in groups, is more formidable than in 1918. But the bomber aircraft are very heavily loaded and consequently rather slow; they operate at a medium altitude and descend even lower, if need be, in order to bomb with precision the objectives on the

ground. The result of this is that the number of shells necessary for shooting down an aeroplane can now be reduced by a third in relation to the above figure. If the range of fire of the A.A. artillery is successfully increased (the range of the 105 mm. gun is already over 20,000 feet in height), and if there is a sufficient number of guns available, they will become for the bombers a dangerous adversary and one who, in particular, will compel the enemy aircraft to climb high, to disperse, to manœuvre, to take evading action and in any case will prevent them from remaining above their objectives for long, which will to a great extent paralyse the offensive action of the bombing. When the squadrons are dispersed, isolated aircraft can, moreover, become an easy prey for the fighter aircraft of the defence.

The modern A.A. artillery will work at night as in daylight, on condition that the detectors locate with precision the enemy aircraft and the searchlights spot it and follow it with their luminous beams. Experience has proved that an aircraft spotted at night by a battery of searchlights can escape only with great difficulty.

It is also possible to defend oneself against aircraft flying low by heavy machine-guns, provided that they are available in sufficient numbers and served by experienced crews. They can practically prevent aircraft from going down lower than 3,000 or 6,000 feet.

We should necessarily distinguish in active A.A. defence, the defence of tactical units, either mobile or stationary, of batteries in position, of establishments, of services, etc., and the defence of the centre of the territory.

The units of army A.A. defence should be able to conform to the moves of the army. They should be more mobile than the units of general defence.

These units must be rather strong if we wish to avoid the freedom of movement of the troops being hampered by the enemy air force. It is clear that the sections of heavy A.A. machine-guns which can be also used as anti-tank guns will be much more numerous than the batteries of A.A. artillery. While the latter would be usually at the direct disposal of the commander-in-chief, who would assign them to a given unit according to needs and to the situation, the groups of special A.A. machine-guns would form an essential part of the tactical units: it is desirable that every unit of the size of a regiment should have machine-guns capable of this sort of fire.

In all armies adequately equipped with modern war-material this will doubtless be realized in the near future.

A well-conceived organization of active A.A. defence of the territory which, for various reasons, among them financial ones, would have to be limited to vital centres of the country, nevertheless presents a very important guarantee of security. The mere fact of the existence of such an organization is calculated to make the adversary think twice before launching an attack and would limit his activities in the air war.

4. PASSIVE DEFENCE

However numerous and improved, the means adopted for active defence cannot with certainty prevent the whole of the territory from being bombed by the enemy air force. The organization of a so-called passive defence

is provided for by sheltering or camouflaging objectives on land. In order to be effective, this passive defence would necessitate, in principle, an almost radical transformation of the lay-out of localities and especially of great cities; that is to say, the adaptation of town-planning and architecture to the possibility of a war in the air.

To meet these needs the buildings would have to be constructed entirely of reinforced concrete and erected in large blocks of flats, in order to diminish their surface and the efficiency of aero-chemical attack; concrete terraces sufficiently resistant to the action of medium-calibre bombs would everywhere replace the present roofs; underground shelters which could be made watertight instantaneously would be built in each building and made gas-proof; water, gas, and electricity mains would be led up to the floors in armoured pipes placed in the centre of the building.

The plan of the city itself, instead of taking into account the need of centralization of the public services, would tend to spread them as far away from each other as possible; the transverse thoroughfares, their breadth varying according to the direction of the winds, would be supplemented by underground streets, specially built for that purpose, which in case of a raid would serve as shelters without interrupting the traffic. The city would then spread in surface, multiplying the zones *non ædificandi*, while the houses, at great distances from one another, would rise, like the American buildings, to hundreds of feet in height. The important administrative centres, the factories, the power stations would be situated outside the city.

Besides private shelters in every house, collective shelters would be planned, equipped with watertight doors, compressed-air apparatus and gas-masks.

The ideal solution would be provided by a garden city,[19] capable of extension and forming a transition between town and country, where private houses would be grouped round squares containing the public services, connected with the administrative, commercial, and university centres by large thoroughfares, so built that on the whole the constructed surfaces did not exceed one-tenth of the open spaces.

But we are still a long way away from such plans. In the meantime, the density of city agglomerations like Paris (fifteen times denser than cities like Berlin or London), with their streets, mews, squares, and back-yards, makes the application of the A.R.P. measures almost inoperative. Some authors have been inclined to envisage the possibility of evacuation from great cities particularly threatened by enemy air force. This, however, seems rather difficult.[20]

Other measures, such as false signals, camouflage, black-out with false lights, smoke-screens, have led to research aiming at an improvement of the spotting and of the directing of air-craft with a view to freeing them from the need of looking for landmarks. The struggle, on the other hand, is not limited only to the technical domain; the Intelligence Department may succeed in revealing the best-guarded secrets. Some people advocate, for instance, the secret moving of important services from one place to another in order to foil the enemy. Even if we could do this with adequate accommodation

while ensuring liaison, the result would be in proportion to the secrecy.

The dispersal of vital centres, such as the railway stations from which the armies are moved, was tried in 1918. They were fitted out in such a way that bombing could not impede their functioning or only cause damage that was limited and easy to repair.

With the new aviation, the dispersal should be still more extensive. In war-time it would lead to an economic and administrative decentralization which seems to be quite opposed to the contemporary tendencies of peace-time.

In reality we shall have to be content with collective shelters fitted out in accordance with the types foreseen by the International Experts Commission of the Red Cross, in order to protect a part of the civilian population against the action of high-explosive, incendiary, and toxic bombs. Shelters of this kind will be indispensable to assure, first of all, the functioning of the A.R.P., the protection of the railway personnel, of the factories,[21] and in general all the important public services. We can use, for this purpose, all the tunnels, underground passages, underground railways, etc., provided that in peace-time they are supplied with the necessary technical equipment.[22]

These shelters, however, will not be sufficient for great city agglomerations. The construction in new houses of inside armoured blockhouses, the use of cellars of private houses, prepared in advance, reinforced and conveniently laid out, will constitute provisional measures.

In closely examining the problems arising out of the organization of passive defence, it must be stated that

the effective protection of the entire population against an air offensive, and particularly against an aero-chemical one, seems illusory. In the present state of affairs, in view of the distribution and the density of the town population, we shall have to take, first of all, all the measures of protection necessary to assure the functioning of the defence and the administration of the country in war-time, which for the poor countries will be rather a difficult thing to do. The application of the defence measures will depend, in the majority of cases, on the nerve and the discipline of the population and also on the degree of instruction received in peace-time.

The only truly efficient defence against aero-chemical warfare would be the preventive action of the air force through operations which it might undertake against the enemy air force and its bases.

5. ADMINISTRATIVE MEASURES. CONCLUSIONS

The responsibility for the passive defence would be assumed by the civilian authorities, the mayors in small and medium-sized towns, and special district commissioners in the great cities. Every great agglomeration would have an information centre and a directorate, entrusted with the task of giving the alert and orders pertaining to all the A.R.P. measures, the black-out, the stopping of the traffic in the streets, the sending out of false signals, the alarm given to fire services, to sanitary services, etc.

The exercises in peace-time, rather frequent in order to develop discipline and an indispensable degree of automatism, would be directed by the chief of the district (town or administrative unit).

Such an organization would be, of course, subordinated to that of the different ministries: War, Air, the Navy, for the training of personnel and for the military establishments, and to the Ministry of the Interior for everything concerning the civilian authorities. The Ministries of Posts and Telegraphs, Health, Public Works, Trade and Industry, and even of Education [23] would also participate in it, each in its speciality.

The co-ordination and the centralization of everything concerning the A.A. defence in all the aspects of national life rests, in Italy, with the head of the Government, who is Minister of National Defence. He is seconded by the chief of the General Staff who, ever since 1917, has had at his disposal a special General Staff (of A.A. defence) composed of officers of artillery, of the navy, and of the air force, who may also appeal to the Supreme Council of National Defence as well as to the Committee of Civilian Mobilization.

In France there was founded in 1931 a "General Inspectorate for the Defence of the Territory against Aircraft" (D.A.T.). There are no essential differences between the French and the Italian organizations. In practice, however, in France the General Inspectorate of the D.A.T., whose powers are very extensive, has had to refer to the Cabinet when the measures advocated by it have had to be put into realization by one of the ministries. In case of war, and this is undoubtedly a superiority over the Italian system, the General Inspector of the D.A.T. assumes the direction of the passive and active defence all over the country, with the exception of the actual zone of operations.

In conclusion, the powers of the direction of the A.R.P.

will include the following: preparation and issuing of all the special instructions; division and classification of the organization of a net of spotting and signalling posts all over the territory; the installation of active defence posts; the making of stocks of materials for various units; the instruction of the staffs by a professional personnel; the distribution of gas-masks to the active elements of the population and the preparation of stocks of gas-masks to be sold in the retail market, and, lastly, the organization of civilian staffs of passive defence.

It is quite obvious that these arrangements must have the active support and the permanent initiative of the municipal and administrative authorities. It will be their job to prepare the population for the eventuality of an aero-chemical attack and to create instinctive reactions among them by arranging frequent exercises and by spreading adequate propaganda with a view to collective defence. The laws promulgated to this effect, as in the U.S.S.R., in Poland and chiefly in Italy, will be calculated to facilitate their task, imposing on every citizen the obligation to participate in the A.A. defence of the territory. The direction of the A.R.P. should constantly encourage all initiative in this domain, and especially all measures by which it would be possible gradually to strengthen the defence of the vital centres of the country against air attacks.

It is clear that if war were to be prolonged, the resistance of the country until armed victory is achieved would depend largely on the nerves of the population, on its courage and the means to protect it.

Whatever are, in fact, the efforts made by the State for the A.A. defence of the country, this should not be detri-

mental to the organization and the power of the army, navy, and air force, on which rests the security of the country in peace-time, and they are the only factors which can assure victory in war-time.

REFERENCES

1. Fonck, a Captain of the French Army, has been almost the only one to survive his very numerous victories (about 100 enemy planes shot down), thanks to his outstanding fighting qualities.

2. The bomb is dropped from a plane as if it were fired from a gun; it keeps its direction after it has been dropped, for it has a speed of about 350 miles per hour: 140 yards per second; dive-bombing gives a very precise aim. The Americans use it very frequently.

3. The evolution of flying has considerably modified the possibilities and the methods of naval warfare. The navies cannot do without new types of ships and machines, such as the aircraft-carrier, the compressed air catapult, the ships convoying flying-boats and aircraft-carrying cruisers. The mastery of the seas, which remains the aim of naval warfare, cannot be obtained without the intensive and sometimes even exclusive participation of aviation, in naval combat, in the attack on the naval and air bases of the adversary and of his shipping lanes (cf. the theory of the Italian commander Fioravanzo). In closed seas, such as the Baltic, squadrons of aircraft having a speed of 220 miles per hour will be used. On the open seas and on oceans, it is possible to foresee the use of long-range flying-boats, as part of an autonomous air force.

4. The covering of bombing operations on a great scale cannot be assured, as we have already said, by the present fighter aircraft which sacrifice their range of action to speed and to

mobility, and have only enough petrol for two or three hours of flying.

5. In particular, the proposal is made that the fighter aircraft should be armed with a cannon intended to replace the machine-guns, which, by reason of the increasing flying speed, seem gradually to lose their combative value. The firing of a fighter cannon will be doubtlessly more hazardous than that of the machine-gun (it fires single shots and attains only one objective, while the machine-gun fires in bursts and covers an area), but the shells will always cause considerable damage to the enemy aircraft, especially if they are made entirely of metal.

The advantage of the cannon for the fighter is also that it can fire at a greater range than a machine-gun, when the *relative* rate of movement of the fighter in relation to the target is less rapid. Besides, we are speaking of a very small cannon, of about 25 to 35 mm.

6. These aircraft should without doubt be able to transport about a hundred passengers: thus some eight to ten aircraft would be required for a battalion, for men only. To these must be added the armament, the food supplies, munitions, etc., which they require on land; two carts of one ton per company, four to five carts of one ton per battalion, sixteen small wagons of four hundredweight for the machine-guns, not counting the forty pounds carried by every man, in all perhaps fifteen to thirty tons of material, for which three or four more aircraft would be needed (of course without taking the vehicles on board).

7. The theories expressed on this subject by the military writer, F. V. Borgmann, according to whom aircraft landings could be used to encircle the adversary, seem to us rather premature.

8. The precision of fire from aircraft, whatever the projectiles employed, large or small bombs, incendiary bombs, projectiles of small calibre against human objectives, machine-guns—

proved to be very relative during the Great War. Thus, the station of Metz-Sablons, frequently bombed by air squadrons during the 1914–1918 war, was found to be only slightly damaged after the Armistice was signed.

9. General A. Fries and Major C. J. West—*Chemical Warfare.*

10. Supported at the beginning by military technicians of such ability as General Grazioli, the doctrines of General Douhet may be considered to have been incorporated into the official war doctrine of the Italian General Staff.

11. See *La Doctrine de Guerre du General Douhet,* by Colonel Vauthier, Paris, 1935 (Berger-Levrault).

12. The Junkers G.39, constructed in Japan by special licence, would be capable of carrying twelve tons of bombs(?). Armed with seven machine-guns, this multiple-engined aircraft of 3,200 h.p. could remain in the air for twenty hours. If it is true that this aircraft really has such possibilities, the Germans are very probably taking all the necessary measures to construct it serially, and the U.S.S.R. is following their lead.

13. *See* General Niessel: *La Maîtrise de L'Air.*

14. The programme of British military aviation for the year 1934 raises the number of air squadrons to forty-one and this will probably lead Great Britain to form an autonomous air force in the near future. The naval aviation, the aircraft-carriers included, to which Great Britain has almost exclusively devoted her efforts until now, is, as is well known, one of the most powerful in the world.

15. The reconnaissance aircraft should have a speed equal or superior to that of fighter aircraft; they should be able to climb to an altitude of 30,000 feet, have a range of action of about 1,300 miles, and be of comparatively small size in order not to be easily discovered in the sky. In a word, they should be similar to fighter aircraft with less mobility and a wider range of action.

16. A comparison of the present types of aircraft with formations of cavalry and with the navy:

Types of aircraft.	*Formations of cavalry.*	*Warships.*
Reconnaissance.	Machine-guns on motors and light cavalry.	Light cruisers.
Observation.	Units of cavalry of infantry divisions and army corps.	Corvettes.
Bombers.	Mounted artillery, front line cavalry.	Men-of-war.
	Powerful machine-guns on motors.	Battleships.
Fighters.	Light and rapid tanks.	Destroyers.
Communication aircraft.	Mounted liaison.	Aircraft.
Transport aircraft.	Mounted dragoons.	Auxiliary cruisers.
Ambulance aircraft.	Ambulances.	Hospital ships.

17. The type which would be best suited to these tasks but the realization of which still seems remote, would be the heavy armour-plated bomber aircraft, with several engines, of a range of 1,300 miles, flying 160 miles per hour, powerfully armed and capable of carrying several tons of bombs. An air force composed of aircraft of this type would constitute a powerful instrument for strategical manoeuvre, and would play a most important part, above all, in a general war of many fronts at great distances from one another.

18. Apart from her fighter air force, which comprises about 160 aircraft, including the Hawker-Fury type (200 miles an

hour), and biplanes of the Hawker-Demon type, which are among the best in the world, Great Britain could not find a more efficient means for assuring the defence of her communications with the Empire and the Dominions.

On the contrary, Italy, who at the beginning resolutely engaged on the almost exclusive construction of an offensive air force, has now strongly increased her fighter force, whose present effectives are 350 aircraft. The CR.20 and the CR.20 *bis*, armed with two machine-guns, fly at 150 miles an hour, and climb to 23,000 feet in fifteen minutes. The CR.30 has attained since 1932 a speed of 210 miles an hour. Other types are being studied at present which will probably attain a speed of 250 miles an hour. The Italians have also started in the last few years to organize the A.A. ground defences; with the result that their system seems to be to-day one of the most complete in existence.

19. Cf. Lieutenant-Colonel Vauthier—*Le Danger aérien et l'Avenir du Pays*, Paris, 1932. (Berger-Levrault).

20. In order to evacuate three-quarters of the Seine Department, at least ten to fifteen days would be required, using all the roads and all the available transport.

21. All the industrial centres of importance should be directly connected with the centres of information, possess their own units of defence, a fire-fighting service and an ambulance service, formed on the spot and organized with the help of employees, workers, and of the population, who would be equipped with gas masks. A rapid alarm system would give the alert and allow everybody to join their posts.

22. The law of December 20th, 1932, made obligatory in Italy the preventive laying-out of underground passages in expectation of aggression from the air.

23. For the preparation of youth for A.A. defence. This formation was made obligatory in Soviet Russia from December 1st, 1932.

CHAPTER IV

The Mobilization

1. THE MOBILIZATION IN 1914

UNTIL 1914, mobilization consisted essentially in putting the peace-time armed forces on to a war basis. It was based everywhere on the existence of considerable standing forces, put on their war footing according to a table of effectives established in advance. It was a relatively simple operation which was restricted to the incorporation of reservists, to the requisitioning of material, fixed in advance, and to the formation of a few reserve units (sometimes by doubling the standing units). It was facilitated by the presence with the colours of three classes, on the average. The transformation of the standing army into a fighting army summed up the mobilization of 1914, as it did that of 1866 or 1870. It took effect in accordance with certain rather rigid rules, applied automatically with only a few variations by almost all the countries which prepared themselves for the entry into war. In principle, the effort of mobilization accomplished,[1] the armies went into battle with supplies, material, and reserves which had to last until the final decision, which, it was calculated, would be reached within a very short time. In these conditions a few days or, at longest, a few weeks sufficed to raise to their battle effectives the op-

posing armies. The number of units was small; thus the number of infantry divisions was increased from 50 to 79 in Germany, from 78½ to 123½ in Russia, from 47 to 75 in France.

Apart from a limited degree of co-operation, which was moreover quite exceptional, the civilian population did not participate directly in the national defence. The participation of industry and generally speaking of the economic forces of the country was very limited, because of the expectation of a short war.

2. THE MOBILIZATION IN A MODERN WAR

At present, the eventuality of a war, short or long, general or localized, requires, apart from modern armaments, the total mobilization of the nation.[2] The administration, the industry, and all the civilian services are necessarily submitted from the very start of the hostilities to a total or partial control in accordance with the part which they will have to play in national defence. The general mobilization thus requires a general levy of the whole nation (as in France in 1793) and the employment of all its economic and political forces; moreover, it is the mobilization, in the strict sense, of the armed forces.

But even if provided for in the smallest details, the total mobilization takes quite a long time before reaching its peak.[3] According to some theorists, a State determined to make war would fix the date of it in advance and would try to proceed first to the secret mobilization of its industry, which would in all probability assure an undoubted material and, perhaps, decisive advantage over its adversary, and then to the abrupt mobilization of its armed forces. The rationalization of industry and the

forming of important stocks of raw materials allow a very rapid increase in the production of war-material and tally logically with conceptions of this kind. It is quite improbable, however, that the countries exposed to aggression would neglect for their part to make all the necessary arrangements to see that they were informed beforehand, which, by the way, does not imply insuperable difficulties. They would proceed in consequence besides taking international political steps to prepare for defence immediately. It follows from this that the adversary would in any case be compelled to reduce to the minimum the preliminaries of war. In these conditions, each of the belligerents would try to forestall the other by the speed of his mobilization. This would entail a race to be ready before the adversary. The preparations might take weeks or months.

The gradual reduction of the period of active service, which reduces the effectives of a division to half what they were in 1914 (5,000 men instead of 11,000) is, however, of such a nature as to delay considerably the putting on a war footing of the total of the armed forces.[4] Hence the necessity of mobilizing by stages, of which the first, the covering operations, would be undertaken in the minimum of time required by the needs of the country and by the circumstances.

For all these reasons, the troops put into the line at the start of hostilities—that is to say, the active troops of the frontier regions mobilized at the moment of political tension and the reserves called up either to complete the active units or to swell the depots in expectation of losses —would be relatively limited in the event of a partial mobilization. In a general mobilization, to-day as in the past,

States will try to put on war footing, as rapidly as possible, the maximum number of combat units.

The differences in numerical distribution between the reserves and the fighting units would be very marked as compared with the last war. Independently of an important part of the active corps maintained permanently available in order to form the active nucleus of new fighting units, the old classes of reservists would assure the functioning of the auxiliary defence services inside the country, the guarding of strategical communication lines beyond the zone of operations and the intensive production of war-material.

By clearly defining, in this sense, in peace-time the general plan of the mobilization, the distribution and the employment of reserves, mistakes made in 1914, which made the special assignment of certain combatants necessary, will be obviated. More than a third of the total effectives of mobilized soldiers were in fact assigned towards the end of the War to service inside the country (factories, transports, etc.) which at the beginning called for only about a tenth.

The specialists and the qualified workers, who are relatively less numerous, can be kept, regardless of their age, in the special services corresponding to the needs of national defence; but, in principle, every man under forty and capable of active service should be made use of in combatant units.

The duties of the rank and file in modern warfare become greater with the growing importance of their tasks in the course of battle, not only by reason of the technical material employed, the handling of which requires good specialists, but also by reason of the shortening of the

active service which lessens the individual value and the initiative of the soldier. The losses in officers and N.C.O.'s thus become more important and can be improved only by strengthening the ranks according to the circumstances of the military system adopted.

3. THE SUPPLYING OF THE COMBATANT UNITS WITH WAR-MATERIAL AND THE ECONOMIC AUTARCHY OF THE COUNTRY. THE PLAN FOR AN ECONOMIC MOBILIZATION

It is wise to arrange, in the future, that the covering divisions called up to protect the mobilization should have at their disposal a supply of materials and armaments of excellent quality. The units of manœuvre, that is to say the units of the active army in particular, will use mostly the war-material suitable for an offensive. The garrisons of sectors will need a reinforced defensive armament. The war-material should be assembled, for these reasons, in peace-time, in quantities sufficient to allow the army to carry on the operations during the first weeks, i.e. until war industry is proceeding at full swing.

It will be difficult, however, to maintain this equipment of a whole army at the initial level. We must take into consideration the fact that the value of this equipment will diminish if there is no lull in the operations before the full development of the industrial output. Of course, this crisis will not be very serious in the economically and industrially strong countries.

But the countries with a weak industrial structure will, on the contrary, exhaust their supplies of war-material in the first engagements. To replenish these supplies and also to equip the units mobilized in the succeeding stages,

the difficulties will become the greater as the possibilities of development of war industry grow weaker, and the production of war-material slower. These countries will thus be induced to resort to help from abroad in order to satisfy their needs; the countries tied up by alliances will, on the other hand, have to co-ordinate their resources in order mutually to repair their shortcomings.

We cannot, however, count largely on external help. In the event of a general war each country will think of itself first of all. With the using up of material which may very much exceed the least optimistic expectations, a system of inter-allied supplies might well remain only theoretical, even with the best will in the world. Lastly, the fantastic development of flying and of the submarine fleet exposes each of the belligerents to the danger of being isolated from the rest of the world, whatever the advantages of his geographical situation.

It follows from this that at the basis of every military system there should remain the absolutely rigid principle of each country organizing its own production and making an initial provision of material, which, according to its situation, would allow it to be self-sufficient during a shorter or a longer period. And this entails, in peace-time, the application of measures strictly adapted to the needs and resources of the whole country, among others the forming of stocks of war-material and of raw materials, the requisitioning or the taxation of products and the rationing of basic food-stuffs.

We remain in the domain of probabilities when we aver that along with all other weapons, the belligerents will make use of the economic weapon. They will try to disorganize the economy of the adversary, to attack his

currency, to cut him off from international trade by blockade and boycott, by exercising a strong pressure on the neutrals—all these measures would check his war production and act as effectively as a victory on the battlefield, if not more so.

We shall measure an offensive of this kind at its proper value if we imagine the costs of the hostilities of 1914–1918. According to Dr. Gaspary,[5] the war expenditure of Germany rose from 1.7 milliard marks in 1914–1915 to 2 milliards in 1915–1916.

The rational organization of the country's economic mobilization will call not only for the shifting over of industries to production for national defence, but for their distribution over definite zones with regard to the range of action of the enemy raids. In this respect the theoretical plan of organization of the Soviet Union is undoubtedly a model of its kind.[6] The policy which prompted the drawing-up of the first Five-Year Plan was partly inspired by the necessities imposed by war. The continuity of the Soviet effort in this direction is, moreover, confirmed by a motion of the Fifteenth Soviet Congress which assigns to the second Five-Year Plan, as one of its essential objects: "the consolidation of the defence of the State and its economic stability in time of war."

The transformation of the industrial regime in the U.S.S.R., the costs of which amount to 64.6 milliards of roubles, is in reality subordinated to the needs of defence. The heavy industry and its derivatives (metallurgy, chemical products, motor-cars, etc.) have been spread for this purpose over central regions where they are expected to surpass the production of the Don Basin

(Ukraine), which until now represented 33 per cent of the total production of the Soviet Union (of which 77 per cent for coal, 56.5 per cent for iron and 45 per cent for chemical products). The second Five-Year Plan foresees, moreover, the expenditure of 2 milliard roubles for the organization of an industrial centre in the Urals, where important coal seams and mineral ore deposits are particularly suited for the building up of war industry. Lastly, Western Siberia is also to be entirely reorganized from the agricultural and industrial point of view.

4. THE MOBILIZATION STOCKS

The most optimistic provisions cannot entirely rely on the possibilities of production in war-time. It is precisely at the beginning of hostilities, in expectation of their probable violence, that the quality and the quantity of stocks of all kinds will play a most decisive part. Of course the problem is not urgent for countries like Great Britain, the United States or, soon, Soviet Russia, which have or will have a very high industrial potential. Their capacity to become self-sufficient will allow them a relatively late mobilization, if their covering operations answer the needs of their defence. Lastly, their size and their geographical situation give them a certain security.

This is not a rule, however. Generally speaking, the mobilization stocks will be the more important for any given country—not including the equipment of the covering troops—the smaller its economic and industrial capacity. The real inferiority of agricultural or weakly industrialized countries cannot be compensated by this, whatever the stocks of war-material amassed, but by their

association or federation which, apart from political considerations, is imposed on them by the inflexible determinism of their geographical and economic situation.

The supplies collected in peace-time in view of a mobilization should suffice entirely for the first period of war, which may, in unfavourable conditions, be prolonged until industry is in full swing; the industrial war production would then have to suffice for the country's needs. The whole problem lies in keeping the indispensable stocks for this end, without falling victim to exaggeration under the pretext of foresight. In fact, too considerable stocks would hinder in peace-time the possibility of a development of armaments and would increase the costs of upkeep excessively. In the contrary eventuality, the army, should war break out suddenly, might find itself unprepared to undertake any action on a big scale. It might very well happen that before even having put into action the works that were fully prepared for mass production of material, before they even started serial production of armaments, the most modern prototypes of which would have been prepared in peace-time, the war would be finished and lost.

Thus it is of capital importance to determine the initial supplies necessary for the mobilization and the first period of active operations and then to assure the regular flow of supplies by means of industrial production.

5. THE MORAL AND POLITICAL MOBILIZATION. CONCLUSIONS

A plan of mobilization would not be complete, however, if it did not foresee all the measures to be applied

for maintaining intact the moral forces of the nation. It is well known what ravages skilful propaganda can make, and what influence it can exercise on public opinion, under the cover of humanitarian slogans, in demoralizing the adversary. Germany made use in this respect in 1914–1918, of two institutions controlled by the Minister of Foreign Affairs and the G.H.Q.: the *Zentralstelle für Auslandsdienst* organized in 1914, and the *Kriegspresseamt*, created in 1915. In France, *L'Alliance Française* rendered the greatest services at the beginning of hostilities. In 1917 the *Union des grandes Associations françaises contre la Propagande ennemie*, was founded. Lastly, the services of propaganda, assigned to the Ministry of Foreign Affairs and *La Maison de la Presse* were centralized in a general Commissariat of Information and of Propaganda, opened by Clemenceau in May, 1918, in which well-known writers and the most distinguished scholars collaborated.

A real model of propaganda on the grand scale was the British organization, which extended over the whole of the British Empire, the neutral countries and the enemy countries. Directed at the start by the *Central Committee for National Patriotic Organization*, it was supplemented in 1917 by the *War Aims Committee*, particularly entrusted with the task of countering defeatist propaganda inside the Empire. It seems incontestable that the Ministry of Information which included a special service for foreign propaganda, directed by Lord Northcliffe, contributed to the undermining of the morale of the Austrian army on the Italian front. Nor should we underrate the effect of the slogans, formulated in 1918 by Wilson, which

aimed at the liberation of the German people from "Prussian militarism" in establishing the guilt of Imperial Germany.

The pamphlets spread in great quantities on the front by aeroplanes and small balloons were an effort to reach the combatants directly.

The multiplicity of the fronts of attack, in a war of movement, the diversions in the rear of the combat units, lend themselves particularly well to the working of enemy propaganda, which tries to foster and support revolutionary movements among the national minorities and in the workers' centres. Organizations such as the G.P.U. in the U.S.S.R., the S.S. in Germany, and the Fascist militia in Italy are particularly intended to paralyse its effects. It is probably quite in their line that all the countries having a dictatorial regime should use great efforts in the defensive and offensive organization of their propaganda; the democracies, because of their institutions, are less adapted to it. The means put into action for maintaining the moral strength of the population, because they are based on the legitimate sentiment of freedom of the citizens, are more complex there, and require more skill.

It seems to result from this rapid survey of the manifold problems which national mobilization involves in our time that only the countries which have taken, in time, the necessary measures, both from the military and civilian point of view, will be in a position to resist a modern war. The difficulties, however, of an adequate preparation of national defence grow from day to day, for they tend to become identical, as we have seen, with all the aspects of national life.

It follows from this that the plan of mobilization applies in detail to all branches of public administration, represented by the different ministries.

The general direction, on the contrary, as well as the plan of the whole of economic mobilization, rests with the head of the government whose exclusive prerogative it is; his closest collaborator is the Minister of War, and his technical adviser, the general chosen to be the commander-in-chief.

Poor and weakly industrialized countries are thus compelled to devote, in peace-time, a proportionally more important effort to their mobilization. Equally prepared, the rich countries having an extensive network of communications and a highly developed industry, can mobilize more quickly and more intensively. They can, according to circumstances, operate mobilization, general, partial or gradual, either secretly or quite openly, during the period of political tension.

The present time, in this respect, presents few analogies with the period preceding the 1914 war. The elaboration of a mobilization plan can only be made at the cost of a precise and judicious preparation in all fields. The fate of victory may largely depend on a *mise au point,* made at the right moment.

REFERENCES

1. The extent of this effort was evidently in proportion to the effectives available, to the demographic conditions of a given country, and to its economic, industrial, and financial possibilities. On a just balance between the two factors depended (and will depend in future) the efficiency and the combat value of

the armed forces. Thus, in the very strongly industrialized countries the administration of human resources took on a decisive importance. In countries like Russia, on the contrary, where the question of human resources did not arise, the supply of munitions and arms became the crucial point of the mobilization.

2. In this spirit, the Italian Government promulgated on 8th July, 1925, a law which makes all the resources of the nation liable to requisition in the event of war. By virtue of this law:

All citizens (men and women), and all organizations are ordered to assist in the material and moral defence of the nation and submit to a "discipline of war." (Cl. 3);

The Government may demand the individual or collective services of all citizens of all societies; also all personal belongings or property. (Cl. 9);

In view of the defence of the State, the government can make use of these provisions, even before a mobilization. (Cl. 15).

3. The starting of war production takes the longest time, for it demands a transformation of the machine tools and the recruiting of a specialized personnel for every branch of production, the laying out of the workshops, the supply of raw materials and the gradually improved means of production, and, finally, serial production.

An industrialist who transforms his production in peace-time needs at least six months before attaining a maximum output. Thanks to the help of the State, we may count three months as an average, but we are assured that the Germans would not need more than forty-five days for starting their war production.

4. This is the case in almost all the countries, with the exception of reinforced covering divisions and of the rare units maintained as war effectives (such as the divisions of the Reichswehr and of the regular Soviet Army).

5. Dr. Adolf Gaspary—*Wirtschaftsstrategie and Kriegsführung*, Mittler, Berlin, 1932.

6. Other countries seem to be setting out on this path, not to speak of Poland, where the war industries are State-owned, which puts them entirely apart from any private interests and allows them to serve exclusively the interests of national defence.

CHAPTER V

The Role of Surprise in Modern Warfare

1. DEFINITION OF SURPRISE

IT IS well known that strategical surprise lies in leaving the enemy in the dark as to the zone of the offensive long enough for him to have little time left to reinforce it by substantial reserves (including the strategical reserves of the High Command).

Tactical surprise lies in dissimulating the point, the day, and the hour, and all the circumstances of the opening of the attack in such a way that the enemy is not able to adapt to it the plan of local defence (his fire is badly co-ordinated, his concentrations of counter-fire fall into an empty space, the first line is surprised before starting the checking-fire, local reserves are prevented from intervening, etc.).

Technical surprise lies in employing machines still unknown to the enemy (tanks, gas, aeroplanes, etc., of a new type).

The ideal thing, of course, would be to achieve complete surprise in every sphere of action.

2. SURPRISE DURING THE 1914–1918 WAR

During the first period of the 1914–1918 war, surprise was relatively easy in view of the rapidity of changes in

the situation and of the absence of serious preparations. The Germans were thus surprised by the counter-offensive of the French Fifth Army at Guise (August 29th, 1914) and by the appearance of the French Sixth Army on the Marne (September 5th, 1914).

During the positional warfare, from November, 1914, to the end of 1917, the attack on organized positions demanded long and important preparations which aroused the enemy's attention a long time in advance; hence an absence of strategical surprise (the Nivelle offensive of April 16th, 1917, and that of Joffre of September 25th, 1915, the German offensive on Verdun of February 21st, 1916).

The preparations of the artillery which sometimes lasted several days in view of the need for the previous destruction of obstacles, excluded tactical surprise (Somme, 1916). The enemy had plenty of time for counter-measures and the reinforcement of his positions. The results of the attack were thus nil, or at any rate limited.

In the course of the semi-mobile warfare of 1918, most of the relevant sectors of the various fronts were already totally equipped; the preparations were short, strategic surprise became possible. Thus the Germans succeeded in strategical and tactical surprise in perfecting an artillery preparation reduced to a few hours only (the work of Colonel Bruchmuller),[1] thanks to gas. Lastly, the Allies suppressed the artillery preparation or reduced it to a few minutes thanks to the tanks (Mangin, July 18th, 1918).

Towards the end of 1918 certain experience had been acquired on both sides and certain measures to ensure secrecy had been taken; bases were being concentrated at

night, neutralization by gas and the use of tanks had replaced artillery preparation; thus it led to the resurrection of tactical surprise, which lies in improvising, at a given point, a sudden attack entailing brisk and rapid progress.

Surprise on the battlefield, however, remained a difficult problem to solve by reason of the slowness with which the concentration of armed forces was effected, and of the difficulties presented by the choice and the preparation of starting positions. Only in exceptional circumstances were starting positions favourable for surprise found, e.g. in the forest of Villers-Cotterets, from which Mangin started his counter-attack on July 18th, 1918.

3. STRATEGICAL AND TACTICAL SURPRISE IN MODERN WARFARE

In modern war, surprise would be the rule in planning a battle. Modern armies equipped with the most perfected technical means which would be used with much more skill than during the World War, would lend themselves very well to this type of operation. Motorization would allow the rapid concentration of the forces. Tanks and the air force might make artillery preparation superfluous. It would also be advisable to lay out the terrain in advance in view of offensives on a grand scale; besides, it has become possible to conceal at relatively great distances from the battle-front dumps of material and of food-supplies; the transport of material in this case would be made exclusively by motor-lorries. Conveniently used, smoke-screens allow the manœuvre to be camouflaged even in open terrain and enable one to undertake all sorts

of operations in daylight, in spite of the enemy's artillery fire. Under this screen, mechanized brigades comprising heavy and powerful tanks would try to break the enemy front, using, to the full, the destructive power of these machines. The light tanks would then move into the breach, after which the mechanized cavalry will intervene in order to exploit the advantages obtained. Masses of bomber aircraft could powerfully support an operation of this kind. The manœuvres and the regrouping of armies would have to be effected with the greatest rapidity. In transferring, at once, motorized and mechanized units to another sector of the front, the attacker would again try to surprise the adversary and cause his complete dislocation. Such might be the development of the fighting against organized positions. Attacks of this kind succeeding each other in time and in space, linked together as an organic whole, will recall the method used by Marshal Foch in 1918, with the difference that material will be available which the Allies did not possess at that time. Since they are possible against organized and even very strong positions, such attacks, precipitate, as a rule, would be easier and even more efficacious in an unorganized terrain and in mobile warfare. They would always aim at the dislocation of the enemy's forces, in depth and in width, then at the destruction of the dislodged enemy elements, if possible by reaching their flanks and their rear.

A modern war will thus consist of violent and unexpected actions which will be likely to break down one of the combatant parties and in particular the side that may have been unable to organize itself in peace-time.

4. TECHNICAL SURPRISE

Technical surprise has always had the greatest influence on the evolution of war in accordance with the importance and the efficiency of the new armaments and of the inventions relating to them. During the Crimean War, the French infantry, armed with rifles with a grooved barrel, silenced at 800 yards distance the Russian artillery whose full bullets were inefficient beyond 1,000 yards. The Russian infantry, armed with guns with rifled barrels, were not in a position to pit themselves against the French infantry. The inferiority of the infantry fire of the Russians contributed considerably to their defeat, among many other factors. The Prussian artillery in 1870, very superior to the French artillery from the material point of view, similarly exercised an influence that could not be counter-balanced.

One of the elements of surprise prepared by the Central Powers was, at the beginning of the War, the massive use of heavy artillery.

Technical surprise occurred several times in 1914–1918, when the belligerents used, for the first time on the battlefield, the weapons newly created by technical science. Such was especially the action of the German gas, tried out near Ypres, in 1916. The same thing happened with the use of the French Spad aeroplanes, in 1916, in the battle of the Somme, and later with the use by the British, near Cambrai in 1917, of tanks grouped in great numbers. These surprises were effected with the help of new technical inventions, specially adapted for the battlefield, that is to say, for attack. If they did not achieve direct and decisive results, it is solely because they were not applied

on a large enough scale to obtain successes on a sufficiently wide front. Besides, the troops who used them were not sufficiently prepared to exploit, at once, the results achieved. In this way we can explain, particularly, the failure of the German attempt at gas attacks in 1915.

But none of these technical surprises will probably equal those which modern warfare will reveal.[2] The decisive element in the efficacy of a new engine of war is the absolute secrecy which must be guarded even during serial production. Only then does all the improvement or renovation of the technique of war become a real danger to the adversary. Surprise can, in this case, deal a mortal blow to the country where industry is not able to ward it off and which is not able to reply in time by providing itself with a new invention destined to neutralize that of the adversary. We must say, however, that even in cases when the production is effected exclusively by the State arsenals, it is frequently impossible to guard a secret of this kind. In default of an international control, the efficacy of which would be questionable in every country resolved on war, the intelligence services seem likely to succeed in lifting the veil in many cases. It might also happen that certain preparations might be revealed by the indiscretions of the Press and of the Parliament, but, unfortunately, this as a rule happens more often in the democratic and pacifist countries than in others. It is beyond doubt that Germany, in particular, devotes all her efforts to exploiting her modern industrial outfit with a view to war and technical surprise. Her pocket battleship, which surpasses in power all units of the same tonnage in the world, offers a convincing proof of this.

German science has always excelled in this kind of in-

vention. The Germans have shown themselves masters in the art of the technical preparation for war. It would be dangerous to underestimate this. Did not the most competent technicians think it exaggeration, at one time, to assign to the submarine any important role as a weapon of war? It is only too well known what resulted from this. The greatest caution in this respect is more than indicated for the future. And above all with regard to the eventuality of an aero-chemical war.

In the course of the last war, aviation was not an arm particularly adapted to surprise. It was closely connected with aerodromes situated very near the front, grouped almost always in the axis of the operational range of the aircraft and the lay-out of which could not escape the air observation of the adversary; its very limited range of action was the cause of this.

It will not be the same in future. The rapid development of civil aviation has brought with it the laying-out of numerous flying-fields which would render the greatest services to the air force in case of a war, especially in countries where the civil air-transport companies are subordinated to the control of the government (U.S.S.R., Germany, Italy). The constant growth of its range of action, the progress of communications which assure the liaison of the squadrons at great distances with the combatant units on the battlefront and with the command, have partly liberated the air force from its ground servitude, increasing its freedom of action. It now can concentrate with ease inside the country. Massed at will at a central point or spread over a great surface, it can escape the enemy reconnaissance and becomes, in consequence, an important element of surprise. The possibilities in this

field will be the greater as the aircraft of the future will be able to land on every sort of ground, and it will become possible to take machines to pieces quickly, in order to hide them from the eyes of the enemy. We can also foresee the eventuality of massive offensives of numerous air fleets, intervening before the official declaration of war.

5. BACTERIOLOGICAL SURPRISE

The most decisive surprise in modern warfare would undoubtedly be a physico-chemical attack.

The chemical weapons appear particularly efficient as a means of surprise. We know to-day certain gases the application of which does not require either a favourable wind or dry weather. If we are to believe the revelations of Messrs. Haber and Hanslian, the methods of a gas attack have undergone a radical transformation. They are no longer dependent, as in the past, on particular atmospheric conditions and they can be used without heavy and numerous machines. It follows from this that gas will play an important role of surprise not only in static warfare but also in mobile warfare.

The mass application of gas would completely change the aspect of war. Its influence on the organization of the army and on military operations can only be compared to the transformation caused by the invention of gunpowder.

In the course of an inquiry made by the League of Nations on this subject, the experts and the members of the commission appointed for this purpose admitted unreservedly "that chemical warfare constitutes a menace both for the combatant units, strictly speaking, as for the whole nation, for its civilian population, for its riches and all its vital resources. . . ." It results from this, in General

Buchsineck's view, that "every consideration on the subject of future possibilities should take into account the fact that we shall have to wage war with the whole mass of the enemy nation. . . . Modern warfare breaks away from the principle according to which every effort should be directed against the enemy army. . . . The aim of a future war is the whole of the enemy nation, and the theatre of war is the enemy territory over its whole area," [3] and for Major Soldau: ". . . war means more than ever before a struggle for life. Modern war for national existence will no longer be hampered by agreements and clauses, nor will it know any moral restraints. The chivalrous wars belong to eras where battles of professional armies were fought. These are no longer thought of at a time when nations fight for their existence. While to-day the nations, after the terrible experiences of the last war, cloak themselves in the divine symbol of human nobility, in the coming war they will be scraps of paper, as were similar obligations during the world conflict of nations." [4]

The Third Reich is preparing feverishly to put this doctrine into practice. Its scientists and philosophers openly and publicly glorify war without mercy against the civilian population.

We know very well that individual and collective protection against gas is extremely difficult. Gas-masks have only a limited capacity of absorption. They protect the organism only against a certain kind of gas. Against all the others their filter is useless. It follows, therefore, that for years inventions relative to gases and to gas-masks have been playing a sort of hide-and-seek, the issue of which may constitute the tragic surprise of a modern war.

The very near future will doubtless bring important

surprises concerning tactics in chemical warfare. There apparently exist to-day irritant gases still secret which penetrate, in spite of the mask, the respiratory organs of the soldier; they compel him to put away his mask; at that moment other poison gases are to cause his death. The studies and research made to find a mask or overall covering the whole body against known and unknown gas have not yet given any satisfactory results. Should these studies be successful, the country which discovers this universal mask—and after all it is only a question of time and of appropriate technique—would assure itself at one stroke of a crushing superiority over the possible adversary.

Bacteriological warfare, solemnly and absolutely forbidden by the League of Nations in 1929, has not been, until now, taken into serious consideration. According to the opinion of Professors Pfeiffer, Bordet, Madsen, and Cannon, the germs of epidemics do not constitute a dangerous weapon. It is possible, in fact, with the help of preventive means, to check every epidemic quite rapidly and efficiently. Although we cannot foresee the future, bacteriological warfare remains hypothetical for the moment, even though the Germans envisage its possibility. The only consideration, in fact, capable of preventing its application, is the contamination to which those who apply this weapon would be exposed. Their own country and their own troops might fall victims to illness. This danger would be greater in mobile warfare than in a static warfare. If there were some means of avoiding contamination, there is no doubt that this atrocious possibility would have to be taken into account. The contamination of wells and springs with microbes of cholera,

plague, typhus, and the use of shells filled with such microbes, would be capable of causing terrible hecatombs. We cannot be too careful in this respect. Preventive measures such as collective vaccinations of men and animals should be foreseen in order to avoid the spreading of epidemics. We must take particular interest in the question of hygiene in the army and among the population, who will also constitute an important part in national defence.

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1. *See* Colonel G. Bruchmüller—*L'Artillerie dans l'Offensive en Guerre de Position* (*Die Artillerie Ceim Angriff im Stellungskriege*), Berger-Levrault, Paris, 1932.

2. Cf. especially in the Field Service Regulations, Vol. II, 1929, the following passage:

"During the war, surprise is the most efficient and the most powerful weapon. Surprise consists in creating a situation for which the enemy is not prepared. It results in moral, physical, or material ascendancy. The secret obtained by dissimulating or disguising one's intentions, the use of new weapons or a new use of the existing ones, the speed of execution, such are the means offered by surprise for obtaining the superiority over the enemy."

"To obtain surprise, mobility is needed."

3. General Buchsineck—*Der Krieg von Gestern und Morgen*, 1930.

4. Major Soldau—*Der Mensch and die Schlacht der Zukunft*, Berlin.

CHAPTER VI

The Plans of War

1. THE SETTING UP OF PLANS IN VIEW OF A MODERN WAR. THE PLAN OF WAR

THE total character of modern conflicts, the probability of a struggle of coalitions, the continuity of national policy, the principle of security for the country above all, the vital interests, the strength and the weaknesses of the State, are the essential elements which will prompt the national defence to prepare a plan of war.

The task of working out the military part of this plan within the framework fixed in advance by the government will fall to the High Military Committee. The government will co-ordinate this plan of military action with their political and economic intentions. As nobody can exactly foresee the character nor, most of all, the vicissitudes of the future armed conflict, the plan of war will be confined to general provisions so that it can be adapted later to the circumstances.

Among the factors which have a foremost influence on the working out of war plans, all the States, of necessity, give important consideration to their alliances.

But military and political agreements are in themselves nothing but documents to put away in the archives, if they do not constitute a firm moral engagement for the

parties to them, and are not based on their mutual and positive interests.

The "reversal of the alliances" which took place in the middle of the eighteenth century, and the treachery of the Saxons during the battle of Leipzig, are striking examples of the small reliability of these agreements in the past.

To-day, military conventions are even less sure and offer even less guarantee of stabilization than political agreements. The possibility of their application depends on the preparations made in peace-time. But, in order to proceed to this preparation, we have to employ resources difficult to obtain; without knowledge in fact of the clauses of the secret conventions and of the obligations which arise out of them, public opinion is generally opposed to the burdens which they entail.

Moreover, military agreements and precise conventions have a manifest tendency to lose more and more of their value. The innumerable conferences and pacts which succeed each other and are ceaselessly modified have accustomed us in international life to a much too frequent revision of international agreements. The governments hesitate more and more to enter into precise and extensive engagements and parliaments disapprove too often of the government's decisions in their ratification. On the other hand, if we take into consideration the difficulties of interior order which would probably arise in more than one country at the outbreak of war, should the obligations imposed by the alliances be fulfilled and should we interpret in a positive manner the *casus fœderis* provided for by the Convention, it is easy to understand

that almost all the States are to-day more isolated than in the past as far as their security is concerned.

During the first days of war, which is the most critical period of all, States will have to count on their own forces, even if they have previously received formal guarantees from abroad.

On the other hand, the present endeavours for international security, so complete and at the same time so imperfect, may even postpone and complicate the execution of the conventions of military alliances. All these alliances are attached directly or indirectly to the Covenant of the League of Nations, which demands first of all a precise definition of an aggressor. But a quick and precise answer to this question, often deliberately confused, would be difficult or impossible to obtain in most cases. The first shots are fired in an almost automatic manner, but each of the parties gives the assurance, in good or bad faith, that it is the adversary who started the hostilities. The discussion which is still being pursued on this subject with regard to the outbreak of the 1914–1918 war offers a classical example of this. The aggressor knows, moreover, how to secure for himself the appearance of right by using more or less fallacious arguments. This is what various German Governments have done in accusing France of having started the hostilities in 1914 by an air-raid over Nuremberg and by entirely forging the legend of ostensible Belgian *francs-tireurs* to justify the invasion of Belgium, as well as the reprisals which they carried out. It follows from this that in elaborating a plan of a possible war, every government will have to admit that his allies, if they intervene, will do so of neces-

sity after a certain delay. They will have to adapt their plans to this eventuality, to limit their initial intentions and take all necessary measures to realize them by their own forces, in cases where their allies could or would not fulfil immediately the agreements signed.

Apart from security which is a permanent need, every war has as its object the defeat of the adversary. And so the government and the High Military Council have the duty of stressing this aim in every concrete case and defining the means and the methods which will lead to its realization. The latter will be neither simple nor easy.

In 1914, the Germans thought that they would triumph over France before Russia would be ready to enter the war—and they failed. On the other hand, Hindenburg and Ludendorff worked out, in August, 1916, a plan according to which the Central Powers had to "finish off Roumania while maintaining their positions on all the other fronts; create in all the countries bound by the Four-Power Alliance new combat units and increase war production. . . ." They achieved this only incompletely.

And so, in our own time, Poland should have a very detailed plan of war and try, thanks to the judicious dispositions of this plan, to compensate for the superiority in numbers of her presumed adversaries. As geographical conditions will not on the whole be favourable to her in the event of a war, it is important that the government and the military leaders of the war should endeavour to guard against these natural disadvantages and even turn them to the benefit of their country.

It will be necessary, too, in spite of her relative disadvantages, for Poland to count mostly on her own strength. She should thus try to achieve a better organiza-

tion of her army, a greater capacity of mobilization, and the possibility of carrying out concentration more rapidly. The good training of the troops and their equipment in technical material and lastly—and above all—the moral, political, and social unity of the Polish nation will play by no means the least important part.

The moral and material strength of the country constitutes in fact the surest guarantee of its security. When the Entente Powers occupied, in 1922, the valley of the Ruhr, the Germans, in spite of their evident over-excitement, did not try to oppose it, because the Entente had as justification for its action not only the formal text of the treaty but also its strength. On the other hand, the Italians, in 1923, could bomb with impunity the island of Corfu, because Greece had not the necessary means to retaliate.

While these facts stress clearly the importance, for each country, of having its own armed forces and stress, too, the relative value of the political and military agreements, they do not obviate the necessity of being carefully prepared for war from the political point of view. It is not only a matter of concluding, whenever possible, formal alliances. Not less important is it to assure the friendly neutrality of countries capable of giving, in case of war, material support to the belligerents either by supplying their armies with munitions and with manufactured goods or by supplying them with the raw materials indispensable for war production. This is a particularly serious problem for the countries which can only satisfy their own needs in this direction in a very small degree. The countries that are completely independent in this respect are very rare exceptions, if there are any such. On the other

hand, not all of them are able to replace what they lack by "ersatz" products in which the Germans above all excel.

When a country is likely to have many adversaries at once, its government should, in working out its plan of war, determine the adversary to be feared most, the adversary who is to be checked and who is to be overcome in the first place. In the studies which will naturally follow the plan, we shall have to examine the nature of the terrain, the attitude or the form of warfare to adopt, and the relation of strength. For example, Poland should not, in principle, base her strategy on the wearing out of the enemy; for, in the event of a prolonged war, time would work against her and in favour of her adversaries. Such was her case until now with regard to Russia, where the mobilization and the concentration of troops have been always performed slowly. For some time yet, but for a rather short time, it will be the same with regard to Germany.

It is very difficult to envisage all the eventualities of war and to take into account all the interior and exterior factors which have their parts to play on this occasion. One cannot determine *a priori* the decision which would be the most sensible for each of these multiple hypotheses. The government and the command will often be compelled to provide for the most probable turn of events and be content with the least controversial solutions.

It is difficult especially to estimate with certainty the strength of the adversary, because of the secret armaments and of the differences existing at present between the various military organizations. Formerly, before the introduction of the system of trained reserves (Prussia,

1806–1813) it was sufficient to be informed in a general manner on the financial resources and on the effectives of the enemy in peace-time in order to estimate exactly enough the forces which he would put into line in war-time (taking for granted that the armies increased very little with the mobilization).[1] Each country, as a general rule, adapted its efforts to the military positions of the adversary such as it knew them; it based its plan of war on the relation of strength thus defined. The surprises in this respect were rare, for the armies put into line represented in general the whole military strength of each country, and it was not possible to reconstitute them in case of a defeat, because of the total lack of trained reserves.

These conditions are quite different to-day. War, as conceived in the eighteenth century, with its limited aims and its strictly defined framework, grew out of date when the occupation of a province or the taking of even a very important fortress ceased to decide the final result. To-day there is, moreover, an enormous disproportion in almost all countries between the peace-time effectives and those of war-time; and what is more, to-day the nation as a whole is involved in the conflict and stands ready in its entirety for the mortal struggle which will decide the question of its very existence.

Modern warfare which stresses to the highest degree the national and sometimes racial (?) antinomies, raises for the belligerents a problem of life or death. It engages in conflict all the resources of the human groups, from the economic, industrial, and financial points of view. And, therefore, its general plan to-day depends, in the first place, on the government. It has been so from the time

when the mobilized forces started to absorb all the energies of the nations.

It is important to foresee, or rightly to estimate, the general plan of warfare, the consumption of war-material, munitions included, and their replacement. We should try to avoid most of all the errors of under-estimation committed at the beginning of the 1914–1918 war, for it is known that the lack of munitions paralysed the Germans after the Marne, the lack of weapons the Russians in 1915, the shortage of men the British at the beginning of 1918.

Should a similar crisis be repeated in future, it would entail consequences which would weigh heavily on the final outcome of the struggle.

We shall understand all the importance of the problem if we take into account the fact that in 1918 each of the Great Powers engaged in war consumed on the average 200,000,000 rounds of cartridges for rifles monthly and had to produce about 100,000 shells a day. To face these considerable and always growing needs we should have to provide for a formidable development of war industry.

It is possible, however, that a modern war would entail a small consumption of munitions, but this is not yet known. Besides, the combats which would take place in the initial stage would be marked by their intensity and extreme violence. Thus it is important when working out the plans of war that the stores and the supplies of material should be taken into account.

The outline of the war plan should be decided *ne varietur* by the government in order to enable the commander-in-chief to study it and to specify as much as

possible the principal elements of his plan as to the use of the available forces.

The latter should be limited only to the essentials and not go beyond the almost certain provisions concerning the political necessities of the country and the military situation. Too detailed indications would not take into account the unforeseen factors and would hamper the later adaptation to the circumstances of the moment.

If the conflict were to be prolonged, it would be indispensable to develop and to complete the plan of war. On the other hand, the trend of military policy may be modified during the hostilities in accordance with the events.

The government would fix the new aims of war and would at the same time assure the commander-in-chief of the means necessary to attain the results aimed at; but it would leave him complete freedom as to the choice of the means for their realization.

Differing in this from the military plans of former times, every plan of war should consider to-day the enemy's air attacks which will start maybe only a few hours after the outbreak of hostilities, or even simultaneously with it. Independently of the role attributed to the air force by the doctrine of warfare of the particular country, we can state that each of the adversaries would try to launch against the other precipitate air attacks, in order to paralyse his mobilization and the concentration of his forces and to check the development of his first operations. It is thus important to foresee in advance the dangers of such attacks, their probability, their range of action, their strength, and their efficiency, and consequently to work out a plan with a view to the organization of the active

as well as passive air defence of the territory. Should this be neglected or should the superiority of the enemy air force be very marked, the aggressor could benefit by it and exercise a particularly efficient air activity at the very start of hostilities, i.e. at the most critical time. In particular one should assure the adequate protection of important mobilization centres which often also have a great value from the industrial and political point of view, and of the large concentration transports which are generally very vulnerable to air attacks. Lastly, we should attach no less importance to the defence of the principal national lines of communication with foreign countries, the possible destruction of which could hinder considerably the execution of the country's war plan.

2. THE PLAN OF CONCENTRATION

The plan of concentration has as its object the assembly of the mobilized forces, under the protection of the covering troops. It demands the principle of the distribution of the units of the armies according to their missions. It serves as a basis for the establishment of plans of transport.

All this work would not last long and would not be complicated and the preparation of transports would not present any great difficulties if the plan could be firmly fixed in peace-time and applied automatically in time of war (the Schlieffen plan, 1914).

But such detailed provisions have never been certain, and they are becoming ever less so, because of the role in warfare of unforeseen factors, the reactions of the enemy and the speed of the modifications of the battle order in modern times. Thus we should always foresee and prepare

possible modifications in the arrangement and corresponding variants of the transport. And so, for instance, the Seventeenth Plan foresaw that the Fourth Army (of Lanrezac), normally concentrated as a reserve force in the region of Sainte-Menehould, might be, if necessary, moved towards the Meuse north of Verdun, and come to the front line in Belgian Luxembourg. It was the only foreseen and very inadequate variant, to face an extension of the German right flank (to the south of the Meuse and of Liège). In our own time the plans should be more supple.

However, the command can prepare in peace-time only a limited number of variants, and this for technical reasons pertaining to the railways. As a rule, a minimum general plan valid in any circumstances is established and only the principal variants are prepared for the most probable eventualities. If, when the time comes, the circumstances demand that the concentration transports should undergo modifications not foreseen in peace-time, we shall have to have recourse to improvised transports or transports "in the course of operations," which take much longer to effect than the prepared transports, and run the risk, besides, of causing miscalculations.

The plan of concentration should be conceived in such a way that the adopted strategical deployment should lend itself to all manœuvres deemed opportune by the commander-in-chief when facing the actual situation. Thus, the German G.H.Q., in July, 1870, stopped the transports originally intended for the Saar in the region of Mainz; it could then transport its Second Army towards the Saar under the indirect protection of the First Army concentrated at Wittlich-Trier; incidentally, it did

not bring about either the concentration of all its forces, or the decisive battle planned on the Saar.

Since 1870, the masses of troops to be concentrated are even greater than in the past. The difficulty is to assemble them judiciously into a mass, well joined, supple, and adaptable to circumstances.

The disposal of the concentration is determined by the physical and political geography of the country, as well as by the intelligence regarding the enemy who has to be fought. Within these limits it corresponds to the commander-in-chief's intentions of manœuvre.

The problem is relatively simple when the threatened frontier is the only one, and when it is narrow (Belgium in 1914), or when the plan is based solely on one very well-defined hypothesis (the Schlieffen plan). It becomes complicated when one has to defend extensive frontiers of an immense length and to face various adversaries (the Conrad von Hötzendorff plan in 1914).

In the latter case it is advisable to limit the forces assigned permanently to each front to the strictly necessary minimum, in order to constitute a general reserve as big as possible, not transferred *a priori* to the various theatres of war (as were the reserve of Conrad von Hötzendorff in 1914), but preserved in a central position and maintained available until the time when the situation becomes clearer. All measures should be taken, and there lies the great technical difficulty; to transport the reserves when they are wanted to the front considered to be the most important one; as in September, 1914, the Austrian reserves were moved from Serbia to Galicia.

It might also be pointed out that in the secrecy and the speed of strategical movement now, even more than

in the past, lie the foremost conditions of success; the 1914–1918 war proved this clearly.

3. THE PLAN OF COVERING OPERATIONS

The differences in the periods of concentration between the belligerents of 1914 were not very great. They were of a few hours, or at most of a few days, if exception is made for Russia, where the concentration lasted several weeks owing to the vastness of that country.

At the present time this would no longer be the same. The delays would be extremely variable, being dependent on the military system adopted by each country, on the concessions made to the pacifist tendencies, and on the possible appeal to the arbitration of the League of Nations.

And so in Europe certain countries have adopted a partial disarmament or a system of militias, while others are strengthening their military potential by all available means.

It is clear that the countries which have a slow mobilization run the risk of finding themselves in an extremely dangerous position, unless their geographical situation is very favourable. Even the best-prepared countries might find themselves suddenly paralysed by an aggression of motorized units and of the hostile air force.

It is advisable to have an efficient system of covering operations strictly adapted to the necessities and the possibilities of the country, and having regard to those of the probable adversary.

In principle the plan of covering operations should be conceived in such a manner as to assure both the tasks assigned to these operations which are: (*a*) to cover the

mobilization and the concentration of the armies; (*b*) to cover the national territory.

The first task (*a*) is the more important at present as it is necessary to cover the mobilization of the whole nation which may take from a few days to several weeks (a gradual mobilization), and start at the first signs of political tension. On the contrary (*b*, second task), the time during which the concentration of the armies has to be covered (that is to say, the protection of the unloading of the troops and of the strategical deployment in the proximity of the frontier) is rather short; then security is assured by the armies themselves, to which the covering units belong.

Lastly, the covering of the national territory is a new task, unknown in 1914. It is indispensable, for the resources in man power and in material of the whole nation are from then on to be used for war purposes. If any measures had been taken to this effect in 1914, France could, perhaps, have kept the Briey basin and the Nord mining and industrial region at her disposal during the hostilities.

The means at the disposal of the covering operations will be, as a rule, the active troops stationed in the vicinity of the frontier,[2] capable of occupying their positions within a few hours; the frontier guards or "*Grenzschutz*" or formations of local reservists called up at once and posted within the shortest time (twenty-four hours); in general, all the air force and all the cavalry; lastly, the police, the customs officials, the forest-guards, etc., entrusted mostly with the task of surveillance and policing. These units will constitute the basis of the covering force.

According to the information as to the enemy, this sys-

tem may seem adequate or inadequate to the needs. In the first case, we shall be content with a service of surveillance and with the closing of the frontier whether or not supported by the active frontier garrisons and by small units of local reservists called up in accordance with the need. In the second case, we shall have to reinforce the men available by active units called upon from the interior of the country or by a more considerable call-up of reservists.

In these circumstances, the performing of the covering operations cannot be automatic and rigid as in 1914. It is the task of the government and must be left to a political decision, with a view to ensuring security and at the same time avoiding the upsetting of the national life and of international relations.

In a period of political tension, the covering precautions will be ordered by military districts under the orders of the War Minister; in the event of a general mobilization the covering will constitute the first echelon of the armies under the orders of the commander-in-chief.

The attitude of the covering operations is defensive in principle. In fact, however high its effectives, they will always be too weak compared to the extent of the frontiers: either the density of the front will be too weak, or the reserves will fail.

The construction of permanent fortifications (very onerous in some respects) allows a reduction in the first-line effectives: with the saving in men thus realized, it would be possible to constitute more numerous covering reserves, motorized or mechanized, if possible, for greater mobility.

The reinforcement of the covering and the economy of

effectives were the dominant preoccupations of Marshal Pétain, when the victor of Verdun worked out, after the Great War, a plan for the permanent defensive organization of the French frontiers.

An intelligence service and a very vigilant air force would be indispensable to direct the covering reserves on the threatened sectors.

Thus constituted and organized, the covering should assure a fierce resistance at the front and vigorous counter-attacks; it would be capable of checking the enemy so long as he had only limited strength. To this effect, whenever a partial mobilization of the adversary takes place, the command ought to insist that the government in reply immediately takes the same measures, otherwise there would be the danger of exposing the country to a catastrophe.

It is necessary, anyway, in case of an alert, to prepare in advance the blocking of all the roads of access to the frontier, in order to avoid the invasion of enemy units (mostly of the cavalry and of the motorized detachments) into the national territory; the issuing of these orders is one of the first measures of the covering in general.

Moreover, the government will state in peace-time, and in conformity with the general plan of war, which are, according to them, the districts particularly to be covered. Such districts are, for example, the important economic and industrial centres which should not fall, even temporarily, into the enemy's hands.

The security aimed at with the help of the covering could, in certain cases, be obtained by a preventive offensive against the enemy by concentration; [8] but it is a diffi-

cult thing to achieve, for it demands an army ready to start the campaign and full freedom of action from the political point of view.

The same results can also be achieved at a smaller cost by the occupation of the defensive positions in front of the national frontiers. It is difficult, however, to prepare in detail and in peace-time a defensive action of this kind, from the military as well as from the political point of view. Not often is it possible to foresee events clearly in anticipation. The situation might occur unexpectedly or even happen when, after an offensive in foreign territory not crowned by success, the army starts organizing itself defensively.

The normal solution consists in occupying defensive positions in national territory, as near the frontiers as possible. It is a sure and safe solution, but certainly less advantageous than the preceding ones. It will work in the majority of cases, mostly in countries weakly armed, while the powerful nations may choose the first or the second method.

4. PLAN OF CONCENTRATION TRANSPORTS

The troops mobilized in the country must be transported from garrisons inside the country to the concentration base. To do this, it will be necessary to load millions of men and millions of tons of war-material, using the most rapid means of communication, so that this preliminary operation may be accomplished in a minimum of time. In 1914, it was effected in about twelve days (France and Germany), not speaking of the putting into position of the covering troops. In order to perform it

well in such a short time, one must have a powerful network of communications and a plan carefully prepared in advance.

In 1914, the transports towards the points of concentration were made almost exclusively by railway; the roads, or marches on foot were only adopted for units mobilized in the neighbourhood of these points. Railways are an excellent means of transport from the military point of view. One train alone can transport a battalion of infantry or one battery. On well-constructed lines, the average speed of these trains is 15 miles per hour; as to their number, it can vary from 24 to 120 a day on each line according to the arrangements and the number of lines used. Small wonder then that in view of these satisfactory results, the railways became, from 1870 onwards, the principal means of transporting troop concentrations.

The railway has also given innumerable examples of its excellent functioning in the course of operations; for example, during the German offensive in March, 1918, when the British front was broken in the district of Saint-Quentin, French reserves were transported in ten days from the Oise to the Somme by 1,376 trains, not counting the goods trains.[4] During the final period of the War, the military use of railways became extremely important, and the transport of troops while manœuvring increased to proportions previously unknown.

The railway became, in the hands of the High Command, an incomparable instrument of manœuvre, making possible the establishment of defensive fronts or the organization of defensive operations with a speed which was very satisfactory. The requirements that war imposed upon the railway directorate surpassed very considerably,

in the course of operations, all precedents and all provisions made in peace-time. One might go, perhaps, further in this direction, but not very much further.

In fact, transport by rail is not without inconveniences. It lacks flexibility. During the last war it suffered from a lack of co-ordination between the issuing of orders for a strategic movement and their realization, and, in general, a limitation of manœuvre; a too great rigidity of action. Each army depended too strictly on the railway-line which served it; it could not move more than one day's march from the stations, for, if it did, it would only be able to get supplies with great difficulty.

New complications arose with the immense development of the bomber air force and long-range artillery. Aerial attacks are particularly dangerous for rail transport. The railways are delineated distinctly on the terrain. Stations of importance, viaducts, bridges, marshalling yards, junctions, and water installations constitute ready targets for bombs and projectiles dropped from aircraft, even at night. The railway networks thus present a great number of vulnerable points, the destruction of which might temporarily, at least, paralyse the functioning of certain trains and delay transport at a very inopportune moment, or even render it impracticable when needed.

At the end of the War, and above all in 1918, an auxiliary solution was luckily found in motor-transport. Motor-vehicles have been so greatly improved since that time [5] that their part in the future will certainly become greater.

The use of motor-vehicles gives much more flexibility than that of the railways. It is true that its capacity is not so high: a normal train equals, from this point of view, a hundred 3-ton lorries, and it covers in twenty-four hours

about 375 miles, i.e. three or four times more than a convoy on the road. The motor transport is thus mostly destined to make up for the defiencies of the railways. This is the reason why the armies having a modern organization now possess a great number of motor vehicles of varied types: machine-guns on lorries, liaison cars, ambulance cars, light lorries, heavy lorries, tractors on wheels or on caterpillar tracks capable of moving on every kind of terrain, motor-trains, two- or four-wheeled trailers, etc.

The total number of motor vehicles needed is very high. In fact, the transport of one infantry division alone necessitates from 500 to 600 lorries; with light artillery and a very small number of vehicles and horses, from 1,200 to 1,500 are needed. These are large figures. Even the richest countries cannot think of maintaining in peace-time tens of thousands of cars of every type. Thus we have to foresee the requisitioning of omnibuses, lorries, and all the useful vehicles belonging to private individuals. Mechanized units will use in peace-time only their own special vehicles.

On the other hand, columns of lorries, even on short distances, block the roads, which are also used by the mounted units and marching troops.

Transport on tracked motor vehicles, capable of driving either on roads or outside them, across every kind of country, would be a perfect solution of this difficulty. This means offers, besides, the advantage of remaining secret and of serving the battlefield direct. It would be convenient particularly for the countries where the railways and roads are undeveloped. One may consider it the best and believe in its future, but it must be said to-day that

it cannot act as yet for the transport of important effectives or abundant material.

It is supplemented at the present time by the horse-driven transports which are surer, but also slower. Because of this slowness, they will, perhaps, be considered in future as an anachronistic means of transport. For the time being, however, even in the countries where motor vehicles have reached an advanced stage of development, the army continues to use horses, of which every country can requisition tens and hundreds of thousands from agriculture.

River transport, especially when it covers very great distances, is most economical for heavy transport and for the evacuation of the wounded; it is a help that is not to be neglected and its organization is easy and simple, but it is very slow. Sea transport is used during concentration by countries having a navy capable of assuring its safety. Submarine communication is too little developed to enter into consideration at present.

Certain technicians consider that with the continuously growing progress of flying, air navigation will constitute in future a powerful means of transport. For the moment, however, airships, very expensive, very few, fragile, and vulnerable, are not very suitable for this purpose. As to aeroplanes, their capacity of transport is at present very small; in the present stage of technical development an aeroplane of a popular type could not take on board more than fifteen infantrymen. It is quite probable that, in the very near future, giant aeroplanes will be capable of carrying fifty or a hundred men; but these are numbers which would not play any part in modern warfare. Apart from exceptional and episodical cases (small de-

tachments, evacuation of the wounded, colonies) the air transports can play only an occasional part in wars where enormous effectives are engaged.

Each of the means of transport used, railways, motor-cars, waterways and even air navigation in certain cases, has, in short, characteristics specializing it for the transport of certain elements, of personnel or material under special conditions of time and distance. Neither can be neglected. Their application will require utilization in varying degrees according to the geography of the theatre of operations. A plan of transport foresees their simultaneous use and co-ordinates their activity; its provisions entail, in peace-time, the methodical lay-out of communication lines and the keeping of numbers of vehicles of all types inside the country, ready for requisition in war-time.

5. THE PLAN OF REAR ORGANIZATION

The network of roads in countries poor in lines of communications, such as Poland or the Balkans, with all their defects and all their inconveniences, were a real nightmare for the commands during the war of 1914–1918. There were not enough of them to suffice for the needs of the front. They deteriorated rapidly and became, in a short time, quite unsuitable. Very often, too, they were blocked by troops and by convoys of supplies of foodstuffs and armaments which sometimes completely paralysed circulation. These traffic-blocks occurred generally at a moment when a particularly serious situation required that the transport of troops and of war-material should be effected at a quickened pace.

The situation in this respect has improved considerably

since 1918. The use of motor vehicles suited for all kinds of country has greatly reduced these inconveniences to-day, in less well-equipped countries. On the other hand, thanks to recent technical progress, it has become possible to construct roads more quickly and with much greater resistance to wear and tear and to effect their maintenance and repair more rapidly.

Nevertheless we ought not to forget that modern war is possible only with a very adequate organization of the services in the rear, a very well-developed net of communication lines, numerous dumps and yards equipped with material and personnel. This is why the organization of the rear services should be the object of careful preparation in peace-time.

Such organization preoccupied Napoleon. The lay-out of the roads with their halting places, the installation of dumps and supplies, the distribution of the troops chosen to protect them, the organization of the regular re-victualling of the front, always absorbed a great part of his activity when he prepared a new campaign. We must recognize that from this point of view the campaign of 1812 represented for its time a masterpiece of execution. If, nevertheless, the rear services of the "Grand Army" did not always function as was expected, it is because the difficulties of the Russian campaign in 1812 could not be solved with the technical means of the time.

The means are in this respect much more perfected in our own time, but the needs of a campaigning army have also increased inordinately; while in Napoleon's time a few boxes of munitions could suffice, to-day hundreds of thousands of tons are needed.

Because of this, during the World War and during the

conflict between Soviet Russia and Poland (1918–1920), the supplying of the armies was inadequate whenever the railways and the roads were deficient and when horse-driven transports had chiefly to be employed.

The difficulties will increase even more in a modern war which will be, at least at the beginning, a war of movement and of manœuvre; besides, they grow constantly, owing to the increase in the consumption of modern armaments. The enormous consumption of munitions [6] caused by the massive use on the battlefield of automatic weapons and of powerful quick-firing artillery as well as the rapid deterioration of highly mechanized machines and vehicles, demands a service of supplies with a very great output.

The good organization of the rear services conditions the speed and the depth of the offensive progress. If it does not come up to requirements the fire power weakens and the attack prematurely comes to a standstill.

If, during the Manchurian War (1903–1905) the Russian troops were defeated by the Japanese, who were numerically weaker, one of the causes of their defeat was certainly the fact that they fought 4,500 or 5,000 miles from Moscow with the mediocre Trans-Siberian Railway as their vital transport artery, while the Japanese operated at a much smaller distance from their capital and used sea transports.

The World War effected a real revolution in this field. Nevertheless, it did not give any lesson in this subject for it took place mostly in stabilized positions, the organization of which was constantly improved over a period of years. The armies on the offensive were very adequately provided with material, their supplies were within their

immediate reach thanks to the safety secured by the continuous front and by preparation which was always long.

The attack attained thus, in its initial phase, formidable intensity, but it grew weaker in proportion as it was prolonged and as the front removed from the starting base. A reorganization of supplies was necessary before making a new jump forward. Even in 1918 the offensive did not progress more than a few miles by fits and starts, and each of them needed two or three weeks' preparation.

Analogous considerations deterred Falkenhayn from occupying Salonika at the end of 1915. He believed that Serbia and Macedonia did not have a sufficient network of lines of communication for him to undertake such an operation. Similarly, the British, in spring, 1917, began their march towards Baghdad, starting from Basrah in Iraq, only after a year of preliminary preparations, when they had created very powerful rear services by all the means at their disposal.

It is also because of the shortage of roads, of railways, and of all the means of technical locomotion that General Franchet d'Espérey, victor in Macedonia in September, 1918, took almost two months to shift his front on the Danube from Belgrade, which, by the way, in view of the conditions, constituted a real record.[7]

The technical improvements introduced since then could certainly greatly facilitate the functioning of the rear services thanks to the multiplication of mechanical engines and motor-transports on roads in every kind of country. It results from this that offensives will demand a smaller delay in preparation and will not become paralysed as quickly as in 1918. At the same time it will be

relatively easier to operate in enemy territory and to transport armies to great distances.

But no operation with important effectives will succeed if the rear organization presents any gaps. We have, consequently, in peace-time, to complete and improve communications, prospective marshalling yards, stations, stores, dumps, hospitals, and air-fields. This preliminary work would be conducted in such a manner as to equip progressively all the frontier regions threatened, proportionally to the effectives they would have to absorb and to the probable war operations.

The plan of these preliminary arrangements should be established by the Ministries of National Defence which should execute a part of it themselves and should influence the activity of the other ministries (Public Works, Posts and Telegraphs, etc.). The necessary credits should be spread over a number of years, according to the urgency of the various needs, to be achieved at a time when a war seems to be threatening. What cannot be performed in peace-time should be studied with a view to its realization in the period of political tension or at the beginning of hostilities, with the help of units of workers and with all the necessary precautions to assure complete secrecy.

All the important moves of the armies, all the serious modifications in their order of battle would, in addition, demand work of the same kind in time of war, in order to adapt the services at the stopping places to the new situation. This work would have to be permanently renewed especially in mobile warfare.

This organization will always remain a considerable burden. It is undoubted that it will be easier to realize

when the country already is rich and populous, endowed with a powerful industry and provided with an abundant network of communications in peace-time.

This is one of the reasons for the incontestable faculty of adaptation of the great Powers to modern warfare.

The poor countries, inadequately industrialized or badly equipped, will be able to maintain only small armies of a smaller offensive capacity; some of them will not be able to use even their man power reserves over a certain limit.

In confirmation of these ideas, it could already be observed, in the course of the eighteenth and nineteenth centuries, that the Empire of the Tsars was incapable of keeping, before the creation of the railways, an army of more than 200,000 to 300,000 men in a remote theatre of war.

However, the burden on the stopping places and their services, so heavy in 1918, seems to be on the way to becoming easier in future thanks to recent technical progress. Munitions requirements might become less with the use of the new methods of firing, and above all, the tactics of mechanized units. Requirements in the sphere of sanitary establishments in the proximity of the front will become less urgent if the progress of medical science and of surgery allows the possibility of evacuation rather than treatment on the spot. The construction of roads and of networks of communications will be carried out by mechanical means which will ensure an output vastly superior to that obtained at present at an enormous cost in labour.

Generally speaking, the motorization of the trains and convoys will facilitate the direct traffic between the front

and the stores or workshops, which will be more distant but less numerous and more stable. A less pronounced separation of the resources of the country and of those of the armies will also allow supplies to be brought direct from the establishments in the interior of the country instead of creating special ones in the advanced zone or the zone of the stopping places.

Such a transformation, gradually but resolutely undertaken from now on, seems to be indispensable for the rear and other services to be able to keep pace with the accelerated rhythm of mobile war which seems likely to be brought about by mechanized weapons.

6. THE PLAN OF OPERATIONS

Thanks to the plan of war of the government, the main lines and the framework according to which the probable war will be waged are settled in advance; but conditions of the moment will determine the manner in which the operations will be conducted in the execution of these plans.

It is necessary to study the plan of operations as carefully as possible in order to be ready for all eventualities, and not confine oneself to a rigid plan. It is sufficient to quote as a proof the breakdown of the Schlieffen plan, a proof of the error committed in this respect by the Germans.

It is equally true that, once the concentration of troops is performed, the initiative and the freedom of action of the commander-in-chief become very limited. And so his projects and the intentions, which he works out in secrecy in peace-time, should be the basis of the plan of concentration.

It is the commander-in-chief who should direct the operations and, consequently, work out their plan; this is his absolute domain. Entrusted by the government with the task laid down in the general plan of war, he should be able to act quite independently, in conditions chosen by him, and to proceed, in the same way, to the distribution of the means put at his disposal in view of the realization of the end aimed at. His freedom of action within the framework of the general plan of war fixed by the government should not be hampered by any kind of control or restriction. If the results obtained do not seem satisfactory, the government can decide to replace the commander-in-chief, but it ought not to encroach on his powers or intervene in the conduct of operations under any pretext. This method is the only one logically admissible. It has been applied, to quote historical examples, by the German Government to Moltke II in September, 1914, and towards Falkenhayn in August, 1916. It is equally valid for the preparation of a plan of operations in peace-time.

Consequently, the commander-in-chief designate decides in peace-time upon his initial troop dispositions.

He may have the firm intention to maintain the defensive on a certain front, and to take the offensive on some other one beginning on a certain day after hostilities have commenced; but he is content to communicate to the Ministers of National Defence the conditions for the realization of his provisions which are kept secret; for instance, to fortify a certain sector of the frontier; to concentrate an army group in a given region at a given date, etc.

On his directions, the G.H.Q. decides the bases for the plan of concentration and establishes in detail the plan of

transport, without knowing any more about the intentions of the commander-in-chief.

The strategical preliminary concentration of the national army, operated more or less close to the frontier of the country, clearly exercises a great influence upon the first operations of the war, which it directs *a priori* to a certain extent.

Thus the concentration of the bulk of the French forces to the east of the Meuse, carried out in August, 1914, in conformity with Plan XVII, still exercised a retarding influence on the French manœuvre in October, 1914, three months after the beginning of hostilities.

It cannot be otherwise with armies of several million men, in spite of the power of the modern means of transport.

The bringing together of such masses demands long preparations on the part of the General Staff, and the recasting of the plan of concentration in the presence of the enemy can only be made by gradual stages.

Thus the concentration cannot be made without a general intention as to the operation which dictates the initial disposition of the forces and their uniting. The times are no more when a Cunctator could take dispositions for all purposes and bide his time. On the other hand, the projected operations cannot be changed in peace-time into a definite plan of operations, for this would lead straight to a failure similar to that of the Schlieffen plan which was automatic and stiff.

We thus avoid hard and fast schemes, and proceed by prudent reasoning without neglecting any hypothesis. True, it might happen that the intuition of a real genius of war might distinguish a more precise decision *a priori*.

However, it seems that in spite of the legend, Napoleon did not stress his presumption in 1805 so far as to announce, one month in advance: "I shall beat them here." Even he proceeded by the study of different hypotheses, by the choice of flexible initial dispositions and by successive decisions, when the moment came.

In 1914, General Joffre reserved his final decision until August 20th, although his armies were ready to start action from August 18th onwards. In answer to the inquiry as to the defence of the basin of the Briey he declared to the commission set up for this purpose: "One does not formulate in writing a plan of operations; the commander-in-chief carries it in his head." This answer best sums up the method as far as the final decisions of the commander-in-chief are concerned.

The example given by the year 1914 merits our attention particularly because the battles fought at that time were especially characteristic and instructive from this point of view. From the start of hostilities it could, in particular, be stated that the reality of the war, so different from all the conjectures formed in peace-time, as is often the case, upset all plans and projects previously established. And all this happened in that moment on both sides of the Western Front when two over-rigid plans of concentration opposed each other and two projects of manœuvre were too fixed *a priori.*

The Schlieffen plan was characterized by a simple and very tempting conception, but pushed to the very limits of logic. It called for a decision complete and precise in every point; Schlieffen conceived his battle of Cannae as an outline, in which he could conceive neither a hitch nor a failure. He had, moreover, assured himself the maxi-

mum of chances of success by a formidable accumulation of forces at a given point, on the right flank, at the expense of the rest of the front.

It is true that his successor, Moltke II, not having the same temperament of uncompromising dogmatism, had more or less corrected this excess and reduced the strength of the right flank to assure himself of greater safety; on the other hand, the Germans saw in this prudence of Moltke II the mistake that caused the failure of the Schlieffen plan which they thought was brilliant.

However, it must be admitted that Schlieffen laid down his plan on paper, without taking into account any contingency, without admitting that circumstances might influence its execution even ten years later. Moltke was certainly nearer to the normal method of laying down a plan in peace-time.

The mistake of Moltke (and of all the Germans) was mostly in the execution, which he admitted to be automatic, removed from his intervention, in August, 1914.

The German plan of campaign in 1914 was, according to its author, to unfold itself automatically, with each army pursuing the execution of its task without the armies being co-ordinated by the commander-in-chief.

Clearly this failure of the German G.H.Q. was due partly to the precariousness of liaison and communications at that time. However, the German commander-in-chief, had he been even provided with the best communications, would have been helpless in the presence of events, as he did not provide either for reserves or alternatives.

This prevented the Germans from exploiting to their advantage the battle of frontiers and led them to the first

defeat on the Marne. It is true that Moltke's lack of energy caused Germany to lose a great number of trumps which this plan gave her. It is true that the diminution of the qualitative value of the mass concentrated on the right flank of the German front, from which resulted the weakening of the momentum of the attack started from this flank, exercised a considerable influence on the final results of the first decisive battle in which the Germans and the French faced each other. In fact, the opposing side fully profited by these errors and turned the scales in its favour during the first phase of the War. However masterful its conception, the march forward does not come to a head if, at the moment when the commander-in-chief has to concentrate all his energy in order to develop it, this energy fails him. It is not less true that, given the insufficiency of the technical means then available, Schlieffen himself, had he lived and seen to the execution of his plan, would also have met with unexpected difficulties in attempting to adapt this plan of operations to the events which happened in France in the course of 1914.

From the French side, also, an equally deficient plan of concentration was opposed to the Germans. It is true that after having assumed the functions of chief of the General Staff, General Joffre broke away deliberately from the passivity which weighed heavily on the French Army in consequence of the defeat of 1870, and rallied himself resolutely to the Napoleonic tradition. And so he established and, in 1914, tried to realize a plan which in the first place aimed at forestalling his adversary by starting an offensive on a great scale and thus paralysing his initiative.

It was, of course, imprudent to seek straight away a decisive battle with unexperienced troops, among which the active units had a great moral value but had to prove their training, and the reserve units lacked cohesion. A certain amount of temporizing would not have been misplaced in these conditions, the more so as the beginning of a war is always marked by surprise and uncertainty.

However, General Joffre was imbued with the doctrines then fashionable in the whole of Europe on the virtues of an offensive and the preponderance of moral over material strength. He took with a great firmness and determination the serious decision of attacking on his whole front, with his total forces and with the principal effort at the centre in Belgian Luxembourg.

General Joffre knew in fact that the Germans were able to violate Belgian neutrality. He had even been almost certain of it ever since 1911, without knowing if the enemy would limit his outflanking move to the Meuse from Liège-Namur or if he would extend his right flank to the north of the Meuse.

This uncertainty did not seem then very important, because, according to the doctrine of the time, that of the "safety by offensive," the strong attack on the enemy centre ought to paralyse the outflanking movement of the German right.

General Joffre had, besides, taken precautions against this possible outflanking in the Belgian plans. He counted on opposing the enemy on this side with Belgian and British troops and his reserve armies concentrated on his left flank.

He may have had some doubts as to the efficiency of

these measures of precaution towards the August 18th, 1914, when he saw the Belgian troops faring rather badly, and the British and the Lanrezac Army overdue and without sufficient liaison. But shortly afterwards his intelligence showed him the bulk of the German forces crossing Belgian Luxembourg from the south-east to the north-west, one or two stages ahead of his armies ready to attack on the flank of the marching columns; and on 20th August he gave the order to take the offensive at his centre, in order to catch the enemy in the very act of manœuvre, before the German right flank had become dangerous.

Theoretically, he counted at that moment on the Belgian Army, whose action was provoked by the violation of the neutrality of its territory. But this army was in full reorganization and too weak (six divisions of infantry and one division of cavalry) to be able to suffice for the task imposed to it by the events.

And so, if it had in fact protected the French concentration in the north, the Belgian Army could not play a more important part in the initial phase of war. It was not able, in particular, to check the mounting flow of the German Army which invaded very rapidly almost the whole of Belgium and compelled the Belgian Army to seek shelter in the defences of the entrenched camp of Antwerp.

The British expeditionary corps, concentrated in all haste on the Franco-Belgian frontier, following the violation of Belgian neutrality, did not weigh at this moment very heavily in the scales (four divisions of infantry and one division of cavalry). It could not be ready to go

into action before August 24th, that is too late to contribute to checking the German offensive, which developed with the speed of an avalanche.

Joffre himself cut the figure of a leader in the full meaning of the word. However strongly impeded by his own plan of operations (Plan XVII) the directing idea of which had too long veiled for him the reality of facts, he saw only and understood rather late that the principal danger threatened France from the north.

It is only in his order of August 15th that we find the first proof of the happy change in his tendencies in this respect. He had, however, to admit that having engaged the French Army in the battle of frontiers in conformity with the concentration carried out, it was not easy to proceed to its re-concentration on the scale imposed by the circumstances. That is why the regrouping of the French Fifth Army did not give any positive results because of the delay of the British concentration and the retreat of the Belgian Army towards Antwerp. The projected action of these two groups failed. After a few days of particularly bloody fighting the French Army, which had lost the battle of the frontiers and whose rear was threatened, was forced to retreat on almost the whole front.

Plan XVII had collapsed. The directives of Joffre and the orders he gave at that time show sufficiently how difficult it was to perform the regrouping of armies thrown from different sides, and to concentrate and carry out the mass of manœuvre necessary to remedy the German menace of encirclement to the north, a menace which Plan XVII did not check.

Undoubtedly, every military action calls imperiously for provisions of manœuvre and for a plan of concentra-

tion. But the events of 1914 proved that we should not push precision too far in the provisions of manœuvre and that the plan of concentration should have as much flexibility as possible. Nor should the plan of operations hinder the freedom of action of the commander-in-chief or make him the slave of a preconceived, theoretical conception.

In future, every plan of operations should take into account to the greatest possible extent both the power of modern armaments which have a very considerable range and can operate in transverse, and also the speed of the means of transport, which facilitate the organization of strong and mobile reserves.

Economy of strength will play an important part, above all, in countries having extensive frontiers which are difficult to defend. The dissemination, under the pretext of security, of the available units would be a capital mistake. In fact, decisive victory is obtained by using forces superior to those of the enemy in a zone chosen for a surprise attack. For it we must have many unattached units. We shall be able to find them by organizing an economical defensive on other regions of the front. This is the method which procured for the Germans in 1914–1918 their successes in Serbia, Roumania, Poland, and Russia (defensive in the West in 1915 and at the end of 1916–1917).

If the total national forces do not suffice to defend a stabilized front and attack simultaneously in the decisive zone, it might be wise to resort to a delaying action, instead of a defensive, on the secondary fronts, with the object of sparing the troops even more.

The forces made available by this means should be

exclusively under the control of the commander-in-chief, and stationed in such a manner as to be capable of being transferred to a decisive point or direction in a minimum of time.

Notwithstanding the demands and claims made on the commander-in-chief they should not be used, if at all avoidable, for the security of the covering front. The manœuvre mass available should not be frittered away in local efforts. It can, moreover, be admitted that the resources of fortification and a great vigilance on the part of the air force make it possible, in our time, to increase the reserves of the commander-in-chief without diminishing the solidity of the fronts; the ideal would be to reserve a third of all the forces if it were possible.

Once the hour of the offensive has struck, the reserves should be concentrated on a front narrow enough to give them a very pronounced numerical superiority. The assembly of the forces should be carried out in secret and the attack, by surprise; the action should be executed with vigour and speed.

By these methods we can try to arrive at a decision even against an enemy superior in numbers. The Serbs did this successfully against the Austrians in 1914 (the relief of Belgrade). There is nothing chimerical about such an undertaking.

It would be of great service, but only in so far as it would facilitate manœuvres of troops concentrated in the direction of the most important fields of operations. The dispersal of forces dictated by the wish to protect uniformly the whole theatre of war, would be an error that might lead to disastrous consequences. It would be very

grave in a country where the frontiers are very extensive and have not, as in France, permanent protection.

The permanent maintenance of troops on a defensive portion of the front is only useful in so far as it guarantees freedom of action and helps to launch a manœuvre, taking full advantage of the flexibility and the capacity of movement of the modern armies, which can organize massive concentrations more easily than could be done in the past.

It is necessary that the mass manœuvre carried out by the reserves and provided for by the plan of operations should use as great a quantity as possible of elements of the general reserve (technical means of combat). The reserves of the commander-in-chief should be composed of units which are the best clothed, best trained, best officered, and best provided with the most powerful means of action. These would be especially forces having the greatest mobility, great units of mechanized or non-mechanized cavalry as well as detachments of infantry and of totally, or at least partially, motorized artillery. They should also include the bulk of the fighter air force, heavy and motorized artillery, tanks and armoured vehicles. It would be necessary to show decision but also great prudence in the use of these forces, which are irreplaceable. Sending them in a wrong direction would be running the risk of irreparable defeat. Being a powerful instrument, but unique and fragile, they should be applied only with great skill and deliberation.

The carrying out of this mass manœuvre would be in any case preferable to the systematic and passive defensive which, on an extended front, would lead inevitably to

defeat. In that way the initial failures of the Polish offensive in 1920 can be explained. As it was impossible, on the other hand, immediately to carry out the regrouping of the Polish forces with a view to reconstituting a sufficient reserve, the decisive battle, instead of taking place on the Dvina or the Dnieper, was won in the rear, on the Vistula and the Bug.

The articulation of the reserves foreseen by the commander-in-chief should be flexible enough to adapt itself to offensive as well as to defensive action. We should, in fact, avoid at the beginning of a war the exclusively offensive attitude which would risk reverses, the influence of which on the army and on the population are always dangerous. On very extended theatres of operations we should thus avoid making moves and manœuvres of too great an extent; loss of time would result from it, disconnected actions, and a dangerous dispersion of forces. Lastly, we should not forget that the mass employment of aviation or of cavalry in raids of a great depth would be such as prematurely to reveal the intentions of the command and to deprive it of the most useful forces for the approach and the battle as well as for the exploitation of a possible victory.

We have already said and demonstrated that there is no fixed plan of operations in peace-time.

It may be objected that military history offers examples of the contrary thesis; there have, in fact, been some cases of successful plans fixed *a priori*:

Napoleon, in 1805, entering Bavaria, with the idea of wheeling to the right on the Danube and of enveloping the Austrian Army.

Napoleon, in 1806, crossing the Frankenwald, with the idea of straddling the communications of the Prussian Army.

Moltke I, in 1866, foreseeing a battle in Bohemia.

However, the cases where events baffled expectations and forced the strategist to start a manœuvre, not foreseen in advance, are more numerous:

Napoleon, in 1809, wanting to seize the Archduke Charles on the Isar and only succeeding in it below Vienna (Essling-Wagram).

Moltke I, in 1870, seeking battle on the Saar and succeeding only to the west of the Moselle at Saint-Privat.

Moltke II, in 1914, starting to encircle the French left and seeing his own right outflanked.

And yet it was easier formerly than it is now to foresee the movements of the enemy, who moved at the speed of twelve miles a day and who had only a very small number of means of communication. In our time, the flexibility and the variety of the moves have become such that it is chimerical to try to foresee, however perfect the communications are, what will take place at a given moment. Above all, we can no longer make any hypothesis in advance as to the moves of the enemy. Nothing is left but to study the terrain and draw general conclusions from it; on the other hand, it is very necessary to do so carefully and to lay the foundations of a plan of concentration, to be prepared in peace-time.

We can say in this respect that the Schlieffen plan was

a plan of concentration, and that Moltke II was wrong in drawing from it a plan of operations worked out to the smallest details; as if chance, the enemy, inclement weather, the faults of his subordinates, politics, and all the rest could not create contrary interferences! The part of the commander-in-chief in the course of operations is definitely to provide for this, and Moltke did not even think of it!

Even if we neglect the past, it is certain that, in future, motorization and the relative easiness of transport thanks to the motor-car will render forecasts established in detail a long time in advance even more hazardous.

The general designated for the post of commander-in-chief will thus have, in peace-time, simply a general idea of the operations (and not a plan) in connection with which will be formulated the most flexible possible plan of concentration. He will study the principal hypotheses which could present themselves in case of a war and the manœuvres which he could arrange in each of them, without, however, fixing his intentions *a priori.*

Such studies can be made on the map or on the terrain. It is tempting to try them out with the help of *Kriegspiele* or of real manœuvres; but this experimental method can give scope to extremely serious indiscretions. Let us not forget that the Belgians had known since 1906 of the innovation (the outflanking movement through Liège and Brussels) of the so-called Schieffen plan, which had only been adopted by Germany in 1905, and France heard of an exercise of the German G.H.Q. previous to 1914, in which Belgian territory was virtually violated. The risk of such exercises is great from the political and military

points of view. Secrecy is all important. The best manner of assuring it is that the commander-in-chief designate should not reveal his intention to anyone while peace lasts.

It is important, on the other hand, that the means of execution allowing the adaptation of the plan of concentration to the different hypotheses should be the object of strenuous efforts of preparation. Fortifications, means of communication, variants of transport, dumps of material, files of the General Staff, all should be ready in advance, in order that no matter what the initial situation of the war may be, the commander-in-chief should be able to make and act upon a decision imposed by the circumstances.

One of the most delicate questions of this preparation would be the co-operation with the allies. Militarily, it would be desirable that it should be arranged in advance with great precision. Former conventions provided for this: for instance, that concluded by the States members of the Tripartite Alliance in particular forced Austria-Hungary to intervene in Galicia at a given date and with given forces.

Unfortunately, we can find in military history numerous examples of conventions which were not carried out.[8] To-day this might be even more frequent, for political reasons and in particular by reason of delays incurred by the interpretation of the term "aggressor State," or because of recourse to the League of Nations. A State can no longer take into account its alliances to the same degree to assure its security; it should first of all count on its own forces. Consequently, the commander-in-chief

cannot base his projects of operations on the help of allied forces which may not be given within the time foreseen or may even be completely lacking.

REFERENCES

1. Only Poland, with the system of the levy of all men capable of carrying arms presented, in a certain measure, an exception in this respect.

2. The proportion of active troops varies from one country to another, according to whether the units are more or less grouped in the vicinity of the frontier in peace-time, and whether they have other tasks to perform or not.

3. A method envisaged in September, 1915, by Serbia, who was informed of the German-Austrian-Bulgarian offensive that was being prepared.

4. The railways assured at the same time the supplies and the evacuations, with a power and a regularity which did not once fail during the whole war.

5. Tires, tracks, considerable increase of tonnage and of speed, regularity of functioning, etc. . . .

6. The consumption of munitions for a combat of some importance is approximately the following:

Light artillery guns ..	.. 200 to 300 shots	.. 2 to 3 tons
Short heavy artillery guns ..	75 to 100 "	.. 3 to 5 "
Long heavy artillery guns, according to calibre	.. 75 to 100 "	.. 2 to 3 "

Total for one division: about 100 to 200 tons; for the artillery of an army corps, about the same tonnage. The munitions for the infantry represent only a small part of these requirements.

7. His vanguards, the Serbian armies (six infantry divisions and one cavalry division) covered 280 miles as the crow flies in forty-five days, which represented in reality more than twelve

miles a day. They succeeded in doing it by living exclusively on the country, which would not have been possible for the bulk of the Allied armies of the East (twenty-two infantry divisions). It can thus be said that in these countries the pursuit on the Danube was effected with the maximum of speed and of power compatible with the circumstances.

8. For example, the Convention concluded in 1912 between the Balkan States; it is well known that this agreement did not play any part in favour of Serbia when she was assailed by Austria in 1914.

CHAPTER VII

The Initial Operations, Their Character, and Their Conduct

1. THE INITIAL OPERATIONS AND THE EFFICIENCY OF A MODERN DEFENCE

ON THE methods of action adopted in war-time will depend the result and the efficacy of the established system of defence. Naturally inclined to envisage mostly defensive methods, the contemporary democracies would like to avoid the offensive at all costs, even in the event of a war of aggression. (Let us note, by the way, that this is not the case with the U.S.S.R., whose doctrines of war are permeated with the offensive spirit.) This manner of seeing things is, as we have noted, completely erroneous; the attack in the course of the struggle is technically the best means of defending oneself. Therefore, whatever the policy practised, most of all if it proceeds from a defensive spirit, in order to accomplish its aims it ought to envisage a strategic offensive and prepare for it in peacetime, as a method of defence.

To become convinced of this, it is enough to ask oneself if, according to the classic methods and from the purely technical point of view, the defensive is possible as an exclusive method. It is beyond doubt that, whatever the character of war, offensive or defensive, in the

first place it is *the type of country* which will determine the movement of troops and the methods of manœuvre. It can, of course, in certain cases, constitute an important advantage for one of the adverse parties; facilitating the covering, the concentration, and the grouping of the armies before the battle.

The exploitation and the utilization of territory, which was raised to the level of a dogma in the nineteenth century, was a more or less empty term in primitive times, in antiquity and in the Middle Ages. Later, with the introduction of fire-arms, and until the 1914–1918 war, it constituted one of the strategical fundamentals of the art of war. The lay-out of the terrain and the natural obstacles, in the form of modern permanent fortifications, correspond at present to the increase of the power of modern machines such as tanks, long-range artillery, aerial bombardment, etc.

2. THE PERMANENT AND PROVISIONAL FORTIFICATIONS

As was proved by the 1914–1918 war, the campaign fortifications such as trenches protected by barbed-wire, blockhouses, etc., have become insufficient and would be even more so in a modern war. Hence the necessity for modern fortified and armoured establishments, equipped with underground fortifications and considerable armament.

Unfortunately, modern fortifications are extremely costly; the construction of modern fortifications on a large scale would probably give the country undertaking it a relative security and would save human lives, but it would be as ruinous as war itself. On the other hand, these constructions demand a great deal of time and should be

constantly re-adapted to technical progress and to the progress in armaments.

In practice we should thus be content to fortify the most exposed places and to use, whenever possible, the natural obstacles, such as rivers, mountains, etc. The centres of resistance, disposed as on a chessboard, adequately provisioned and armed (especially with anti-tank weapons), would be so constructed as to be capable of resistance even if outflanked by the enemy.

If constructed on too large a scale, these fortifications would absorb important effectives to the detriment of the active armed forces intended for manœuvre at the disposal of the High Command.

Such as they are, in fact, and however much improved they are, modern fortifications do not form an insurmountable obstacle. Thus to sacrifice to them the greater part of the armed forces, diminishing the armies of manœuvre, would be an imprudence which would be the equivalent of giving up the country to the enemy, so long, of course, as no means was found to resist with certainty the aggression of armed forces having modern armaments at their disposal, and this is, to say the truth, scarcely conceivable.

Lastly, if we are to believe the complaints constantly addressed to Geneva, the fortifications would not be entirely deprived of offensive value. This is, however, only partly true. Reasonably employed, the fortifications, manned by detachments of troops of average value, allow, in holding out for a certain time, a certain economy of strength which gives an advantage to the armies of manœuvre. The artillery with which they would be

equipped could shell the adversary's territory, although this would be an exception. The defence would, in fact, mostly use short distance cross-fire, and howitzers with a curved trajectory and a rather reduced range, in a broken terrain.

On the contrary, it is undoubted that the fortifications can cover with a certain degree of efficacy the projected offensives and constitute stocks of war-material which can be employed for this purpose. They can thus facilitate, in principle, offensives on a grand scale, and surprise, by multiplying the possible outlets, which would provide many variants for the manœuvre.

Within these limits, one may admit that fortifications possess a certain offensive value. It is right to add, however, that the offensive applied in modern warfare would remind us only slightly of the ones undertaken in the course of the 1914–1918 war. Without counting the air-raids, which will have as object the disorganization of the rear, the attacks, in a modern war, will be performed as much as possible by surprise in the form of a sudden assault, with the help of mechanized and motorized units appearing in mass and having the greatest speed. We thus cannot dispense with the idea of envisaging the possible collapse of a front, however well fortified. Only the armies of manœuvre would be capable of re-establishing the position, by counter-attacking, that is by using offensive methods in spite of all.

Thus we are led to envisage the attack as a means of defence and, in consequence, the strategic offensive as being the only expedient to weaken the strength of the adversary.

3. THE OFFENSIVE

In short, the most solid fortifications do not constitute an absolute guarantee of security. Assuming an important role in the covering operations, at the beginning of the hostilities and as brakes in the course of the struggle, they give very precious advantages to the High Command, as centres of resistance on which it can rely according to the circumstances.

In this respect the most modern fortifications are the continuous ones which have been built by France all along the Franco-German frontier. But it will not be possible, for all sorts of reasons, for the other countries to do the same. Most often they will have to be content to lay out centres of resistance in zones in the most exposed places. Their principal task will be to facilitate the mobilization and the concentration by consolidating the covering operations, and by sustaining the army proper in its essential role, which is to reduce the enemy to powerlessness and not to be restricted to passive defence which, in any case, will always be unfruitful.

4. THE CONDUCT OF OPERATIONS IN THE PERIOD OF COVERING AND OF CONCENTRATION

Classic works, which remain very interesting in many of their teachings (Clausewitz, Jomini, etc.), have dealt with strategy and with the conduct of operations. They have to be revised to-day, by reason of the modern processes of mobilization and of concentration. The manœuvre of war cannot be identical in the covering operations, during the assembly of the forces, or when all the forces are already massed: the factor of motorization fur-

ther complicate the question in each of these situations.

During the period of covering—whatever the form of covering, a subject already dealt with in the preceding chapters, it will comprise in all cases a frontal resistance, all along the frontier, with mobile reserves, more or less ample in number, ready to intervene. The positions of resistance and their garrisons, laid down in peace-time, cannot be modified at all, under the penalty of losing momentarily a part of their solidity. The duty of the commander-in-chief will thus be mostly to handle these reserves.

The latter should always be limited in proportion to the extension of the front; it will be necessary to use them all the more sparingly so as to have a frail "crust" or to be able to man any new covering sectors which might open later in the theatre of operations. It is impossible to plan on using them in operations having only a local interest or to reinforce individual sectors. It would be better for the country to yield temporarily a few miles of territory than to waste the only available divisions.

The covering reserves ought to proceed preferably by mass and rapid interventions in serious circumstances, then withdraw, if possible, from combat, in order to become available again. They must, moreover, be very mobile (motorized or mounted units, aircraft) and supported by numerous units of tanks or mechanized cavalry. If they are to perform their functions satisfactorily, their intervention requires an intelligence service, an air reconnaissance, a distant security service, and communications of maximum efficiency. If it is exceptional and temporary, it should be in great force and energetic.

We may, however, be compelled to spend the covering

reserves in the course of operations imposed by political needs, in operations in aid of allies who are faring badly, or in view of some national interest. The duty of the commander is in these circumstances to try to see to their replacement by units speedily mobilized according to a scheme prepared in peace-time and put into action with the authorization of the government. Should this expedient be insufficient, general mobilization will have to be ordered.

During the concentration.—The situation changes when the units mobilized inside the country start flowing into the military zone. The fronts can be reinforced by a certain number of them; the other units, as they arrive, gradually increase the effectives at the disposal of the commander-in-chief.

Then the temptation arises to realize a part of the national war-aims or to seize the opportunity of a possible military success. Is it wise to act immediately? Is it wiser to wait until one has all the assembled forces under one's control?

Very numerous factors will decide the choice between these two methods. In any case, even if a satisfactory muster of forces urges a premature action, one has always to remember that modern armies are not capable of giving battle straight away, as were the troops of Napoleon in 1805 and 1806.

The mobilized units of the national army comprise, in fact, an active unseasoned nucleus and a great majority of reservists who may lack instruction and will certainly lose cohesion; their material is new and in the stage of being adjusted or "run in"; their animals, recently requi-

sitioned, are not yet trained. Such units cannot be thrown into active combat without a minimum period of preparation.

Even if the troops were the best in the world, prudence would still be required. In fact, the tactical doctrines worked out in peace-time need a phase of trial during partial operations before being established. All beginnings of war, following long periods of peace, have been periods of groping and fumbling, and many lessons. It is certain that the recollection of the revelations of August, 1914, as to fire power, will induce the belligerents not to risk anything with their new weapons. Circumspection will be all the more a virtue, as the modern material and motorization will undoubtedly have many surprises in store.

Even if the preparation for war were admitted to be satisfactory and the troops capable of marching into battle without delay, the period of concentration would still not be very favourable to operations on a great scale. At this stage of the hostilities, in fact, the intensive transports from inside the country towards the front would render difficult the regrouping of units already moved up; the service units and the small units of the general reserve would partly be lacking; the equipment of the battlefield would not be complete.

In these conditions, to take the strategic initiative would be a weighty decision, to which the High Command would resort only if they deem it very necessary, before the end of the concentration. Defensive positions would show themselves; a certain analogy with 1914–1918 might very well manifest itself provisionally by reason of this temporary stabilization.

After the completion of concentration.—Once the national forces are all mobilized and concentrated, the strategical delay cannot be prolonged without very serious objections:

The statesmen will, in fact, be afraid of leading the nation into a war as interminable as the preceding one, which by its duration almost provoked revolution and ruin in the whole of Europe;

The strategists for their part will fear the breaking of stabilized fronts by a motorized and mechanized enemy;

Lastly, the populations threatened by aero-chemical warfare will desire to put an end to the war: their morale and resistance will not be indefinite.

It is thus likely that attempts will be made to shorten the period of initial defensive in order to pass to an offensive and hasten a decision.

It seems likely that the offensive must become ever more formidable, in the hands of a belligerent powerfully equipped with war-material. It might progress quicker and deeper than during the 1914–1918 war, even by leaps and bounds. Knowing that the defender is sheltered behind important obstacles in the terrain, it will be on the whole based on the geographical study of the theatre of operations and will aim successively at great breaks-through in the terrain.

Called upon to cross rivers and ranges of hills, where the resistance of the defender will be added to natural difficulties, the assailant will try to get round the frontal barriers by large outflanking movements. Thus the motorized

and mechanized means may cause the rebirth of manœuvre in more or less free terrain. The march of an offensive might very well recall that of the Grand Army in 1806, which took as successive objectives the Saale, the Elbe, and the Spree.

Thus, the modern warfare with the means at the present disposal of the belligerents, calls for manœuvre, discontinuous fronts, and consequently, the strategical application of the principle of the assembling of forces. To ward off an aggression undertaken according to these methods, an organization of national defence analogous to that which we advocate in this work seems to be required as far as the mobilization, the consolidation of exposed regions and the supplying of the army with technical material are concerned.

Manœuvre on the Napoleon model would doubtlessly be favourized with reference to illustrious precedents, thanks to aviation and modern cavalry, by an infinitely more precise system of intelligence; the motorization of shock units and a network of lines of communication, reasonably established, would increase mobility even more; lastly, transmissions would facilitate the command. But the possibility of more frequent rapid changes in the situation and the putting into play of considerable effectives complicate its task and render necessary a perfect organization, faultlessly prepared.

Lastly, in contradistinction to the war of the past, if we believe the principles proclaimed by some countries, a modern war would take on the character of an implacable struggle, aiming at the complete destruction of the adversary. It would thus be for the country which

became the victim of aggression a question of life or death.

As we already indicated at the beginning of this work, the surest means, apart from political actions, of averting the possibility of war is, for peaceful nations, first and foremost, not to ignore the eventualities which a modern war calls for, and to build up a force strictly adapted to its necessities, and capable, if need be, of imposing peace.



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