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'We made a mistake : . .'

HITLER

LUCIEN ZACHAROFF

'We made a mistake . . .'

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RUSSIA'S AMAZING DEFENCE

'We made a mistake about one thing—we did not know how gigantic the preparations of Russia against Germany had been . . .'—HITLER

LONDON
John Lane The Bodley Head

First published 1942

Printed in Great Britain by
UNWIN BROTHERS LIMITED, LONDON AND WOKING
for John Lane The Bodley Head Limited
8 Bury Place London WC1

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'According to Plan . . .'

SEVEN years ago, Lieutenant Colonel Justrow, an outstanding brain-truster of the Nazi army, wrote: 'Decisive success against a defence prepared for all eventualities is possible, *if at all*, only by a lightning surprise attack.' The italics are mine.

At 4 a.m. on June 22nd, 1941, the 'lightning surprise attack' was launched against Russia. German artillery opened up full blast. German mechanized units were hurled at the frontiers. Luftwaffe bombers rained death on the Ukraine, Crimea, Lithuania.

At 5.30 a.m., Count Von der Schulenberg, German Ambassador to Moscow, called on the Commissar for Foreign Affairs, Molotoff, to 'inform' him that Russia's turn had come.

It was the standardized formula of Blitzkrieg. The impact of the first attack was tremendous. It had been worked out to the most minute detail, rehearsed with loving care like the overture to a Wagner opera. The first blow was designed to send the Red Army staggering back, punch-drunk. The Russians were to be thrown off balance at the start and remorselessly pressed from that moment on; they were never to be permitted a breathing spell, a chance to gather their strength. France, Poland, Jugo-Slavia, Greece, had taught the Nazis that all they needed was the systematic pressing of that initial advantage. By the time the Reds were ripe for the final blow, they would hardly know what had hit them.

In Ankara, the German military attaché said it would be all over within six weeks. In Germany, this opinion seemed conservative. Reuter's reported Nazi opinions that 'the campaign in Russia will be finished in ten to fifteen days.'

Soviet frontier detachments were forced to retreat. Great numbers of picked German divisions thrust a deep wedge into the U.S.S.R. German official communiqués were lyrical. The magnitude and super-speed of this victory were going to amaze the world—a world that was already accustomed to being amazed. This was to be the blitz of blitzes, the Wehrmacht's masterpiece.

Then—something went wrong.

Suddenly the word 'sudden' disappeared from communiqués emanating from the Fuehrer's headquarters. Instead, the orders of the day dealt more and more frequently with losses, and counselled better care of equipment and economy of fuel and ammunition.

At the end of the first month of the struggle, Nazi headquarters claimed that the Soviet Army's last reserves had been thrown into action, that their tanks and planes had been swept on to the scrap-heap, and that the road to Moscow was open. At the end of the second month, a Berlin radio broadcast stated that 5,000,000 Russian soldiers had been put out of action, though the Russians were stubborn enough to deny this. Interesting, if true. But not more interesting than the statement that followed. The German casualties, the speaker added, *totalled less than a third of that* 5,000,000 *figure*. . . . An interesting slip, in the light of Germany's later statements about casualties.

An earlier Berlin broadcast—on July 30th—had already pitched the German official statements in this strange new key. 'Without smashing the enemy's striking force,' said the speaker, 'territorial conquests mean nothing. The march

on Moscow will give the German people nothing until the living military force of the enemy has been destroyed.'

By the middle of August, an editorial entitled 'The Most Dangerous Enemy' in the *Voelkischer Beobachter*, Hitler's official organ, attempted to prove that Hitler himself had never prophesied a lightning war in the first place!

By this time the German High Command realized how catastrophically it had underestimated the strength of the defence. Strict orders were issued to advancing contingents not to engage in serious action with strong defence centres, but to outflank them. Yet, as the Panzer formations rushed from one sector to another, immense casualties sapped their strength. Soviet bombers pounded them continuously. Guerillas took their own heavy toll of them. Russian tank formations that were supposed to have been relegated to the scrap-heap reappeared by magic. Nazi communiqués complained of 'new armies' and 'new equipment.'

Crack mechanized units under the most celebrated leadership were thrown into battle in the Smolensk and Nevel areas. There, the élite of the Wehrmacht were almost wiped out, while other divisions, after losing more than half their strength, have been reorganized into regiments. Some German tank regiments have been transformed into ordinary infantry units that retain the 'tank regiment' designation only by official grace.

What of the Luftwaffe? In every previous campaign, it won quick mastery of the air. This time the Red Air Force, after having been several times annihilated by communiqués of the German High Command, was still disputing the skies with every Nazi squadron that appeared, was impudently raiding German air fields and destroying their planes on the ground, was setting fire to the oil fields of Ploesti, and even bombing Berlin.

In every previous campaign, the Nazis had clear superiority in man-power. Hitler hoped to achieve it in this campaign by crippling Russian communications, striking a death blow before mobilization could be achieved. Here, too, something went wrong.

Always before, parachutists had succeeded in spreading terror. To bewildered peasants they had seemed like demons dropping. In Russia, they proved neither unfamiliar nor terrifying.

What of that good old reliable mainstay of Nazidom, the Fifth Column? Did Russia have none? No generals who would like to win an Iron Cross? No guides and victuallers to mechanized picnic parties? . . . Those uncouth Russians, it seems, had shot them all.

That Russia, too, has had serious set-backs, no one can deny. There would be no point in minimizing the importance of the Nazi penetration. If Krivoy Rog, Kiev, and the territory taken in the Crimea and the Leningrad area hadn't been considered important, they wouldn't have been defended.

But, on a two-thousand-mile front, it was a foregone conclusion that the attacker, knowing where he was going to concentrate his greatest strength, and having the advantage of surprise, would score important gains—unless the defender had greater man- and machine-power, not merely in the aggregate, but at *every* point. Along so vast a fighting line, the technique of a feint at one point and a blow in full force at another becomes comparatively simple. In the first rounds of the fight, it isn't the potential striking power of the defender that counts, but the force available at the point of attack, at the moment of attack.

A strategy of retreat at the major points of pressure with the fighting of delaying actions and localized counter-attacks

such as those in the Smolensk area, was therefore indicated. In strategic retreats of previous European campaigns, there was generally more retreat than strategy—necessarily so, because of the overwhelming Nazi weight of men and metal at the focal points. This was not true in Russia. The Russians yielded no ground without first strewing it with the twisted wreckage of Nazi tanks and the bodies of Nazi troops, without first sending to the rear all supplies that could be moved and destroying what could not be moved. Full advantage was taken of the recklessness of the German attack methods. Their disposition to fling away lives and machines in headlong plunges into artillery fire was coolly exploited.

Always before, this Nazi prodigality had meant economy for them in the long run. It had enabled them to crash through quickly to vital points, overwhelming and routing the defenders. In Russia, they doubled and redoubled the spendthrift tactics, but never at any point did they achieve what they were paying for—demoralization of the defence.

At one point where the order was to advance at any cost, wave after wave of Nazi shock troops plunged and broke against a stone wall of resistance. A fresh detachment was sent to storm the position at any cost, and the Nazis drew on their repertory of psychological weapons. A regimental band marched with the attackers, blaring a martial tune. Such tactics succeeded in France, against men whose nerves had been frayed by tanks ripping through their lines with feeble opposition, dive-bombers raking them at will. But men who had been able to stand their ground against tanks and Stukas weren't disposed to run away from a brass band. It was the last tune played by the band or heard by the regiment.

That the gains of the Nazis have been so limited, the casualties paid for them so appalling, has been the greatest

surprise of World War II. This is not blitzkrieg but a war of attrition—the kind of war Germany did not expect and cannot afford.

More is involved than a question of a delayed time-table. The greatest battle in history has now been in progress long enough to develop a definite pattern. Certain conclusions are inescapable. One is that the Nazis, with the losses they have sustained, have passed the peak of their power. Another is that now, instead of riding on sheer momentum from one conquest to another, they have met an adversary capable of trading blow for blow. The prospect of a quick victory is no more. For many months to come they must go on bleeding away their strength in pursuit of that mirage, while Russia and Britain and America grow steadily stronger.

Hitler—though it is doubtful whether his general staff concurred—figured on the inherent weaknesses that characterized the Czarist army of World War I. He accepted as present-day fact the tradition that Russians had no real mechanical sense and would be baffled by a mechanical war; that Russian communications could easily be demoralized; that leadership would be fumbling.

In this respect, Hitler was the victim of his own propaganda. There is plenty of evidence that cool-headed technicians in Germany were impressed by as much of the Russian air force and tank corps as they had been permitted to see. But the Fuehrer was really convinced that his own army was irresistible. Didn't he have candid camera shots of half a dozen previous campaigns to prove it? Hadn't the mere showing of those movies won other victories—without striking a single blow?

There is impressive evidence, too, that the Fuehrer counted on swelling the ranks of the appeaser group in Britain and America with the first shot he sent over

the Russian border. There hadn't been enough customers for that beneficent product, Nazi hegemony of the world. Like a clever businessman, he was going to wrap the merchandise in a new package, labelled 'Crusade Against Communism.' In this respect, too, he made—and lost—a tremendous gamble.

Another large stake for which Hitler was gambling was a means of quieting the ominous stirring of rebellion in every country straining at the Nazi chains. The magic words 'Crusade Against Communism' were to cancel out starvation, extortion, and all the Gestapo's thousand and one playful little pranks with machine-guns and gallows. But this time, when the magician of Berchtesgaden waved his wand and spoke the magic words, no rabbits came out of the hat.

In every respect, the Hitler calculations went wrong. They were based on fabulous gains, military, diplomatic and economic, to be achieved at bargain-counter prices. The Russian soil he has so far reached has been paid for at a staggering price. The payments are made in man-power, in machine-power, in morale. Unless much greater gains can be made later—much more quickly and at a very much lower price—the Nazi treasury of blood and power will be bankrupt. 'Victory' at the present pace and price is slow suicide. But, as the momentum of the first all-out attack has waned and the exploitable gains from it grow thinner, the price of further 'operations according to plan' will keep on growing even more extortionate.

The story behind Russia's answer to Hitler is largely one of secret weapons—but not as that term is generally understood. Planes and tanks are secret weapons when you have more of them, and better ones, than your enemy counted on. Education is a secret weapon when it develops

an army with ten times the technical training and resourcefulness that the enemy reckoned with. Thoroughness is a secret weapon, and a sensational one, when the methodical Nazi finds himself matched in that respect by the supposedly dreamy, impractical Slav.

II

The Legendary Luftwaffe

In every previous campaign mastery in the air proved to be the key to Nazi success. It ensured early victories, spared the Reich a protracted war of attrition, and warded off from the very outset the danger of unrest in the rear.

As the 'lightning' invasion of the U.S.S.R. lengthened week by week and month by month, the Nazis themselves hinted that their fiasco was largely due to the fighting qualities of the Red Air Force. The Nazis staked much of their expectation of prompt triumph over the U.S.S.R. on the plan to destroy the Red Air Force at the first blow. For this surprise stroke they massed their maximum strength. Swarms of their bombers swept over Russian air fields, escorted by huge concentrations of fighter planes. In the first mass raids, hundreds of Soviet planes were destroyed.

But when the Luftwaffe sought to exploit this initial gain, it came in for a surprise as dramatic as the one it received over London in September 1940. Instead of cracking under that terrific blow, the Red Air Force came back fighting. Man for man and plane for plane it showed itself to be of tougher fibre than the Luftwaffe. Only in sectors where their concentration of aircraft was fabulously greater did the Germans reach any semblance of initiative in the air.

The Nazis' communiqués tried to laugh off Soviet reports of huge German casualties. All the same, the Luftwaffe abruptly changed its tactics. Finding themselves thwarted

in the attempt to wipe out quickly the technical base of the Red Air Force, the Germans shifted their raids from one sector of the front to another; they sought to terrorize the defending air units and wear them out one by one.

But the Soviet fliers out-terrorized them. The tactics of Red fighter pilots are perhaps the most daring that have yet been witnessed on any front. Again and again they have used their planes as missiles to hurl at the enemy, ramming and wrecking the tails of Nazi planes. And their courage has been matched by their skill in manœuvring. The pilots who use this breath-taking technique usually return to their home bases unharmed and with slight damage to their planes.

In instances when their damaged planes appeared to have but a small chance of avoiding a landing within enemy lines, the Russians have deliberately dived their machines into Nazi petrol dumps and artillery batteries, giving their lives in order to carry out their assignments.

The technical qualities of the Soviet dive bomber, and especially its speed, enable it generally to emerge victorious from duels with the most modern German fighters. Other types of Soviet bombers, which distinguished themselves for their carrying capacity at high altitudes, are used for raids on military objectives in the enemy rear.

Trying to discover the secret of the frustration of their all-out air offensive through analysis of their tactics and of technical defects in their equipment, the Nazis attempted to revise both their strategy and the design and standard equipment of planes. It is of utmost significance to aviation experts that in the midst of warfare the High Command decided that its basic fighter, the Messerschmitt 109, was ineffective against Soviet bombers and had to be replaced wherever possible by the Heinkel 113 of the latest type.

What a tribute this Nazi conclusion is to the Soviet air strength may be judged by a glance at some of the imposing performance figures of the single-seat Messerschmitt 109: maximum speed, 354 miles per hour at 12,300 feet; cruising speed at sixty-two and one half per cent power, 298 miles per hour; stalling speed, 75 miles per hour; service ceiling, 36,000 feet; rate of climb, 3,345 feet per minute; cruising range, 621 miles.

Powered by a Mercédès-Benz D.B. 601 engine of 1,150 horsepower, the Messerschmitt 109 incorporated the following armament: one 23-mm. shell-firing cannon through propeller hub; four 7·7-mm. machine-guns—two synchronized guns in the fuselage, firing through the propeller disc, and two in the wings. There was also provision for carrying four 50-kg. bombs in external racks.

With specifications, standard equipment, and complement of engine and flight instruments that compared favourably with those of corresponding models in every country previously invaded, the Messerschmitt 109 now proved unequal to its task.

The Nazis are releasing a substitute, the single-seater Heinkel 113, of perhaps 375 miles per hour horizontal speed. Despite some improvements in performance over the Messerschmitt 109, the Heinkel machine may prove unsuitable for use on a big scale because its landing speed is up to 100 miles per hour and requires large aerodromes with long runways. The Heinkel is also very vulnerable. Since a part of its wing surface is used for a radiator, seven or eight bullets in its wings can disable the whole machine. It is, therefore, doubtful whether its own armament of the engine shell-gun and two large-bore synchronized machine-guns in the centre section can be of much use.

Lacking time to modernize their aircraft types, which are shown by operations in the East to be inferior to some Soviet models, the Germans are hastily ripping out machine-guns and installing cannon and armour on their fighters. But there is no prospect of any satisfactory alteration of their fighters within the next several months. I recall that after the Messerschmitt got its baptism of fire in Spain, the Berlin Air Ministry decided to introduce some innovations in its design. Other alterations were undertaken later. And the sum total was that it came off second-best in action against Russian planes. Although it is Germany's best fighter, I doubt whether further improvements can endow it with enough speed and manœuvrability to match the latest types in the Red Air Force and Britain's R.A.F.

Nor is the man power of the Luftwaffe all that it's cracked up to be. The answer to this may be found in the fact that many of the Nazi fliers of to day are inexperienced youngsters, or veterans of World War I, far beyond the optimum age. Only when considerable numerical preponderance is on their side are German fliers giving battle to Soviet fighters, and even then they are getting some surprises.

There was, for example, a sky battle about a month after the Nazi invasion began. Eight Junkers 88 bombers, escorted by two Messerschmitts, approached a Soviet aerodrome where very few fighters were available for defence. A solitary plane, flown by Sergeant-Major Totmin, rose to challenge them. The first burst of his fire sent one Junkers down in flames. The remaining bombers turned tail, accompanied by one of their fighters, while the other Messerschmitt stayed to fight it out. The two planes flew at each other head on, the Nazi swerving at the ultimate moment. The tails of the machines flicked one another as they passed, and the German hurtled down out of control. As Totmin's

plane went into a spin and was fifty yards from the ground—a matter of seconds before striking the earth—he pushed himself free of the cockpit and jerked the ripcord of his parachute. He landed safely several feet away from the wreckage of the German fighter.

The resolution of the Soviet pilots to compel their Nazi foes to accept battle, or to force them to land if they would avoid a collision, has worked against even such latest aircraft types as the Heinkel 126. When one of these appeared over Soviet territory, Pilot Mikhalev, attached to the air arm of the Red Navy, went up to engage it. His ammunition exhausted, Mikhalev made it plain to the German that if the latter did not land, there would be a collision. Utilizing his superior speed, the Russian dived at the other's tail, wrecking the Nazi's rudder with his propeller. The Heinkel crashed and burst into flames.

The willingness of Russian fliers to lay down their lives without hesitation has much to do with their effective defence of such centres as Moscow. A Nazi plane was sighted at high altitude about 6 p.m. Ordered to engage and destroy the enemy, Lieut. Demenchuk took off quickly, overtook the German, and pumped lead into it. Ablaze and falling down in pieces, the Junkers 88 crashed. During the fighting a second invader appeared—a Heinkel 111. Demenchuk accepted battle, but his ammunition soon gave out. A bullet struck him in the chest. Summoning his last energies, Demenchuk rammned his plane into the Nazi's. The German craft, enveloped in flames, crashed. Three of its crew who took to parachutes were made prisoners.

There is no miracle about the spectacular fight of the Red Air Force. Lindbergh said there *was* no Russian air force worth taking seriously, while Germany said that there had once been one, but that it had been destroyed

(and re-destroyed several times over, if one follows the Nazi communiqués). But what neither Lindbergh nor Goering reckoned with was that Russia hadn't put all its wares in the shop-window.

III

The Red Air Force

For more than two decades before the Nazi invasion, the most intriguing X-quantity in world military aviation was the Air Force of the Soviet Union. It provided a generation of the wildest speculation and fiercest controversy. No stricter secrecy than that imposed by the Soviet Government ever cloaked any war machine. Such a policy was originally motivated—and late developments have shown how justifiably—by the Soviets' expectation of attack from without. Opinion abroad tended to accept the view that if the U.S.S.R. possessed an air force at all, it must be pretty feeble. Also, that since under the conditions of modern warfare no nation in arms was stronger than its aviation component, the Soviets would crumble under the very first blows of total war.

Every now and then a glimmer of truth would appear that would not be denied. Early in 1940, in the conservative and authoritative international year-book *Aerosphere*, edited by Glenn D. Angle, there appeared details of performance and specifications of the twin-engined Soviet TB 6 bomber. This machine carried a 6,600-pound load of explosives and made 410 miles per hour at 26,240 feet.

But no one suspected, until the outbreak of Nazi-Soviet fighting, the presence in the Red Air Force, in quantities, of a fighter like the I 18. This has a speed of 350 to 400 miles per hour and mounts an engine of perhaps 1,200 horsepower. The I 18's armament comprises three .50-calibre machine-guns, and three rifle machine-guns of about

·30-calibre. Until the existence of the I 18 became known, the most publicized Soviet fighters were the I 16, which was prominent in the Spanish Civil War and in the Finnish campaign of 1939–1940, and the Z.K.B. 19.

The I 16 is a single-seater monoplane with four to six machine-guns. Of it James Aldridge cabled to the *New York Times* in March 1940, while discussing the Soviet patrol and fighter aircraft in the Russo-Finnish war: 'They generally proved to be the I 16 type of small bee-shaped little "zippers" with a top speed of about 300 miles an hour.'

In his analysis of air war in Finland, the same correspondent said that the Soviet planes had 'outclassed anything sent into the air against them.' This is no mean tribute when we recall that pitted against the Red Air Force in Finland were some of the best weapons of such leading aeronautical powers as Holland, England, Germany, and others. The Finns had at their disposal the Dutch Fokker D 21, the latest British Spitfire fighters, and speedy Bristol Blenheim bombers.

Highly manœuvrable, the I 16 is made of fabric and plywood. As in Finland in 1940, it has once again been fitted with skis to operate from frozen lakes behind the Soviet lines. Employed for strafing troops and keeping off bombers, it has an extensive radius and a flying time of from four to five hours, which is exceptional for a fighter.

As for the Z.K.B. 19, this is an all-metal low-wing monoplane whose armament includes a 20-mm. cannon and four machine-guns. It is probably faster than 300 miles per hour and is powered by an M 100 engine of 860 horsepower at 2,400 revolutions per minute.

These Soviet fighters, as well as bombers, are notable for their good range of sight for the pilot and few blind spots for the gunners—points which constitute the severest

problems of aircraft designers the world over. Yet these, with the possible exception of the I 18, are relatively old types. The TB 6 bomber is as fast as the American Flying Fortress of the Boeing type and takes aloft a greater bomb load (though it has a somewhat smaller range). It was superseded some time ago by the Bolkhovitinoff heavy bomber. This carries at least four tons of bombs. It has a higher ceiling, having set a world altitude record for ten-ton loads.

I must also call attention to the fact that neither in Spain nor in Finland did the Red airmen really open their bag of tricks. Anyone who attended May Day or other big demonstrations in Moscow's Red Square, or even saw them in newsreels, will recall the wave after wave of giant four-engined bombers darkening the skies over the millions of paraders. Not one of these machines was seen in Finland, nor has it been seen on the present Eastern Front so far. Other secret air weapons were reported from Moscow by Associated Press on Aviation Day, 1939. When a crowd of more than 500,000 gathered at the Tushino Aerodrome for the annual display of aerial progress, 'four secret new planes raced by the stands, allowing a glimpse of an unusual fish-like back fin and double tails. They were described as high-speed bombers.'

Fast and heavy bombers constitute more than one-fifth of the total number of Soviet fighting planes—the highest percentage in the world. As early as 1938 the aggregate bomb volley of the Red Air Force, that is, the total load of bombs carried in one flight, was already well above the six-thousand-ton mark. It has been increasing year by year. In 1939 Marshal Voroshiloff stated in an official report that the total quantity of bombs which the Soviet air armadas were capable of releasing at any given time was twice as

heavy as the corresponding German salvo, 25 per cent heavier than the total combined load of Germany and Italy, and 10 per cent more than the aggregate bomb cargoes of the German, Italian, and Japanese air armies.

This emphasis on the bombardment factor was developed years before any other power subscribed to the concept of modern military aviation as super-range artillery. This definition was made a good many years ago by Stalin himself. And it is a living reality—as is proved by the numbers of Nazi aerodromes which have been destroyed by Soviet bombers.

The military philosophers of the Soviet Union realized at a very early stage that the cultivation of daring aviation technique 'can completely alter the character of warfare,' as Baydukoff put it. They were working on these lines while conservative strategists elsewhere were still ponderously debating the issue of sea versus air power.

Although no one in Germany ever published in the general press anything but praise for Lindbergh and his opinions, a rather vigorous contempt was expressed indirectly for his view of Soviet aviation by Captain Fischer von Poturzyn, the well-known specialist of the Nazi Air Ministry. In a book entitled *Air Powers*, published only a few months after Lindbergh's remarks, he confided with engaging candour:

> One thing seems certain and that is that in the comparative scale of forces of the European air fleets Russia is by far the strongest and most powerful.
>
> Figures concerning the capacity of heavy and light bombers, observation planes, and pursuit ships are extremely favourable, and such exploits as those of 1937, the flights to the Pole, prove that Soviet Russia has made a big advance over other countries in airplane construction.
>
> In the course of 1937 ten thousand pilots were trained. It also seems that a shortage of pilots is an impossibility. The large number of pilots available is due in the first place to the Osoaviakhim organization which covers the whole of the Soviet Union.

Concurring in the opinion that the U.S.S.R. possesses 'by far the strongest and most powerful' air fleet, and equally sweeping and startling because it also emanated from an official of the Reich Air Ministry, was this tribute, made in the same year by Major Schmettel in his book *Air War Threatens Europe:*

> Russia like no other country is in a position to base its military strength on its air force. . . . Russia is the only European country whose territory is so large that even the combined air forces of several European powers could not conquer her. It can be safely assumed that the output of military planes will reach a total figure of twelve thousand or even fifteen thousand in 1940. This means the strength of the Red Air Force will be brought up to at least twenty thousand planes. It is only possible to realize the significance of this if we consider the gigantic increase in output during the Great War. England increased her air force from 272 planes in 1915 to 22,171 in 1918. If such an increase was possible in England, at the birth of its aircraft industry, how much more can be expected from Soviet Russia, which in peacetime is already producing eight thousand and will soon have an annual output of twelve thousand to fifteen thousand planes?

It is, indeed, noteworthy that at the height of the Axis vilification of the Soviet Union in the 'peaceful' years, when the Fascist political writers were doing their utmost to make Moscow and all its works appear insignificant, the military commentators in Berlin, Tokyo, and Rome were testifying about the Red Air Force as Captain von Zeska did. Basing his figures on the findings of the German Intelligence Service, some three years ago he was crediting

that air force with 9,000 planes, as compared with Britain's 6,000 (including reserves) and about 5,000 French machines (with reserves).

And what is the strength in fighting planes of the U.S.S.R. at the present time? This question cannot be answered about any world power nowadays. But Soviet notions of the size of an air force befitting a strong modern nation can be gathered from discussions published in their periodicals which are devoted to military science. In the *Voyennaya Misl*, for example, we read that two armies of nine corps, engaged in an offensive, should have an average of 3,500 combat planes—a high ratio of aircraft in any nation's armed forces.

Of all U.S.S.R. industries built up in the years of the three Plans, none advanced faster than those bearing directly on aeronautics—metallurgy, chemistry, tooling, machine-building, fuels and lubricants, rubber, precision instruments, etc. It is a fact that long before the war Stalin personally followed *every day* the minutest details of flying equipment production. He was receiving direct reports from the nation's most gifted designers and builders of aircraft for military, commercial, and sports use.

A most important factor in Soviet industry and military aviation and one that made for rapid progress, has been standardization of design. Uniformity of types of fighters and bombers produced in enormous numbers facilitates the training of flying and ground crews, makes for welcome interchangeability of spare parts and fuels, organization of repairs, and so on. When World War II broke out France had no less than twenty-five different types of aircraft, not counting naval and training planes. The British air force had some twenty-eight types. Even the layman can appreciate the difficulties of training pilots and mechanics,

providing supplies and repairs for such a heterogeneous air organization.

Pre-eminence in the air was Moscow's goal, while theorists elsewhere were belittling air power. But it is noteworthy that the Red General Staff was never carried away by the idea of winning great wars exclusively by means of aviation—a daydream nurtured by the Axis since it was first promulgated by Italy's late General Douhet. Soviet strategists, fully aware of their aerial strength, and making use of it in their combat planes to the utmost, have yet never forsaken the doctrine of thorough co-ordination of the air component with other armed services.

In Hitler's mid-October drive, which was a desperate effort to settle the Russian campaign before Anglo-American aid arrived, the order went out again to destroy the Red Air Force at any cost. The Nazis flung into mass attack a fleet of no less than five thousand planes. Again Berlin announced that the Soviet air arm had been 'eliminated.' . . . The fanfare of trumpets that accompanied this boast was drowned by the roar of Russian dive bombers, blasting everywhere at Nazi tanks and armoured cars.

IV

The Lightning Panzers

In the Nazis' grand strategy, the tank was conceived as an independent weapon. They went so far as to state in their Tactical Instructions: 'Close connection with the infantry robs the tank of its advantage in speed and increases the risk of destruction by hostile defensive forces.' If there was to be any co-ordination, the erstwhile 'queen of the battlefield'—the infantry—would have to adapt its rate of progress to that of the tank. If it wanted to go adventuring with the tanks, it was to be motorized.

And the world gasped at the sweep of the heavy and light Schnelle Truppen across Poland, France, and the Low Countries. Bold in concept, prompt in execution, the strategy worked with scarcely a hitch prior to the invasion of the U.S.S.R. Its success persuaded the German High Command that the Panzer forces were irresistible.

Here Come the Panzers! was the title of the authoritative book by Germany's foremost theorist of that type of combat, General Heinz Guderian, whom Hitler put in command of the Panzer thrust into the U.S.S.R. And come they did, without regard to the consolidation of their rear or contact with other arms. For this they have paid a staggering price.

The Fuehrer may have been too busy with preparations to find time to read another statement by Guderian:

> The Russians have the best foreign types of ordinary commercial motors and also of tanks. They have purchased Ford, Carden-

> Lloyd, Vickers, Renault and Christie patents and adapted them to their own purposes. They have manufactured their best and most modern motor vehicles in masses, they have trained their troops excellently in their use, and they have adapted their tactical and operative objectives splendidly to the performance of these troops. Budenny's Cavalry Army of 1920 has developed into Voroshiloff's Tank Corps in 1935. . . . Ten thousand tanks, 150,000 military tractors and over 100,000 military motor vehicles of various kinds put the Red Army at the head of Europe in the question of motorization. Great Britain and France have been left far behind. . . .

This in 1935. When war came, the Soviet Union did not have to start from scratch building factories for the production of tanks. It was simple to convert its great tractor-making works into tank-making works. A tank may be regarded as an armoured modification of a tractor, with weapons mounted. In 1937 Soviet plants turned out nearly 180,000 tractors which were of both the wheeled and the caterpillar-tread variety. Manufacturing potentialities are virtually unlimited—at least, they were in peacetime when full advantage was taken of them.

Yet the Red Army never built its strategy on the Guderian idea of tanks as an independent arm. Nor have events given the Russians reason to regret this. Repeatedly, exposed columns of German tanks have been blasted off the map by Soviet bombers. In other cases, Red tanks of fifty tons and over have destroyed German small and medium tanks without firing a shot—by riding over them and cracking them like nutshells.

In previous campaigns, Panzer units had been a psychological weapon as much as a physical one. Their headlong rush had spread terror. Poorly armed adversaries had been quickly disconcerted at the dash of large numbers of tanks, cannon, and motor-cycle riders. Inferior tactical education,

staffs incapable of grasping a military situation, commanders without detailed and prolonged experience in the field had always in the past swung the gates wide open for the German tank columns. But this risky method, based less on the possibility of real encirclements than on the hope of destroying the defenders' morale, was soon fathomed by the Red Army Tank Corps.

The Soviet order of battle is calculated to break up the German tank offensive and hinder its shifts of position by fire from heavy-calibre guns. Headlong rushes aimed at breaking the Soviet morale simply don't work. They are countered by strong defence on the flanks, and by annihilation in brief assaults of the Nazis who venture too far.

The Germans' mortal fear of the Russian bayonets often enables even inconsequential elements of the Red Army to throw both Nazi tank crews and infantrymen into confusion after the invaders 'outflank' and break into the rear of the Soviet lines. The German newspapers are almost continually lamenting the ignorance of the Soviet soldier who, when surrounded, does not surrender—but keeps on fighting.

The Nazi Tank Corps has been brought up in the spirit of the *offensive*. Its strategy never provided for the possibility of being on the *defensive*. Thus, when on the Eastern Front the Panzer forces become threatened with encirclement, they fall into disorder and lose their assurance and striking power. For their field service regulations tell them only what to do in an attack and not in a defensive situation.

Recently one important German concentration of tanks and other arms found itself on the defensive against the attacking Red tanks. Strong anti-tank defences were thrown up along the banks of a river. They were supported by

a regiment of motorized infantry, a heavy-artillery battalion and an anti-tank battalion, in addition to the German tanks that were buried in the earth up to their turrets and in this manner were stationary armoured emplacements.

A Soviet tank unit and a supporting infantry group were ordered to smash these Nazi defences. The Soviet tanks forced the river at two points and attacked the enemy simultaneously on both flanks, hemming in the hostile infantry and routing the second line of artillery. The Red infantrymen attacked the heavy-artillery battalion and tanks from the rear. Confusion ensued among the Germans as a result of the unswerving Soviet tank advance. Having lost all their infantry and a large part of their artillery, they took to their heels. Their tank crews were panic-stricken.

Another example was the shattering of the German 39th Tank Corps. This was a powerful motorized and mechanized formation consisting of two tank and two motorized divisions. It included several tank regiments, eight regiments of motorized infantry, five artillery regiments, four motor-cycle battalions, and several anti-tank units. The 39th Tank Corps apparently had been given the following assignment: operating on the outer flank of the army group, it was to strike in a certain direction and break through the Soviet lines; together with parachute troops, it was to disrupt communications and cut off the retreat of the Red Army units from the surrounding district. From the South, another German armoured force was striking simultaneously. The two contingents were to converge. The object of the operation was to cut off the Red Army group.

Their previous operations against opponents who were poorly armed and lacked initiative had accustomed the Nazis to rapid rates of advance. They had come to consider as

immutable the standards they established in Western Europe and the Balkans. Instead of achieving a swift breakthrough, the Nazis found themselves compelled to fight every inch of the way, their forces steadily whittled down, their tank crews under mounting strain. As the offensive was systematically slowed up, their command grew jittery, as is shown in documents seized by Soviet fighters. The commander of the 39th Tank Corps received order after order demanding that he step up the rate of advance at any cost whatever. The nervousness of the High Command was transmitted to the corps headquarters. Meeting the Soviet resistance, the tank divisions of the corps began to alter their course, throwing themselves to one side and then to the other in an effort to proceed eastward. Headquarters units were lagging behind. Connections with the troops were disorganized. There was precious little to remind one of the aplomb with which the German armoured legions raced along the French coast.

Hounded by their High Command, the corps headquarters demanded the impossible of the men. Orders kept on driving them forward. And all the time their situation became increasingly perilous. Headquarters did not know what was happening on the right or the left. The units got confused. Staff officers hastily wrote orders one after another, garbling names of settlements, dates and assignments. The commander of the 39th sometimes falsified his reports to appease the higher-ups. Thus at 10.15 o'clock he reported the capture of V—; at 11.30 he asked a subordinate divisional commander whether the city had been taken.

By and by, the corps swerved in order to flank its objective from the north. The Nazi generals were jubilant. Though not as smooth as their steam-roller advance in the

West, everything seemed to be proceeding according to plan. The recipe for easy victories in France and Poland appeared to hold good for Soviet Russia.

The Red Air Force rudely shattered their dreams. Hundreds of thousands of Soviet horse-power roared out of the sky. Strafing and bombing, the Red planes put many tanks and armoured cars out of commission. The accompanying Nazi aircraft were overwhelmed. Then, from the northwest, the Red tank units drove in at the stunned Nazis—a sudden, well-placed blow. The Germans buckled under. For the first time they were meeting strength comparable to their own. They lost 300 tanks, and paid a heavy toll in man-power. The corps headquarters was routed. General Schmidt, the 'invincible' participant in the Polish and French campaigns, was killed. His documents pertaining to the operations were seized. In the days that followed, the corps could no longer take part in the operations as an independent formation. Its remnants were merged into motorized infantry. The pincer movement to cut off the Red Army was a complete failure.

General Guderian's tanks are still capable of working great damage—it's no use denying that. But his theories of mechanized warfare, so exquisitely tested and refined in Poland, certainly never foresaw the conversion of thousands of German tanks into scrap iron on the plains of Russia. Hitler's strategy of land combat faces the necessity of revision of its cast-iron formulas.

In Russia, Hitler for once is meeting a present-day style of defence against a present-day style of attack. It had long been a popular belief that Russia's main defence was a 'Stalin Line,' a sort of Maginot Line on a larger scale. The 'Stalin Line' is, like the equator, an imaginary line. A few scattered areas have been fortified for strategic reasons, but the

real Stalin Line is one of men, tanks, planes and mobile guns.

Russian defence tactics were not based on the text-books of St. Cyr.

V

Russia's Mechanized Forces

SOVIET military authorities long ago came to the realization that the interminable plains of Eastern Europe were lacking in strategic strong-points and lent themselves admirably to the broadest manœuvres of mechanized forces. The strategists set to work to guard against this danger by building a tank corps of their own.

Great as it was, the Soviet Tank Corps was never conceived as an independent arm. It was to work in conjunction with airplanes, massed artillery, infantry, cavalry. Even so, it was obvious that on those colossal stretches of flat land—which presented a strategic problem beside which the defence of France was child's play—infiltration of enemy units could not be insured against. The function of the mobile defence would have to be that of absorbing the first shock of the onrushing Panzer divisions when they came, barring the vital road to Moscow, keeping a flexible wall of resistance elsewhere—a defence adequate for the mission of taking the Blitz out of Blitzkrieg.

For its strategy of defence by counter-attack, the U.S.S.R. built these types of tanks in large quantities:

1. *Scouts.* These are super-light tanklets which exercise speed and secrecy. No unduly powerful armament is needed or mounted. They include amphibians.

2. *Pursuits or destroyers.* Their function is to combat tanks and armoured cars of the enemy, to suppress hostile machine-guns, artillery and flame-throwers. These tanks have steadier armour than their brothers of the recon-

naissance service, stronger armament for knocking out the enemy tanks. They are able to advance quickly over normally impossible terrain, and they are long enough to overcome ditches, trenches, etc. They are not deterred by artificial field obstructions. They are larger, more substantial machines. When deprived of opportunities for frequent refuelling, their reserve capacity enables them to carry out longer missions just the same. The lightest models —heavier than the scouts—run up to twelve tons; medium ones reach twenty-five tons.

3. *Break-through tanks.* The Soviet strategists of tank war anticipated situations where the enemy would fortify himself mightily, dig in, erect strong defensive fortifications including anti-tank protection. Pursuit tanks are not strong enough to break through and crush such defences as the Mannerheim Line. Heavy machines are needed here, with irresistible armament and with armour that small-calibre shells cannot pierce, with high obstruction-penetrability and great fuel reserves. One Soviet hundred-tonner, often called 'the land dreadnought,' was said, five years ago, to carry a crew of ten, with an armament of one 10·5-centimetre gun or 7-inch howitzer, three 37-millimetre guns, two heavy machine-guns and twin anti-aircraft machine-guns. This virtually endowed a single tank with the firing power of an entire mechanized battery! Its speed was listed at twenty-five miles an hour.

4. *Tanks of special application.* This group embraces all machines which have a narrowly circumscribed function, like artillery tanks which transport guns of larger calibre than usual. These often halt before opening fire, or fire from covered-up positions. Sapper tanks engage in various engineering tasks. There is an engineer tank which, when confronted with a ditch that cannot be jumped, throws out a bridge and withdraws it after crossing, without the crew leaving its interior. Chemical tanks create smoke screens, release chemical weapons, and so on. Many ordinary tanks in the Red Army are convertible into those of special application: one may meet a supply, artillery, or engineer tank evolved from a whippet, light, or medium machine.

Other Soviet specialties are amphibians and tanks specially designed for the laying of barbed-wire obstructions. The use of wire entanglements, I am told by a Red Army major who is a tank expert, is more widespread in this war than is generally known. Also, there is a tank equipped for mine-laying. Supposedly 'entrapped' Soviet forces have used this type to sow destruction in the path of German communications.

Thousands of light and heavy armoured vehicles have been incorporated into the Soviet defence organization. The light ones ordinarily represent conversion from civil or commercial automobiles. At times they are not completely enclosed in armour, merely mounting a shield in front and on the sides. They are principally used for communication and reconnoitring work in advance positions. The weight of the heavier completely armoured cars often exceeds seven tons. Sometimes they are equipped with removable railroad wheels that enable them to travel on rails. Their armament is imposing.

The mobile cover provided by armoured cars is a great boon to both infantry and cavalry. Formerly, an infantryman in battle fired from a stationary position behind cover. When in an advance he abandoned his shelter and fired on the run, his accuracy of aim was largely destroyed, while he became a splendid target for the enemy snipers.

Armoured cars carry fuel for trips of 125 to 190 miles. They can thus operate to a depth of 95 miles from the base

and return for more fuel or for overhauling. With intermediate bases *en route* longer jaunts are possible. Tools for lighter repairs are carried. The main virtue of the armoured car is its mobility, which makes it possible for the infantry and cavalry to keep up with the tanks and to support them, developing well-co-ordinated operations in defence or attack. On a good road such a machine averages twenty-five miles an hour, though speeds of forty-five miles per hour and more have been reported.

In addition to armoured cars that travel on highways, the Tank Corps, seeking to increase the manœuvrability of its machines, equips some of them with caterpillar tracks instead of rear wheels. This means that they do not require a firm terrain, can traverse fields, sands and ploughed land. They can negotiate steep inclines, small ditches, and shell holes. Ordinary bullets and shell fragments usually fail to harm the crew of a heavy armoured car. Most Soviet cars' armour is impervious even to armour-piercing bullets if these are fired from a distance of more than 200 metres.

In swivelling turrets, 35- or 45-millimetre cannon are installed. The interiors are electrically lighted. Cartridges have special, readily accessible storing spaces. Observation slits are provided in the turrets and other parts of armoured cars. Tough resilient rubber on tyres makes it impossible to damage them substantially by a bullet or shell fragment. Sometimes multi-chambered pneumatic tyres are mounted; there are also tyres containing a liquid which hardens over bullet holes.

Besides reconnaissance, pursuit of the enemy and general strengthening of their own troops on the march are within the province of the armoured detachments in the Soviet doctrine of motorized-mechanized warfare. In battle, they may be applied jointly with the cavalry, helping it to break

through, to suppress the hostile machine-guns and small-calibre artillery, to repulse artillery and motorized invaders. They also undertake co-operation with the infantry in a manner resembling similar missions by tanks. Since armoured troops are conspicuous and tempting targets, they are almost invariably camouflaged with paint and tree branches. They prefer to move and rest under the cover of shrubbery. They cannot be concealed completely and must therefore operate swiftly and unexpectedly, lunging forward from behind a turn in the road, from a forest or village.

An outstanding factor in the Soviet armoured formations, originating in the Civil War battles, is the armoured train. It is a fact that in those days practically all important battles were fought along railway lines. Both Reds and Whites knew that by seizing the rail routes they would have great opportunities for rapid deployment of their forces over the nation. Armoured trains were used on the broadest scale and in a decisive manner. Their speed and armament enabled them to precede the main force, and to seize and hold various points with the aid of the expeditionary force aboard.

A Soviet armoured train consists of the combat section and the so-called base. The former is composed of several armoured platforms on which are mounted cannon and machine-guns, drawn by an armoured locomotive. The base section is made up of living quarters and storehouses. Only the combat section goes to battle. The base is uncoupled and left behind at the nearest station. It carries reserve supplies and munitions.

In battle formation the locomotive is placed between armoured platforms. Included among the equipment carried by the combat section are rails and cross-ties to repair

tracks wherever they have been demolished by the enemy. The control platforms that carry these supplies are placed at the head and tail of the train. If mines have been planted in the roadbed, it is the control platform, not the whole train, that takes the punishment.

Armoured trains have already proved competent in the defence of Leningrad against the Nazis. With their heavy guns and other valuable features they will be heard of increasingly as the Soviet counter-attacks grow more numerous and intense.

VI

Cavalry in Modern War?

WHEN the history of the Battle of Russia is written, one of its great surprises will be the discovery that cavalry has not been outmoded in warfare on a wide front.

The tremendous motorized force that Soviet Russia built was *not* a successor to cavalry, but a supplement to it. In 1937, with the mechanization of the Red Army far advanced and gathering momentum, Russia had no less than thirty-four cavalry divisions, each with two or three brigades of two regiments each. This exceeded the total cavalry in Germany, France, Poland, Italy, and Japan.

Cavalry proved a poor substitute for motorized forces in Poland; but in Russia, where it was employed merely as an added source of strength for certain strategic tasks, it has proved to be of enormous value. The Russian theory is that the antidote for an enemy tank is a tank of your own, and preferably a bigger one. But when the mechanized forces are locked in battle on so far-flung a front, situations arise in which cavalry can strike many useful blows.

The German and Rumanian forces attacking in the South have had some strong demonstrations of this theory: for instance, the Rumanian Guards Division that attempted a crossing of the Prut River. On the Soviet-held bank of the Prut the Rumanians left 5,000 dead and 100 prisoners. Many of them drowned in the middle of the river; others were killed on the western bank. The small scattered groups of survivors of the Rumanian Guards Division were hastily withdrawn to the rear.

In mobile defence actions Red Cavalry squadrons take up two positions, one behind another in a manner that reduces to a minimum their own losses and enables them to sever the contact of the advancing enemy with its infantry. When the Red riders retreat, as when they were removing beyond the Dniester, they undertake limited offensive operations designed to immobilize the opposing forces and cover their own movements. Reviving the traditions of the Civil War, the cavalrymen remain on the march day and night, almost never unsaddling the horses, covering without rest fifty miles a day on the southern front, where they engage the enemy infantry and motorized-mechanized troops supported by the Luftwaffe.

Near Balta Red Cavalry, supported by artillery, broke through the Nazi defences and forced the enemy to retreat. They smashed the headquarters of the German 198th Infantry Division, killed the colonel and chief of staff, and captured several tanks, about forty motor cycles, hundreds of bicycles, and scores of trucks. About 300 German soldiers and officers were killed.

In rainy weather, tanks lose much of their mobility and are often forced to be on the defensive. Under the same conditions, the cavalry remains as manœuvrable as ever. German infantry and communications also have been subject to severe ravages by Red Cavalry. Under Commander Batskalevich, cavalry detachments drove far into the enemy rear where they remained for days, dashing out from secret camps in the forests to attack isolated Nazi groups. These riders killed over 1,200 Germans, including a general, and wounded over 500. Later, Batskalevich's men wiped out another enemy motorized battalion and captured its headquarters, destroyed large numbers of armoured cars, trucks,

petrol depots and ammunition dumps, and blew up bridges.

An even more extensive raid was carried out by the Cossacks under Colonel Dovator. They broke through German lines late in August and after inflicting heavy damage returned intact two weeks later. The Cossacks had been feeling out German defences in skirmishes and light raids for nearly two weeks, seeking a convenient sector for a break-through. They located a weak spot and attacked in force on August 23rd. Their horses tethered some distance to the rear, they went over the top on foot, with bayonets fixed. In a six-hour battle they captured a hamlet. The next day the Cossacks fought their way through barbed wire entanglements and machine-gun nests to the Germans' reserve lines. As they advanced, their mounts were led close behind them.

Following three days of bitter fighting the 3rd Battalion of the 430th German Infantry Regiment gave way completely, leaving an unprotected gap. Quickly the horses were brought up and the Cossacks charged through to the enemy rear. Evading the German troops sent to intercept them, the riders took cover in a forest. Over forest trails they travelled westward all night. The Nazis were utterly unprepared when the Cossacks emerged on an important highway many miles from the spot where they had broken through. Near-by, a large German transport column halted in a village. Surrounding the place, the Soviet cavalrymen wiped out the Germans to the last man and destroyed every machine in the column. The next day they raided the enemy headquarters in the town of Rikshevo, where they killed a number of high German officers and demolished fifty-eight staff automobiles.

Then the local Nazi command sent out a special order

for 'extermination of the Cossack detachment' (the order subsequently fell into the Cossacks' hands). In spite of the strenuous attempts to check them, in defiance of the searching airplanes and tanks, the cavalry raids went on.

At times the Cossacks broke up into small groups that struck simultaneously at widely separated points. They burned enemy supply depots, mined roads, blew up bridges.

Before returning to the Soviet side of the front, the cavalrymen turned over to Soviet guerrillas large quantities of captured German munitions.

When the time came for them to withdraw to their own lines, the Germans had massed considerable forces to trap them. Ramparts of felled trees backed by German machine-gun nests barred their homeward march. At one point an entire battalion was ensconced in their path. However, the Cossacks pushed through safely.

It is a thoroughly re-equipped cavalry, endowed with the latest paraphernalia of combat, employed usually in mass. Indeed, it may be said that Moscow has a monopoly on the mass application of cavalry, both independently and in co-ordination with tanks and other arms.

As the war progresses, it is not difficult to visualize even more decisive missions carried out by the mounted Soviet fighters. It will be the task of the cavalrymen to follow in the wake of armoured thrusts, to occupy terrain cleared of the enemy, and to mop up the individual surviving enemy posts. It will not be over-exposed to enemy fire. The firing points will be taken care of by tanks, while the horsemen will engage in pursuit of man-power.

VII

Parachute Troops

It is natural that the Soviet government, forced to guard Europe's longest frontier, has called upon parachute armies, the most mobile force known to military science. Only a few years ago, I remember, the specialists holding forth in official German military journals were ridiculing the annual Soviet war games in which great numbers of parachutists participated. They reported that in 1938 the Red Army already had more than 70,000 parachuting fighters in service, but they held that this was sheer nonsense.

However, as the Russians continued building their parachute force, the Nazis began to be impressed. And so it came to pass that on Hitler's birthday in April, 1939, two parachuting regiments made their debut in a Berlin parade. They marched again when the Fuehrer sought to impress the visiting Regent of Jugo-Slavia. Since then the Germans have been apt pupils of the Moscow strategists.

But, by picking a fight with the Soviet Union, the Nazis have shaken a veritable hornets' nest. Parachute jumping and gliding are the two most popular sports in the U.S.S.R. Virtually all world records for all varieties of jumps are held by Red Army and Navy men or by Soviet civilians. A woman pilot, Olga Klepikova, set the world's long-distance glider mark in 1939 with her flight of 465½ miles.

In 1939 1,000,000 civilian enthusiasts made parachute jumps from Soviet aircraft. Over 5,000,000 jumped in 1940 from 600 parachute towers erected throughout the country.

These activities are sponsored by the Osoaviakhim, a civilian defence organization which as early as 1935 maintained over 100 glider stations. Then there were already over 40,000 advanced glider pilots. These figures have since been greatly increased. Some thirty-five miles north of Moscow, near Zvenigorod, the Parachutists' Centre is maintained. In addition to parachute jumping, folding and rigging, the students receive general educational instruction, including at least one foreign language. The courses last for a full year.

It is not, therefore, surprising to be told that in the present Nazi-Soviet fighting the Red Army parachutists and Osoaviakhim-trained civilian guerrillas are working together behind the enemy lines, as in the following instance. One night a battalion of Red parachutists took off on a routine action mission. Each company had explicit orders about the time and place of meeting behind the enemy lines.

A few hours later the battalion descended in a forest. In the daytime the scouts of the Red Air Force had reported a movement of enemy tanks, armoured cars and a squadron of cavalry toward a near-by village. The parachutists took up positions on both sides of the road. They carried a large quantity of explosives and ammunition. Each company was provided with all the necessary means of communication. Instead of reconnoitring the woods on either side, the German cavalrymen stuck fearfully to the road, apparently as the result of some previous bitter experience in venturing into the guerrilla-infested forests. The Soviet fighters let them pass, then hastily mined the road before the appearance of the main enemy body.

The German column was led by tanks, followed by armoured cars and infantry. As the head of the column came abreast of the Soviet positions, a mine exploded and

one tank was flung on its side. When the following tanks and cars stopped abruptly, several rammed the ones ahead of them. From both sides of the road the Soviet parachutists let loose a hail of grenades and petrol bottles. The Nazi column fell into confusion. The infantrymen jumped from their trucks and began to shoot at random. Tanks and armoured cars caught fire. The other tanks and cars retreated, followed by their infantry. Scores of corpses were left along the road.

Later the battalion met a detachment of guerrillas who supplied the information that the Germans were concentrating troops in a certain village. Parachutists scouting verified the guerrillas' story. They found an enemy command post, two armoured cars, twenty motor-cyclists, and a company of infantry in the village.

A sudden night raid was decided on by the battalion commander. The Germans little expected such a visit, for they were far behind the front lines. Co-ordinating their movements with those of the regulars, the guerrillas entered the village after dark with orders to liquidate the Nazi sentinels guarding the highway and headquarters. As the first shots mowed down the sentinels, Nazi infantrymen rushed out of the houses, fired several volleys, then began a hasty retreat from the village. Most of them did not get very far; they were shot down almost in their tracks.

At the same time the parachutists were rushing the armoured cars, blowing these up with bundles of grenades. One grenade set off an ammunition dump, causing a loud explosion. The German soldiers stampeded in panic. They poured, half-clad, from the houses and tents and ran out of the village. Some of them paused to shoot behind them without definite aim. Most were killed.

While one parachute company commanded by Lieutenant

Zagorodsky fought the Germans in the streets, another under Lieutenant Kobyzev burst into the house where the German commander had established his headquarters. First disposing of several motor-cycles armed with machine-guns, the parachutists seized all documents in the building.

The Reds then withdrew. They took back not only valuable papers but prisoners, several automobiles, and a machine-gun of large calibre. One prisoner turned out to be the commander of a German artillery battery.

Establishing a camp in the woods, the parachutists spent eighteen days harassing the enemy. Their tour of the Nazi hinterland cost Hitler over 500 killed and wounded Germans. They destroyed twenty-three armoured cars, six tanks, thirty-four motor cycles, some eighty trucks, and many machine guns, rifles, automatic and other weapons.

That such operations will be taking place throughout the period of the Nazi occupation of Soviet areas is not to be doubted. But they will first truly come into their own when the Soviet forces attain an all-round initiative, for parachuting expeditionary troops are designed by the Red High Command primarily for offensive activity.

VIII

Encirclement Was Never Like This!

GERMANY has developed new techniques of warfare—and effective ones.

So has Russia.

Military history teaches that, when a group of soldiers are encircled by a superior force, the only logical thing to do is to surrender. But the Red High Command has evolved for precisely such situations successful tactics of break-through for its troops. Frequently,, in strategic retreats, Red Army detachments expose themselves to encirclement. Behind the enemy lines, they wreak even more damage than at the front, then manage to rejoin their main army intact. A good illustration of this is the saga of a forty-five-day battle by a Red Army detachment which was cut off from the main body of the defending army in the Minsk area. We have a first-hand story of the action from General E. E. Boldin, who commanded the unit.

Involved in one fierce engagement after another with numerically superior German troops, the Red detachment withdrew on July 5th in the Minsk area, which was already in German hands. Its further retreat was cut off by additional large enemy forces. Behind the Russians there were coming up the German reserves. Only one way out of the encirclement appeared feasible to the Soviet General: a break through the enemy front, west of Minsk.

The X formation, as Boldin designates his command, opened the battle successfully, but the enemy forces steadily increased, the Germans pierced the centre of his

front, and the Russians were facing a critical situation. Several times German infantry, supported by tanks, rushed into the attack. A company of Red Frontier Guards was wiped out, without retreating an inch. Increasingly the German commanders hurled fresh forces into the battle. Toward evening fifty German tanks, newly arrived from Minsk, entered the engagement. They were flying red flags—but the stratagem was quickly discovered. Boldin's artillery fire destroyed twenty-six of the red-flagged German tanks, and the surviving machines turned back.

With the approach of darkness the formation managed to push forward to the East. Its progress through German-occupied territory is told in Boldin's own words:

> Everywhere we were joined by groups of armed men and commanders. In the Byelo-Russian forests and marshes, our fighting detachments were operating, inflicting telling blows on enemy communications. Our scouts penetrated everywhere, heard and found out all there was to learn, because everywhere they had thousands of volunteer assistants—our peasants, collective farmers, women and even children. The detachment was always informed of the strength and disposition of the Germans; it knew where it could meet with success by launching surprise attacks on stores and convoys of supplies, on motorized columns, etc. . . .

On July 31st the detachment was near the village of Homi. Near-by, aircraft of the Luftwaffe were seen taking off and landing. A scouting party located the aerodrome. A group of Boldin's men were despatched, and successfully set fire to the German planes on the ground. The formation fought and dodged its way toward the front. It was helped in numberless ways not only by the guerrilla fighters but by all the inhabitants of the villages.

Whatever Boldin required in the way of provisions,

clothes, or information about the enemy, the local peasants delivered to him. Perhaps they found the task relatively easy because, as another Red Army officer has told me recently, it is a part of Soviet strategy to leave behind, when retreating, well-concealed stores of munitions, foodstuffs, and other supplies for the use of guerrillas.

Boldin was now receiving co-operation from armed guerrilla units, which recaptured cattle seized earlier by the Germans and drove them ahead. By August 6th, Boldin was close to the front lines. At midday his advance guards came across a Red Army sergeant and some rank and file, who reported that several of their detachments were stationed in the forest north of Novo-Losyev. On the following day these joined the X formation.

On August 9th several of the Boldin scouts, dressed as civilians, attempted to cross the front. Most of them were forced to turn back, only two of them getting through. These reported to the necessary authorities the plan for a break through the front. When the scouts returned, they were accompanied by a rifle platoon to the forest in which Boldin's men were taking cover.

The Germans burned the outer fringe of the forest and blocked up all wells in an attempt to force a surrender. The idea of a Russian attack evidently seemed out of the question to them. General Boldin continues:

> At 6 a.m., on August 11th, Soviet units on the other side of the front attacked the enemy. Eighteen bombers raided enemy positions. Artillery opened fire. In accordance with the plan, my detachment was to pass over to the offensive at 7.30 a.m.
>
> The first blow was struck at enemy artillery. Five German batteries, including two anti-aircraft, faced us on the front of our offensive. The Nazis, taken by surprise, lost their heads, and didn't even manage to open fire. Only one battery fired some

volleys and then was destroyed by Red Army men who closed in on it.

We also caught German infantry unawares. Sweeping forward, Red Army men annihilated them with bayonets and grenades. German soldiers and officers rushed about the battlefield, dozens of them surrendering. The front was pierced and the detachment was able to join its troops.

In that short engagement, the encircled formation destroyed over 1,000 German soldiers and officers, five artillery batteries, more than 100 trucks, automobiles, and headquarters' cars, 130 motor-cycles, and an undetermined quantity of mine-throwers, machine- and submachine-guns.

Before the forty-five-day raiding odyssey by the X formation in the rear of the enemy was over, it had wiped out the headquarters of two German regiments, twenty-six tanks, 1,049 automobiles, headquarters' cars and trucks, 147 motor-cycles, five artillery batteries, four mine-throwers, fifteen machine-guns, eight submachine-guns, one airplane and an ammunition dump where aerial bombs were stored.

This damage is being duplicated throughout the Hitler-conquered territories by co-ordinated action of guerrillas, civilians, and Red Army units that deliberately expose themselves to encirclement during strategic retreats—all of them well trained for just such tactics long before the outbreak of this war.

The Nazi mentality has been often staggered and confused when confronted with situations of this sort. There has been many an instance of a large mobile German force attempting to carry out an encirclement only to be surrounded itself and destroyed. One of these involved a Soviet infantry division which was holding defence positions along an extended front. The approach of a strong

column of German tanks was reported. Anticipating Nazi smash-through tactics against his lightly held line, the Soviet commander decided to let the Germans pass without serious resistance and under the happy impression that they were surrounding the Red Army's detachments.

Some 300 enemy tanks passed through the Red lines in the evening, as expected. These machines bivouacked at a strategic point to the rear of the Soviet division, clustering closely together in a small forest. Soviet scouts kept close watch on the enemy, and as soon as complete darkness descended, the units of the "encircled" Soviet division began to surround the wood on all sides. Several batteries of artillery were brought up and placed for point-blank fire at the enemy tanks. At dawn the Soviet batteries opened fire. The greatest confusion ensued among the Nazis. Some tanks got under way in an attempt to flee, but not one got away. All 300 were destroyed.

This German headache is explained by the *Stockholms Tidningen* correspondent with the Nazi forces on the Eastern front:

In France, when a military unit was surrounded, it drew the logical conclusion and surrendered. But the Russians keep on fighting as long as one of them can still crook a finger.

German soldiers are dumbfounded to see Russian tankists climb out of their machines to unlimber guns or make repairs under a hail of bullets.

The Russians never surrender, and the usual German technique of undermining enemy morale by overwhelming attacks has resulted in a complete fiasco in the East.

This brings to mind an early despatch to Berlin newspapers by a Nazi reporter with Hitler's armies in Russia: 'These fellows fight on with the consistency of madness, until they cannot move a limb. They do not surrender.'

About the same time the German radio said: 'The Russian soldiers display inordinate fanaticism.'

Even when strong advance forces of the Nazis have thrust their way into territories apparently left undefended, they have been made to pay a heavy price to acquire heaps of burned-out rubble. The well-known Soviet playwright, A. Afinogenoff, has written the story of one such German conquest, in a small Russian town.

Here German planes were the first visitors, and the townspeople rushed to shelters. But, five minutes after the first bomb struck, they were pouring out of their shelters. In a rain of falling bombs, every man, woman, and child capable of wielding a sand-bucket was acting as a fire warden. With wet towels around their faces, they grasped fire-spurting bombs by the vanes and threw them from the roofs. On the ground, the bombs were shovelled into sand holes or to the middle of roadways, or were pushed into the river. Despite a brisk wind, four-fifths of the incendiaries were rendered harmless and the town was saved. Next day it resumed its normal life.

The bombings were repeated on several days, and then attacking German ground forces appeared in the neighbourhood. A home guard was formed, and all capable of bearing arms joined up. Their most effective weapon proved to be beer bottles filled with petrol. A party of advance German tanks was showered with flaming bottles. One grey-haired old forester plumped from a tree on to the back of a startled motor-cyclist, knocked the wind out of him, and led him triumphantly back into the town.

But when the Germans brought up heavy artillery, heavy tanks, and motorized infantry, the Russians made ready to abandon their town. All men joined the guerrillas. Breaking up into small detachments, they bade their

families good-bye and went off to the woods, whence they could harry the enemy's rear by day and night. The women, the children, and the aged left town, forming a caravan along the road toward Soviet-held territory. The Nazis swooped low over the road, machine-gunning the fugitives.

Hardly had the German vanguard entered the town when flames burst from the houses. The earth was shaken by explosions, and black smoke billowed up from a burning oil tank, mounting far into the sky. The guerrillas had set fire to their town. The very earth burned beneath the Germans' feet—ashes and cinders were all the Nazis had acquired.

Pressing on through the town, the Germans poured towards the river. Here a large railroad bridge beckoned them on. At the bridge's farther end, the countryside lay invitingly open to their heavy tanks, guns, and petrol trucks. The bridge filled from end to end with German vehicles. Beneath the bridge a small group of guerrillas lay hidden. A dynamite fuse flared. Thirty seconds later the bridge heaved up with a roar and plunged down into the river with all its load of tanks, motor-cyclists, and flaming petrol trucks. All the Germans upon it met their deaths in the churning water. And the guerrillas beneath, too, met their deaths—it was a short fuse, to make sure, and they knew they could not save themselves. But they made sure.

In the Ukraine, guerrillas are so well organized that they publish their own newspaper, *Za Radiansku Ukrainu*, which is widely distributed in enemy territory. It tells of the exploits of partisans, and serves as a means of communication between the guerrilla groups. As to the deadly effectiveness of the type of warfare that is still going on in

'encircled' and 'captured' territories, there is ample evidence from the Nazis' own statements.

A German tank squadron's bulletin, entitled *Bluecher*, in the issue of July 4th noted that guerrillas had attacked a German liaison group in a forest and killed an officer. The issue of July 7th said: 'On the way we had to pass through 20 villages. In every village we were shot at by Red snipers hiding in peasants' houses. We came across them along the highways between villages, too.' The issue of July 9th mentions several cases of demolition of railway tracks, burning of storehouses, destruction of crops, etc.

Another captured Nazi newspaper contained a detailed article on guerrilla warfare in a Russian town after its occupation by the Nazis.

'At night, street fighting with snipers has become the usual thing,' the paper said. 'And even in broad daylight shots ring out from behind corners, from attics and windows. Every man and woman that we meet on the street may at any moment disappear into a labyrinth of narrow lanes and tiny houses, snatch up a rifle and fire at us from ambush.' The article ends plaintively: 'That is the kind of thing they are doing!'

To some, Stalin's call, at the outbreak of the war, for the formation of guerrilla units was an act of desperation. But in reality it was a part of strategy planned years before the German invasion, making these detachments in the Nazi rear a most powerful auxiliary of the Red Army. Making a science of such fighting, trained leaders are left behind in strategic retreats or parachuted behind the German lines to organize resistance. Much ammunition and adequate food supplies are hidden for the use of these roving armed civilians. Psychological preparations for this type of combat were made over a long period in the Soviet

armed forces, schools, factories, farms, where millions of men and women were trained for just such an emergency as the present one.

Guerrilla fighters trap German motor-cyclists carrying dispatches. They cut enemy telegraph and telephone lines. They disrupt Nazi supplies of fuel and ammunition.

The Ukrainian people render splendid assistance to the Red Army not only by their military actions but by the aid they give to the intelligence service of the Soviet forces. Regular communication exists between most guerrilla detachments and the Red Army troops. Often Red Army men notice in the midst of battle that the enemy artillery, which has been shelling them, suddenly turns and fires at its rear. Then the Soviet soldiers know that the guerrilla fighters are active.

A detachment headed by a Civil War veteran raided a German aerodrome in the occupied territory. It captured six Heinkel airplanes and other flying equipment, after killing over 100 German soldiers.

Wherever there are Germans on the Soviet soil, the guerrillas seem to materialize from nowhere. From the Arctic Ocean to the Black Sea they dash from ambush, strike in the night, then vanish, leaving the Nazis to count their dead.

IX

'Osoaviakhim'

SOVIET collective farmers or townspeople do not gape in astonishment at the sight of a collection of white dots floating earthward from Nazi warplanes. They themselves have floated down with the help of the silk cupolas, and they have received special education in dealing with invaders essaying such tactics. The Russian civilians eliminate the enemy with self-confidence and efficiency.

Since the Nazi invasion, the Soviet Government has instituted compulsory training of all civilians in air-raid and anti-chemical defence. Practice blackouts have been held in Soviet cities since 1935!

When more than 200 small incendiary bombs fell on one Moscow district during the night raids of July 22nd-23rd, so well were the fire brigades and volunteer squads of civilians prepared that *every* bomb was promptly extinguished. The first few air raids on Moscow revealed how well prepared was the Soviet populace. This prompted Herbert Morrison, Minister of Home Security in England, to announce that thenceforth London would follow the effective Moscow methods—London with its nearly twelve months of experience under bombardment!

How does it happen that these men, women, and children from every walk of life display such instantaneous adaptability to the abnormal conditions of the greatest battle in history? The answer in one word is: Osoaviakhim.

That word is a telescoped version of an even greater

tongue twister. Translated, it means The Society for Aid in Defence and Aviation-Chemical Up-building of the U.S.S.R. Behind the clumsy name lies an integral part of Soviet life from the earliest days of the U.S.S.R. Thanks to this defence training in peacetime, millions of citizens can at a moment's notice shoulder a rifle, don a gas mask, clear out bomb debris, put out fires, enter a shelter and safely conduct others to it, and administer first aid to those wounded by bombs or stricken with poison gas. Additional millions of civilians can parachute from a plane, ride and care for cavalry horses, hurl hand-grenades, wield a bayonet, march in military formation, operate radio, telephone, or telegraph communications, pilot light planes and gliders.

Because of the Osoaviakhim there is scarcely a young man entering the Red Army or Navy who is not possessed of basic military skill. There is probably not a child of school age in the Soviet Union who is not acquainted with the rudiments of anti-aircraft and anti-chemical defence. For many years the Osoaviakhim literature, circulated in millions of copies, insisted that one day Soviet borders would be attacked and that every farmer and working man must know what to do in such an eventuality. A little more than a year ago there was made a sharp turn away from the purely sports curriculum of the Osoaviakhim groups in town and country. In every corner of the land amateur parachutists, instead of continuing to jump for the thrill of it, began also to study how to blow up bridges, cut telephone wires, handle machine-guns and grenades.

By October 1940, the Soviet press was writing that 'half the people of the globe are already in it and the end of the war is not in sight,' adding that while the Osoaviakhim objective of physical culture for the masses was com-

mendable and was raising the health level of the population, now the dangerous international situation demanded that the Society emphasize a curriculum of military knowledge, so that its members might be ready for 'war under difficult conditions.'

A few months before the German attack, Major-General Kobelev, chairman of the Central Council of the Society, said in an interview with a *Pravda* reporter that much stress would be laid from that time on upon pre-draft training of members who were subject to call for Red Army service in 1941. Menbers in this category were intensively drilled in skiing, digging trenches for prone shooting, overcoming a series of obstacles on the run, and so on.

To-day scientists, clerks, factory workers, farmers belong to Osoaviakhim study groups attached to their place of employment. There they have ranges for perfecting their marksmanship. They have mastered the arts of personal camouflage, advancing under fire, hurdling obstacles, hand-to-hand fighting, throwing of grenades. Each studying civilian is acquiring a military speciality—artillery, machine-gunning, medical aid, communications. As often as possible they repair to the woods and fields and perfect the new skills under varying conditions. The Osoaviakhim has at its disposal aircraft and tanks: a Red Army Major once told me that the Society furnished the Tank Corps with some of its best personnel, and the Red Air Force has repeatedly voiced its gratitude to the Osoaviakhim.

Five years ago there were probably more than 5,000,000 housewives, college students, workers and farmers in the Soviet Union who had qualified for the badge 'Ready for Anti-Air Raid and Chemical Defence.' I have already cited their expert handling of the life-and-death situation when Moscow was being raided. In every residential unit of a

large city, in every hamlet of the outlying provinces, Osoaviakhim members form self-defence groups of non-members. Hence, to say that 15,000,000 members are adept at civilian defence—staggering though the figures may be—would be conservative.

At the present time, all instruction in the Osoaviakhim clubs is given by army reserve officers. Members of the armed forces have often set a magnificent example of defence preparedness to the rest of the population. When, for example, a young Red Army man lived in a gas mask for three months to dispel the oft-voiced complaint of the uninitiated that masks could not be worn comfortably for any length of time, he found enthusiastic emulators throughout the country. So widespread was air-raid protection training that 80 per cent of Leningrad and Moscow conscripts in 1939 came to their army camps with the Osoaviakhim's 'Ready, etc.' badges.

Money is no consideration in financing the Osoaviakhim programme. The organization controls its own air fleet, flying fields, shooting ranges, parachute towers, glider stations, ski centres, firearms. Membership dues are kept very low, and in order to provide a sufficient fund for the operation of such a vast programme an annual lottery is held; last year the prizes offered exceeded 25,000,000 roubles. A further idea of the scope of mimic wars and tactical drills financed by the Osoaviakhim may be gleaned from the special war games held in Moscow at the end of 1939, when over a million and a half members participated.

Osoaviakhim maintains hundreds of aero clubs in which membership is open to any applicant who can pass a medical examination. The upkeep of the aircraft is no expense to the individual member; the Society pays. At the end of the flying course the students can do aerobatics,

blind flying, night flying, and are imbued with fundamentals of military training.

A special point is made by Osoaviakhim of the fact that its members learn to fly in their spare time, without interrupting their regular daily work. The well-known flyer, Ekaterina Mednikova, became a first-rate pilot while working at a factory in Moscow and studying after hours. In 1937 she ascended in a light aeroplane to an altitude of 6,518 metres to set a women's world record. Several months later she bettered the international women's speed record for seaplanes, covering 100 kilometres in 30 minutes 25·4 seconds.

Gliders are also used as a safe and inexpensive preliminary training for piloting powered craft. The use of glider trains for troop transport will be no novelty in Russia.

A visitor to the Osoaviakhim shooting ranges will find millions of men, women and children using firearms of low or high calibre, depending on their qualifications. Millions are winning the privilege of wearing the 'Voroshiloff Sharpshooter' badge. Over 60 per cent of youth called up for the army in Leningrad and Moscow turn up with the 'Voroshiloff Sharpshooter' badge. By 1938 there were 6,000,000 qualified badge-wearers in the adult classifications alone. In 1937 there were 100,000 juvenile sharpshooters between the ages of 13 and 16.

When winter comes and a great expanse of the country is blanketed with snow for several months, another defence skill that is brought into play in the U.S.S.R. is skiing. Osoaviakhim constructs many ski runs, puts the price of equipment within the reach of all, and stages national ski competitions. On their days off, members come to Winter Camps where wartime conditions are simulated. In an average Osoaviakhim ski contest a participant traverses a

ten-kilometre cross-country run. He wears a white camouflage suit and full military equipment, and fires an army rifle. Some categories of skiers must also be 'Voroshiloff Sharpshooters,' 'Voroshiloff · Horsemen,' and licensed parachutists. Others must be masters of gliding.

In Osoaviakhim's programme of training, many women have won prominence. But this is as good an occasion as any to scotch that wild story—emanating from Nazi sources—about battalions of Amazons in the Red Army. They are non-existent. With some guerrilla forces behind the German lines, women have seized rifles and grenades to defend their homes alongside their husbands and brothers. There are women who pilot the planes on the regular routes of the Main Administration of the Civil Air Fleet. Others pilot ambulance planes. There are women captains of sea-going ships. Some women technical workers are serving at the front with the Soviet troops to-day. Besides numerous physicians and nurses, there are considerable numbers of telephonists and radio operators in the communications services, and some women chauffeurs in the transport service.

The women of the U.S.S.R. behave gallantly under fire. But, generally speaking, they are fighting the war by taking over the civilian occupations of the men.

X

The World's Most Literate Army

THE general education and training of the average private in the Red Army are as high as those of a non-commissioned officer in the German Army, according to Henri Bidou, conservative French commentator. That opinion, expressed six years ago in the *Vu*, was perhaps an understatement.

In several of his speeches Hitler has intimated his admiration for and desire to emulate Frederick the Great, whose portraits—four—adorn the Fuehrer's study. The Prussian monarch's claim to the recognition of military history rests on his army 'reforms.' Frederick erected his structure of army (and State) control on the principle of unquestioning obedience to his orders. 'Punishment with sticks,' that is, brutal beatings, became a daily routine for thousands of Prussian soldiers for the slightest infraction of the deadening discipline, however senseless the rule violated.

'A soldier must fear the cane of his corporal more than the bullet of his enemy,' was one of Frederick's dicta. On another occasion, he said: 'When my soldiers begin to think, not one of them will remain in the ranks.'

Hitler's ideal for the Third Reich and for the Reichswehr has been to the effect that 'theirs not to reason why.' When 'they' begin to reason, periodic purges follow, among generals and privates alike. With Frederick, Hitler could properly say: 'If our soldiers understood for what we are fighting, it would be impossible to carry on a single war.'

In the day of the Imperial Russian Army no other army of Europe could match it in the intolerably humiliating conditions of service. The bitter, lawless lot of the Czarist soldier has been masterfully delineated in the world of the greatest Russian writers—Leo Tolstoy, Garshin, Kuprin and others. Formerly the mass of Russian soldiery was held in impenetrable darkness and ignorance. A British visitor to Russia reported in 1902: 'The Russian soldier is possessed of many splendid qualities: he is brave, loyal and obedient, but he must not exhibit the slightest trace of brain. He has no opportunity whatsoever to show his reasoning power, his initiative. Even the words which he utters are put into his mouth readymade. If an officer asks him a question which he is unable to answer he dare not say, "I don't know," but must say, "I cannot know"!'

On the eve of the Revolution of 1905, the Czarist officials estimated that more than 50 per cent of the army was illiterate, and this at a time when anyone in Russia who could sign his name was listed as literate!

The pre-Soviet soldier used to say, 'I cannot know.' To-day the Red Army is an educational institution acknowledged by international authorities to be without equal. Addressing the junior commanders of the Special Red Banner Far Eastern Army, Marshal Voroshiloff told them: 'Lose no precious time; utilize every minute, every second, every moment for study, for mastering science. You have all opportunities for it.'

The intense, systematic, proficiently organized *study for everyone* during the enlistment years is not all utilitarian. Every opportunity to develop his special abilities and talents is afforded to the Red Army or Navy man. The Moscow State Conservatoire maintains a 'military department' for talented musicians discovered among the recruits.

The deep-voiced Red Banner Chorus and Dance Group, under the direction of Professor Alexandroff, toured Europe with unqualified success. The Red Army has its own symphony orchestra in Moscow.

Gifted army painters are sent to the Grekoff Studio of Pictorial Arts. The most distinguished representatives of the Soviet art world vie for the privilege of assisting the 'self-activity,' as the army and navy amateur theatricals, literary circles and musical soirées are called.

For writers, there is an ample immediate market in the Red Army press. Many subsequently win national recognition in the general press and in leading literary periodicals. The published works of Red Army men run to an impressive total. Every detachment of the Red Army has its own library. These libraries, to be found in every corner of the U.S.S.R., have an aggregate of more than 25,000,000 volumes. They have a circulation of 2,000,000 books a month. Individual subscriptions of commanders and rank and file amount to 2,000,000 copies of daily newspapers. They subscribe to millions of copies of general magazines, in addition to the countless periodicals provided in the army libraries. Readers' polls in the Red Army have shown that the best classics and contemporary authors of distinction are favoured: Pushkin, Tolstoy, Shakespeare, Balzac, Nekrasoff, Gogol, Saltykoff-Shchedrin, Gorky, Mayakovsky, Furmanoff, Sholokhoff, and others.

Members of the Red armed forces include over 100,000 *voyenkors*, an abbreviation for 'military correspondents,' who from their points of vantage contribute regularly not only to their unit newspapers or national defence commissariat publications, but also to the central press, whose high literary standing they help to maintain. The *voyenkors* are supplying the periodicals of the U.S.S.R. with a steady

stream of news items, verse, sketches, short stories, and commentaries on foreign affairs.

The smallest army units—up to the size of companies and batteries—have 'wall newspapers' consisting of huge bulletin boards whereon the rank-and-file journalists and cartoonists display their talents. At every lull in fighting, wall newspapers blossom forth. Troops on the march are followed by mobile units that carry radio and gramophone facilities attached to amplifiers, motion picture projectors, small libraries and sports equipment.

The reading and thinking Red Army has been for a generation a most powerful lever for raising the cultural level of the whole country. Year after year, after completing their term of enlistment, the soldiers and sailors become the best organizers and leaders of industry and agriculture. In the Osoaviakhim and out of it they become the best teachers of aviation to the civilians and promote active air-mindedness. Other ex-soldiers, their latent talents discovered in the army, pursue their studies in art institutes and scientific laboratories.

Sums that compare favourably with appropriations in other countries for the defence budget are assigned annually by the Soviet Government to educational work in the Red Army and Navy. Each military area or garrison has its House of the Red Army. This is a great territorial club—there were 267 of them in the U.S.S.R. at the beginning of the war, before the armed forces were expanded. The Central House of the Red Army in Moscow has several hundred rooms, including an immense library, laboratories, and study departments dedicated to science, music, art.

Around the Houses of the Red Army centres an elaborate system of military-scientific, political, cultural, and sports training. Every House has its song and dance ensemble, its

classical and jazz orchestras, athletic teams, theatre, and schools of foreign languages. Many a recruit emerges a specialist who is eagerly snatched up by some industrial plant after he leaves the army. Thousands complete their secondary education in the Houses of the Red Army and when their term of service is over enter college.

The smallest army units have their Lenin Rooms, that is, small clubs at the barracks, decorated with flowers and paintings, where men off duty read, study, play chess, and hear lectures at least twice a week. Musical groups practise here.

In larger units great clubhouses have halls seating hundreds. Here movies, stage productions, etc., are shown regularly. A typical series of lectures at a Moscow Red Army club recently included talks by foremost authorities on agriculture, biology, chemistry, the theory of conditioned reflex as elaborated by the late Academician Pavloff, and the history of sculpture and painting.

In its early years the Red Army accomplished the monumental task of abolishing illiteracy among its personnel. Now the general march of education in the U.S.S.R. has made the illiterate recruit a thing of the past. Perhaps 10 per cent of the youth entering the army have less than four years' schooling. In the autumn of 1937 in the Frunze neighbourhood of Moscow alone among those called up for service there were more than 1,000 engineers, physicians, school teachers, highly qualified master mechanics, and other well-trained young men. Twenty years earlier the neighbourhood had consisted of slums, and the recruits with high school education could be counted on the fingers of one hand.

A few years ago a statistician for a Red Army unit estimated that 18 per cent of his group had university education, 70 per cent high school education, and only 12 per cent elementary schooling. When the Red Army discovers in its ranks intellectuals and specialists in any field, these are almost immediately assigned to teach others. A special problem is the handling of soldiers who come from parts of the country where other languages than Russian are spoken. For them classes in various subjects are held in their native tongue, and in addition they all study Russian.

Each year the tens of thousands of young men called to the colours are better educated, better informed politically, more active physically than preceding contingents. In 1938 Moscow alone gave to the Red Army 558 civilian master parachutists, 14,716 youths who had won badges as 'Voroshiloff Sharpshooters,' 8,000 athletes who had qualified for the badge 'Ready for Labour and Defence,' and about 40,000 youths already versed in sanitary service, first aid, and the rules of defence against air raids and poison-gas attacks.

The entire educational system of the Red Army, military, political, academic, is based on the so-called Socialist Emulation. The young men compete in markmanship, in conquering the complex military technique, in learning the field service regulations and developing ability to apply them. The emulation prompts laggards to catch up with those in the forefront. Platoons, companies, regiments, divisions, and entire military districts attempt to outstrip each other in accomplishments in every branch of military and political training. They spend much time in reading and discussing the doctrines of Marx and Lenin, and in the light of these teachings interpret all outstanding domestic and international news.

For those who excel in their drills and studies there are rewards in prizes and promotions. Those especially quali-

fied are permitted to make military science their life work. Of these officers from the ranks—and there are many thousands of them—Pierre Cot, when French Air Minister, wrote some five years ago, after visiting the U.S.S.R.: 'They are young. They work hard. Their intellectual activity is remarkable. Everywhere through the Army we found laboratories, workshops and technical equipment for independent work which aroused our admiration. There is nothing similar in our officers' training schools in Paris, Lyons or Marseilles.'

For advanced training the Red Army officers attend over sixty academies for land troops and thirty-two aviation and aeronautical engineering academies. Other branches of the service, of course, have higher training centres of their own. The term of training in the military schools is two years. In the past four years the number of sudents in the land-troop schools has increased close to 150 per cent; it has increased even more in the aviation schools. Students entering these schools must have completed their secondary education. Each school has about ten applications for every vacancy.

Higher commanding personnel and experts are trained in fourteen military colleges and by six military faculties of civil universities. Entrance is by competitive examination. After graduation, the students are commissioned to posts in the Red Army. These advanced military schools are also in the forefront of scientific research in the U.S.S.R.

The inestimable effect on the morale of the men in uniform and their families, of the army and navy educational activities should be obvious. Under the Czars, weeping followed the conscript. An old proverb said, 'To be drafted is like stepping into a grave,' and another: 'The longer he serves, the more he grieves.' The annual call for the Soviet

Army, Navy, and Air Force is spontaneously turned by the populace into a national holiday.

Men in the armed services remain full-fledged citizens. Not only do they vote in every local and national election, but thousands of them hold elective offices in the farm and urban Soviets, in executive committees of municipalities, and in the highest administrative organs in Moscow and regional capitals.

Red soldiers and sailors, irrespective of rank, are elected to the Supreme Soviet of the U.S.S.R.

The Nazis confidently predicted that the morale of the Red Army would cave in at the first strong blow. Several times they announced happily that the collapse had already begun. Now the theme song has changed; they complain that the Reds are fighting 'like fanatics.' They would have been spared this surprise if they had taken seriously one of the greatest military innovations in all history.

XI

Why No Fifth Column?

HITLER meant it seriously when he wrote in *Mein Kampf*: 'If we speak of new soil or territory in Europe to-day, we must first think of Russia and her subordinate border lands.'

It is an axiom that when Hitler begins to think of conquest of a particular country, his first step to realize the scheme is to send forth agents for the establishment of Fifth Column troops inside the coveted territory. Inasmuch as he urged thinking *first* of Russia, there is no reason to doubt that his earliest attempts to organize the Fifth Column revolved about the U.S.S.R. He has established Fifth Columns in every conquered territory.

However, when the hour of invasion struck, there were no Fifth Columnists inside the Soviet Union to swing open the gates for the advancing Nazis. The nation has shown extraordinary unity.

Suppose that, five years before Hitler's attack on France, the Paris government had weeded out of the national life those politicians and military bigwigs who were later found snugly on the Nazi side. No doubt a hurricane of criticism would have been aroused. It would have been said that France was showing marks of a dictatorship so politically insecure that it had to resort to brutal repression in order to retain power. Suppose that, despite the storm of world-wide opposition, there had been elements in the French government strong enough to cause the trial and removal of statesmen like Laval, of generals like Pétain, of admirals

like Darlan, and of the lesser henchmen of Berlin planted in every walk of life, civil and military. If this had happened, there might have been no collapse of France, not to mention the betrayal of Austria, Spain, Czechoslovakia, and Poland, the integrity of all of which was guaranteed by France.

This is not to say that the French military machine was strong enough to stop the Nazis short in their tracks—though this is not improbable. But it is certain that the decomposition of the French body politic and the demoralization of the French populace and armed forces would not have been so swift and thoroughgoing. The physical media of resistance were there. Even if they were inadequate, the least that could have been done with them, if it had not been for the rotted morale, would have been their demolition by the French before they fell into the hands of the Nazis. The incomparably poorer-supplied Chinese, thanks to their national unity and moral determination, have been bringing about just that against Japan for years.

Well, at the highest posts in the Soviet political apparatus, in the U.S.S.R.'s army and navy, as well as in its industry, there were persons ready to collaborate with Hitler. The Soviet Government decided to wipe them out, at the cost of temporarily alienating much public opinion abroad.

It was with Rudolf Hess that the Russian would-be Lavals and Pétains bartered originally, as they themselves testified when they were put on trial in January 1937, before the Military Collegium of the Supreme Court of the U.S.S.R. As in all Fifth Columns, wherever set up by Hitler, both the indictment and defendants' testimony showed that a prime objective of the conspiracy was to overthrow the Soviet Government in favour of one that

would be subservient to Germany and Japan, both of which would have their spheres of influence on Russian territory for exploitation of the rich natural resources and great labour power available in the U.S.S.R. In return for German armed assistance in overthrowing the Stalin régime, the Anti-Soviet Fifth Column, led by Leon Trotsky, agreed with the Nazis:

1. To guarantee a generally favourable attitude toward the German Government and the necessary collaboration with it in the most important questions of an international character.

2. To make territorial concessions.

3. To permit German industrialists, through concessions and otherwise, to exploit Soviet enterprises essential as complements to German economy (meaning iron ore, manganese, oil, gold, timber, etc.).

4 To create in the U.S.S.R. favourable conditions for the activities of German private enterprises.

5. To develop in time of war extensive sabotage in the Soviet defence industries and at the front. Instructions for these activities were to be approved by the German General Staff.

Y. L. Pyatakoff was the defendant who testified that all the five foregoing points were taken up with Deputy Fuehrer Hess. The conspirators against Stalin were ready to yield the Maritime Province and Amur area to Japan and the Ukraine to Germany. Trotsky, according to his close friend Karl Radek, wrote:

> Germany needs raw materials, foodstuffs and markets. We shall have to permit her to take part in the exploitation of ore, manganese, gold, oil, apatites, and to undertake to supply her for a definite period with foodstuffs and fats at less than world prices. We shall have to yield the oil of Sakhalin to Japan and to guarantee to supply her with oil in case of war with America. We shall also have to permit her to exploit goldfields. We shall have to agree to Germany's demand not to oppose her seizure of the Danube countries and the Balkans, and not to hinder Japan in her seizure of China. . . .

Radek said on cross-examination that in his dealings with foreign agents he informed them that 'it was absolutely useless' to expect concessions from the present Soviet Government, but that 'the realistic politicians' who were to come into power later could be counted on. Admitting that the main hope of Trotsky and his accomplices for attaining power hinged on the defeat of the U.S.S.R. in a future war, the defendants quoted him as writing that it was 'necessary to hasten as much as possible the clash between the U.S.S.R. and Germany.' An active defeatist position, as in France, was to be assumed by Hitler's Russian agents, who were to abet the foreign interventionists.

In anticipation of the Russo-German war, a programme of wrecking, diversive, espionage, and terrorist activities was carried out on behalf of Germany and Japan. In industrial plants, on railways, in military camps, serious damage was inflicted before Soviet counter-espionage uncovered the plot. Great loss of human life and enormous material damage were suffered in multiple explosions at the Gorlovka Nitrogen Fertilizer Works. They were traced to Russians acting on instruction from Nazi Germany.

Many Red Army men were killed and injured in several train wrecks organized by a railway executive, I. A. Knyazev, acting on directions of the Japanese intelligence service. While the Germans wanted to make sure that the Kemerovo Combined Chemical Works were set on fire by their Russian assistants as soon as war broke out, the

Japanese were striking a deal for incendiarism at Soviet military warehouses, canteens, and army sanitary centres. It was all 'fantastic' when first released to the world.

The Japanese regularly received, until the discovery of the Russians', complicity, confidential information on the technical condition of Soviet railways, their preparedness for mobilization, and the movements of troops in Siberia. Germany was posted on the state of the Soviet chemical industry. The Japanese engineers then working in Russia included the agents who negotiated with the Russian traitors. A German named Lenz in the firm of Linde was securing figures on the output of Soviet military chemical plants and their future plans. G. E. Pushin confessed: 'I systematically supplied Lenz with information on stoppages, breakdowns and the condition of the equipment of nitrogen plants.'

There also existed 'the organization of a small group of reliable people to carry out terrorist attempts on the lives of the leaders.' This culminated in the assassination of the outstanding Leningrad Bolshevik, S. M. Kiroff, a hero of the Civil War. Although the assassins' main quarry was Stalin, an attempt was made on the life of Vyacheslav Molotoff, the present People's Commissar of Foreign Affairs. On his visit to the Prokopyevsk mining district, the car in which Molotoff was riding was overturned, after careful plans had been made for the occasion by Nazi-directed terrorists.

The highly condensed version of the Fifth Column's work and aspirations in the U.S.S.R., which I have offered in this chapter, does not vary radically from what is now known about France and other nations where the advance agents of Hitler's conquests operated.

When a Marshal and seven of the highest ranking Generals

of the Red Army were executed after being found guilty of secret co-operation with the German General Staff, wiseacres abroad bemoaned the 'weakening' of the Soviet military machine. Those who ordered the purge were holding to the quaint notion that only by such 'weakening' would they be able to resist effectively the coming assault on their country.

XII

Poison Gas and Microbe Mobilization

In his hour of desperation toward the end of World War I, the Kaiser ordered his Supreme Command to resort to chemical warfare.

As the final vestiges of Blitzkrieg vanish on the Eastern Front and the going gets rougher and rougher for the Nazis, faced as they are with the military-economic coalition of the Soviet Union, the British Empire and the United States, will Hitler repeat the frightful measure?

Evidence is available of large-scale preparations for the use of poison gas against the U.S.S.R. in the event of failure of the ordinary lightning-war tactics. During fighting west of Sitnia, east of Pskov, the Soviet troops captured from the retreating Germans documents and equipment of the German 152nd Chemical Regiment.

On one of the seized envelopes was this inscription:

Mobilization File. UNDER NO CIRCUMSTANCES TO FALL INTO ENEMY HANDS. OPEN ONLY UPON ORDER. *Staff of the High Command.*

The secret documents in the envelope were:

1. Secret Instruction No. 199, entitled 'Firing Chemical Shells and Mortar-Bombs, Edition of 1940.'
2. A secret supplement to orders sent to the troops in June 1941.

Included in these documents were minutely elaborated instructions for procedure and tactics in using toxic substances, including defence of chemical munitions.

Supplementing the directions was a memorandum saying that chemical troops would receive new mortars—a Model 40 of 10-cm. bore and a Model D, as well as new types of chemical mortar-bombs.

Several types of mortar-bombs were described in the directions:

1. A bomb marked with a blue band and loaded with a toxic substance which affects the respiratory passages.
2. A bomb marked with two blue bands and loaded with a faster-acting toxic substance, almost twice as deadly as the one with a single blue band.
3. A bomb marked with a green band and lettered '38.' This is loaded with a toxic substance that attacks respiratory passages, lungs, and skin.

Planning to re-introduce the ghastly chemical attack, the Nazis stress in the recently captured documents the necessity for surprise. Their instructions constantly repeat that toxic substances must be applied on a big scale, that they must be used in attack only on order of the High Command.

It is apparent from these confidential documents that detailed instructions for the employment of chemical weapons were drawn up in 1940 and were sent to the troops on June 11th, 1941, only eleven days before the sudden Nazi attack on the U.S.S.R.

Two facts of immediate significance emerge from the secret papers:

1. Already chemical detachments of the Reichswehr are at the front; within the past year they have been receiving new types of arms—mortars and mortar-bombs filled with toxic matter.
2. Procedure for using chemicals and tactics of chemical attack have been carefully worked out by the Nazi High Command, which contemplates wide use of poisons in future offensives.

By preparing for chemical warfare the German government violates the Geneva Convention of June 17th, 1925, signed voluntarily by Germany in 1929. This Convention forbids the use in war of asphyxiating, toxic, or bacteriological substances. But already all the humanitarian pacts and covenants in which the Axis countries ever took part lie in a great scrap heap along with their other broken agreements and promises.

Chemical warfare is almost a certainty in World War II. The only question is: how much fiercer than before will it be now, with its background of a quarter-century of technological progress? With Germany showing the way—and for years she enjoyed the reputation of the world's most advanced chemical power—all major countries have been compelled to develop their military chemical industries.

What of the chemical industry and anti-chemical preparedness of the Soviet Union? In a speech on the fifteenth anniversary of the Red Army, Marshal Voroshiloff declared: 'We can state that we will not be defenceless in the face of chemical armaments. We shall be able to defend our troops from chemical attack.' On the twentieth anniversary of the army, Voroshiloff spoke of its chemical detachments: 'They have defensive significance. As you know, in 1925 at Geneva we signed a protocol forbidding the use of chemical and bacterial armaments in war. The Soviet Government fulfils undeviatingly the international obligations which it undertakes. Unfortunately, certain other States and governments look differently upon acts of this kind. Particularly dangerous is the view on this subject among the Fascist powers. This is why we also are compelled to supplement our programme of training chemical troops with syllabi which transcend the framework of preparing them only for defence against chemical attack. We do not want to,

we have no right to be taken unawares. Our chemical units are marching in step with other armed services, they are accomplishing much and doing it well, and if ever an aggressive foe will get it into his head to besprinkle our troops with chemical substances, he will receive in reply the same frightful chemistry on his own head.'

I have seen the textbooks and instructions of the Red Army chemical warfare service. These were geared to available equipment and other resources, designed as they were for field practice of those days (three or four years ago), and I am convinced that if Nazi aircraft or artillery begins to dispense yperite, phosgene, and other murderous gases over the Soviet countryside, the Red troops will not only be able to protect themselves and the civilians who depend on them for such protection, but will reply in kind and in a greater measure.

Apropos of the civilians, their national defence society, Osoaviakhim, not only incorporates in its name a reference to anti-chemical defence but for years has maintained laboratories, disseminated informative chemical literature of extremely practical advice for emergencies, drilled millions in the use of gas masks, and, in short, has taken ample cognizance of the likelihood of chemical attack by Germany.

As for the prospect of Axis enlistment of deadly disease germs in this war on the U.S.S.R. and its allies, this is no phantasy-spinning for the Sunday feature section of a sensational newspaper. The fact that, as early as 1925, the Geneva Convention prohibited bacteriological armaments in the same breath as chemical ones is evidence that for more than sixteen years the powers have been alarmingly alive to the degree of perfection reached by military bacteriologists.

Nor is it sheer speculation that plans of bacterial war are being perfected in the vaults of war ministries. Enough evidence reached us from World War I to make us take this probability seriously. The better informed commentators in recent years have been haltingly raising a tiny corner of the curtain behind which, still well concealed, literally hundreds of laboratories are grooming the germs of some of the most devastating diseases to act as the deadliest weapon in the arsenal of aggression.

In Europe, even before the present war, careful attention to such matters was imperative for immediate self-preservation. Accordingly, discussion of the potentialities of microbe mobilization has again and again been voluminously featured in the general press and technical literature. This morbid interest has not been confined to discussion, but has been receiving emphatic confirmation in startling experiments, including the dissemination of microbes by German agents in the subways of London and Paris before the war. Still fresh in the minds of millions of Europeans are the startling revelations made by the staid British journalist, Wickham Steed, of those German experiments preparatory to bacteriological warfare. He cited documents from the secret aerial-chemical-offensive section of the Berlin War Office, the Luft-Gas-Angriff.

Developments in the Far East often jar the American public more than corresponding events in Europe. Perhaps a more realistic approach to the threat of germ combat may result from an examination of the implications of a meagre one-sentence United Press flash (dated March 29th, 1938). From the Chinese front came the accusation of General Chu Teh that over the areas occupied by his Eighth Route Army in Shansi, Shensi, Honan, and Suiyuan provinces, Japan's aircraft were spreading disease germs. The

general was circularizing the Red Cross, the League of Nations, labour organizations, and other groups that profess humanitarian aims. Appropriate enough was the inclusion of the League of Nations among his addressees because Japan is one of the signers of the Geneva Convention that outlawed bacilli as armaments. At the same time it is understandable that since Japan is weaker than other major aggressors in her media of combat, she is a likely sharpener of the deadliest of weapons, bacteriology, which recommends itself by its quickness of action and low cost of production. Contagion-carriers, affecting human beings and animals alike, virtually manufacture themselves, promising even heavier casualties among soldiers and civilians than it is possible to inflict by military chemicals.

To be sure, the aggressor which perpetrates this Schrecklichkeit runs the risk of reverse action by the microbes: germs are no better respecters of frontiers than are Axis dictators. But this threat should not be disturbing if we accept the dictum of a Swiss military expert who holds that 'complete and prompt destruction of the enemy army is essential for the welfare of the other side, even if the latter must sacrifice its own army to attain this goal.' Even though microbes must be unleashed gingerly in the crowded European arena, such tactics can be applied against naturally isolated island countries like England and against nations of great expanse, like the Soviet Union, the United States, and China. Under such circumstances, the simplest and most effective method of dissemination is by means of glass tubes filled with deadly microscopic organisms, such as cholera germs, dropped from airplanes, or by parachute-descending animals infected with some plague or other.

Covenants? With superlative cynicism the German Army's organ *Deutsche Wehr* settled the issue some years ago: 'It is very tempting to think of yellow fever, spotted fever or smallpox—plagues that universally cause a feeling of horror.' . . . The savants of National-Socialist Germany and Fascist Italy have long been singing the glories of every manner of causing 'a feeling of horror.' The Third Reich's Professor Lustig has announced: 'Besides the older bombs, it is likely that shells filled with death-dealing bacteria will find application, so that on the field of action there will appear a host of new enemies, and a new epoch will begin in the history of the conduct of war.'

Italy's Puntoni, with engaging frankness, declares that in wartime the task of bacteriological laboratories is 'to find means of attack, i.e. the preparation of infectious materials.' He demands the organization in Italy of a special scientific centre for the purpose, similar to the chemical warfare organization.

Microbiology, the contemporary science of the microbe, has completely mastered the method of artificial cultivation of the germs of typhoid, cholera, and other diseases. By filling the tubes in which the cultures are raised with the most suitable feeding environment—gelatine, broth, etc.—billions of microbes are readily brought into being. The Italian Ferrati heartily recommends 'bacterial armament,' which requires no unwieldy apparatus and can be prepared in any desired quantity by a small group easily able to conceal their work.

Medicine is utilizing the progress of microbiology in its war on contagious diseases. By raising various microbe cultures the bacteriologist develops methods for killing or weakening the invisible organisms, and then prepares materials for preventive inoculations.

The strategists of total war, on the other hand, are seizing upon these successes of science to pervert them in increasingly horrible ways for dealing death. The barbarities against the peaceful populations of Barcelona and Madrid by the Italo-German interventionists in the Spanish Rebellion, the ruthless extermination of civilians at Addis Ababa and Guernica, and the blood-chilling atrocities on the Continent since the launching of World War II, clearly testify that the more revolting the method of murder, the more likely is its use by the fascist command.

In their writings the Axis experts have for the most part favoured the distribution of the microscopic organisms by means of artillery shells and aerial bombs. The bombers are also to have dusting attachments, while still other apparatus is being evolved for spreading the so-called bacterial fog, consisting of tiny drops of billions of microbes. Cattle, rats, and mice capable of carrying the plague are to be recruited into the fascist service. Mosquitoes with malarial germs, flies with cholera and typhoid fever are not to be overlooked. All these may be dropped from aircraft in parachute-supported baskets and tubes which will open automatically after a part of the descent is accomplished or upon landing.

Bacilli of cholera, typhoid fever, and other diseases are to be introduced in water reservoirs and food supplies in the deep rear by specially trained Fifth Columnists. Mass-scale operations in spreading human and animal diseases are in the forefront of the quest. The perverted scientists are studying the effects of various seasons of the year, of the moisture in the atmosphere, climatic conditions, and the individual resistance of the organism.

A combined application of bacterial fog and poison-

chemical smoke is suggested. Anthrax and glanders are proposed for infecting domestic animals. In this connection it is worth recalling the admission of Friedrich Hinsch, made in reference to the Black Tom and Kingsland explosions during the First World War. He told of instructions he received early in 1915 in Baltimore from Franz Rintelen, a German Marine Corps officer sent to America by the Berlin General Staff and provided with $500,000 to hire saboteurs. Hinsch was directed to participate in crippling American munitions plants, *and to inoculate horses and cattle with anthrax and other fatal contagions.*

The universality of this form of combat is underscored by the ascertained possibilities of applying the toxins of individual germs. One such poison, fully perfected some years ago, is to be introduced into canned goods; foods treated with it show no outward marks of deterioration, and 100 per cent mortality to consumers is guaranteed. This particular substance is held to be the best for poisoning civilians behind the enemy lines. It may also be left behind in actual or simulated retreats as 'trophies' for the advancing hostile troops.

But it is an axiom of military science that for every weapon there is a counter-weapon, for every instrument of attack there is a suitable defence. And experimentation with the war potentialities of microbes has given birth to the efforts of science to counteract them. The Sartorys, for example, dwell at length on the problem of developing immunity to microbes disseminated by fog and on the need of anti-bacterial masks and antiseptic fogs.

In speaking of anti-microbe defence measures, it must be noted that many factors can cause failure of microbes in the air or water to bring on mass epidemics. The temperature and humidity of the atmosphere do not always

favour the vitality of the minute organisms. Atmospheric pressure and the absence or presence of wind may play a decisive rôle.

Scientific institutes and laboratories of the nations known to have been singled out for such visitations may investigate with profit defensive methods for suitable sanitary-epidemiological steps in their armed forces. Only an absolute neglect of normally used methods of protection against contagion leaves an army at the mercy of the users of bacterial weapons.

I am in a position to assure the reader that the planners of Soviet national defence have not overlooked this menace. If necessary, their strategy of anti-bacterial defence will swing into instant and satisfactory action: this will include preventive inoculations of the army personnel, of horses as well as soldiers. In addition to this timely prophylaxis, important bacterial defence measures will be:

1. Sanitary-epidemiologic reconnoitring and field laboratory work for an early determination of the type of contagious organisms employed by the enemy.
2. Painstaking guarding of water-supply sources, with timely counteractive service and a strict supervision of water used by the army and population.
3. Special sanitary inspection of canned-goods plants.
4. Prohibition of the consumption of canned goods captured as spoils of war and of the utilization of water sources without preliminary tests by field laboratories.
5. Intensive sanitation-hygiene education campaigns inculcating proper habits among soldiers and civilians, acquainting them with the potentialities of bacteriological combat and with realistic measures of defence, such as inoculation, food-and-drink regimen, special masks, refuges, sanitary conditioning of homes, barracks, and so on.

Nevertheless, because of the opportunities for developing

artificial breeding-spots for epidemics, the possibility of bacterial war at any moment will remain a monstrous threat as long as the unbridled Axis aggression is rampant in the world.

XIII

Industrial Potential

Is the Soviet industry equal to the task of supporting adequately the armed services and the embattled civilians of the U.S.S.R.?

Before the outbreak of the war, the Soviet Union led Europe in the quantity of its industrial output. In the whole world it was second to the United States alone. The war has not only failed to demoralize labour and curtail production, but has on the contrary rallied the workers to turn out more supplies with which to fight off the invaders.

Of twenty-two leading strategic raw materials—oil, copper, lead, aluminium, etc.—in the event of a successful enemy blockade, England would be shut off from nineteen, Germany from eighteen, France, Italy, and Japan from fourteen each, the United States from nine, but the Soviet Union from only four.

The Soviet Union leads the world, on the basis of completed prospecting, in deposits of coal, oil, peat, iron ore, potash, forests, water power. It holds second place in the world and first in Europe for phosphorite reserves, and leads Europe in copper reserves.

Between 1928 and 1937 more than 2,500 large factories and mills, many of them the only ones of their kind in the world, were built. It is a far cry from the days of World War I, when Russia had a tiny industry, dependent upon other states.

In the production of electric power, the U.S.S.R. is

ahead of Great Britain, France, Canada, Italy, and Japan. A few years ago, the U.S.S.R. had already outstripped Germany, Great Britain and France in the output of such all-important strategic products as iron ore, manganese ore, electric steel, and super-phosphates.

Construction of Soviet machinery exceeds the old Russian level more than twenty-three times. Thousands of new types of machines were produced for the first time when the Five-Year Plans got under way. Modern engineering during those years has produced scores of thousands of aeroplanes.

As early as 1937 the Molotoff Motor Plant in Gorky alone produced more trucks than did all the motor plants of England. First place in Europe and second in the world is held by the U.S.S.R. in the production of lorries. In 1939 the U.S.S.R. had 558,600 tractors as against 30,000 in Germany and 18,000 in Italy—and it is a fact that a modern tank is nothing but an armed and armoured tractor!

Despite the rapid increase in the number of motor-cars and aircraft, by 1937 the U.S.S.R. could cover 70 per cent of its rubber needs by its own resources. Important achievements have been recorded in the cultivation of rubber-bearing plants.

Extensive mechanization of heavy labour processes has been introduced in all industries. Ninety-six per cent of oil extraction processes were mechanized by 1936 and 90 per cent of coal mining by 1938. This exceeded the extent of mechanization in both the United States and Germany. Mechanized ploughing, grain threshing, harvesting, and other agricultural processes are commonplace in the U.S.S.R. Labour-lightening machinery on the farm paved the way for smooth continuance of operations in wartime. Scores of thousands of women tractor drivers and combine

operators were trained to keep pace with the steady growth of machines.

But will these industrial riches fall into the hands of Germany? Not enough of them to be of vital help to Germany; not enough to cripple Russia. For Soviet industrial planning was done with an eye to the present emergency.

Very early the Soviets decided to rationalize their industrial geography by establishing their industries close to the sources of raw materials. Each part of the country was made as versatile as its natural resources permitted, resources that heretofore had lain unexploited underground.

In the years immediately preceding the German invasion, the Soviet Union developed a policy of creating for each centre of production its so-called twin. This is to say, a given type of production was not allowed to focus in one point; a similar centre was being built at the other end of the vast expanse of the Soviet country. A good example is the 'Second Baku.' Outside the U.S.S.R. it is generally known that Baku in the Caucasus is a great oil-producing centre, but it is generally unknown that a new oil-yielding area has been developed between the Volga and the Ural Mountains. In the early years of the Third Plan the relative importance of the 'Second Baku' increased from 6·5 per cent of the total oil production to 21·8 per cent. Prospecting has shown virtually unlimited potentialities in this newly opened oil-bearing area. It is situated even farther east than the Caucasus and is therefore quite outside the range of the most far-reaching German bombers, while Hitler's main fuel source, the Roumanian oil fields, are within reach of the Soviet Air Force.

Both Soviet industry and Soviet agriculture have been steadily expanded eastward. In this reshuffling, the old

centres, like Moscow and Leningrad, remained very significant industrially, to be sure. However, they ceased to be the exclusive sources of industrial output, while east of the Urals tremendous building up has been going on, converting the desolate and uninhabited Siberian wasteland into a giant beehive of manufacturing activity. The 1913 total of Russian industry, which was concentrated on the Western borders, is exceeded to-day by the Ural and Siberian output of coal, pig iron, and steel. Again, the Ural-Kuzbas (Kuznetzk Basin) Combinat, joining together the two new industrial centres of Siberia, is supplemented by the coal and copper resources of Kazakhstan. The Soviet Far East is rapidly coming into its own as an industrial country, turning out its own iron, steel, ships, and munitions.

How the population and industrial shifts were scientifically controlled with an eye on strategic considerations in the coming war is illustrated in the case of Kiev. Kiev's population in 1939 was 846,293. Since its geographical situation exposed it more than the rest of major Soviet cities to a foreign attack, the Soviet planners saw to it that Kiev did not grow at the rate of other metropolitan centres. This was definitely a part of defence planning. Not one of the eighteen cities which has attained a population of 250,000 or more since 1926 lies west of the Leningrad-Moscow-Krivoy Rog line.

Now we come to a question concerning which there are widespread misconceptions. German advances in the Ukraine, and the Soviet evacuation of the cities of Krivoy Rog and Nikolaev, have brought up the matter of the effect of Ukrainian losses on the U.S.S.R.'s industry and agriculture. The Ukraine has been incorrectly designated as the U.S.S.R.'s breadbasket. Although grain yield in the

Ukraine is at its highest to-day, this yield is but one-fifth of the total for the whole country.

Industrially speaking, the Ukrainian Soviet Republic is of great importance.

A serious but not insurmountable loss in the Ukraine was suffered by the Soviets when Krivoy Rog fell to the Germans, with its iron ore fields, a steel mill, a cold storage plant, and a coke and chemical works. But with 87 per cent of iron ore resources well within Soviet-held territory, the problem of substituting for Krivoy Rog's developed capacity becomes one of men, machines and skill.

The greatest stumbling block to satisfactory replacement of Krivoy Rog ore in the immediate future may be the inadequate supply of mining equipment. Hence, such equipment and other types of steel products needed for the U.S.S.R.'s battle of production are apt to be sought eagerly in the United States, particularly since the evacuation of Kharkov, one of the great Soviet machine-building centres.

XIV

The Ukraine

THE most serious inroads of the Wehrmacht have been in the Ukrainian Soviet Socialist Republic. The Ukraine, occupying one-fiftieth of the Soviet Union's area and containing one-fifth of the population, ranks high both agriculturally and industrially. Hitler always made it clear that if he could only grab it, the Ukraine would be the juiciest plum that he could pluck. At the party congress at Nuremberg in 1936, he shouted:

'If the Urals with their incalculable wealth of raw materials, the rich forests of Siberia, and the unending grain fields of the Ukraine lay within Germany, under National Socialist leadership, the country would swim in plenty. We would produce, and every single German would have enough to live on.'

Yet Hitler's purely territorial gains have been more in the nature of Soviet losses than of German benefits. For, to utilize Ukrainian industrial wealth, he must be able to operate Soviet-built and now Soviet-destroyed factories. Stalin's 'scorched earth' policy of demolishing everything useful in the path of the invader makes it incumbent on the Fuehrer to build his own plants.

What havoc the Soviet determination not to leave any exploitable facilities to the Nazis is playing with Hitler's plans may be judged by a recent broadcast on the Nazi-controlled Radio Belgrade. Heard by the United Press Listening Post, the broadcast appealed to the workers of the Ukraine to oppose the destruction of Soviet factories by

retreating Red Army units. In reply, not only does the Soviet population continue wholehearted help to its army, but skilled labour is usually evacuated and put to work in other factories, mines, and fields of the U.S.S.R. Thus, even if the Nazis are capable, through some exclusive magic of their own, of restoring the levelled plants in short order, they will have no qualified workmen to operate them, not even at the point of a gun. And it is scarcely advisable for the invaders to try to put to work the people who stay in the occupied places. The hazard of sabotage is too great. There has not been a single German claim of utilization of any factory in the Soviet parts taken since June 22nd, 1941.

The fierce patriotism of the Ukrainians certainly cannot be diluted by the looting and atrocities of the German soldiers who come from the have-not sections of Europe. And the people of the Ukraine with their long and proud historical past will remember that the final straw that broke the back of the German Empire came from them: it was the defeat administered by the Ukrainian people to the Kaiser's army of occupation. The Ukrainians were aroused by the immense theft of their rich harvests, which were shipped train-load after train-load into Germany, where Wilhelm II hoped to hold on to his throne a little longer with the aid of these foodstuffs. The population of Germany was starving after four years of exhausting war, and showed unmistakable signs of readiness to make short shrift of its overweening rulers.

The loss of industrial and agricultural districts of the Ukraine is severe, though not fatal for the U.S.S.R. However, the Nazi stay in those parts will not be so frutiful as the Kaiser's brief conquest. The Red Army on the southern front, the scores of thousands of Ukrainian guerrillas, the

policy of uncompromising demolition or evacuation of everything serviceable will see to this.

Even if anything of value were to fall into German hands, the price already paid would spell the eventual doom of the 'winner.' While the Red Army remains intact through its well-planned and orderly withdrawals, Hitlerian victories are founded on shifting sands. What matters in any intelligent consideration of the Ukrainian situation is not the temporary seizure of, say, Kiev—always known to the Soviet authorities to be particularly exposed to the expected aggression. The important fact is that after the German ranks have been further thinned out and their lines of communication stretched to snapping point, the real test will come. Evacuated territory can be regained later, if there are men and material available for a counter-offensive. Lost man-power cannot be replaced within the same generation.

When the final story is told, it will be learned that the Ukraine has been the biggest Nazi grave. It will be ascertained that for every stone in the pavements of the 1,000-year-old Kiev at least one young German's life was forfeit to a Ukrainian sniper's bullet. The Soviet defenders never regarded as decisive whatever fate was to befall Kiev. Their object in its stubborn defence was to inflict the maximum losses on the enemy, then to withdraw to another spot for which Hitler would again have to pay a price out of all proportion to its value. So high piled were the German corpses in the months-long struggle for Kiev that the Nazi command was compelled to print large numbers of standard death notifications for German families: 'Your son (husband) . . . . . was killed at the approaches to Kiev.'

I know the people of the Ukraine—I was born and raised among them, I lived, studied and worked with them before, during, and after the Revolution of 1917—and I can vouch that no matter how big is the edition of the Nazi command's death notifications, the Ukrainian people will see to it that every single one is duly filled up.

Hitler essayed the grab of the Ukraine because of its reputation as a flourishing garden. The mention of its name, before his attack, conjured up the vision of a country of coal and metal, of bread and sugar, of dance and song. In short, as a poet of another generation described it, of 'the land where everything betokens plenty.' What an incalculable economic, military, and political boon at home and abroad control of the Ukraine would give Hitler, with its mining and metallurgical industries, its advanced agriculture, and Europe's greatest waterpower-electric plant!

Hitler knew that each of the sixteen republics of the Soviet Union had a national nickname. Turkmenia is Land of Sunshine; Azerbaidzhan, Land of Black Gold (because of its huge oil deposits); Uzbekistan—Land of White Gold (cotton); Georgia—Gem of the Fatherland, and so on.

The Ukraine was known as Land of Plenty.

Even before the Revolution all the Russias and much of Europe looked to the Ukraine for their daily bread. Yet this vast country with its tremendous natural wealth, with an industrious and alert people, was neglected. Despite their long record of achievement—Kiev was a centre of world trade and culture a thousand years ago—the Ukrainians were contemptuously referred to by the moneyed Russian chauvinists as Little Russians. Ukrainian learning was suppressed; children were forced to attend Russified schools, much in the manner of the Germanization of schools in Nazi-conquered countries. The fertile black

earth was in the hands of the Russian, Polish or native *pani*. Most of the factories belonged to foreign interests.

But soon after the bloody fratricidal war which vented its most destructive fury on the Ukraine, a bitterly contested battle-front, this region entered upon an era of unprecedented progress. Following centuries of stagnation, the sleepy towns, immortalized in Gogol's novels, were transformed into huge industrial centres. New railways were laid, ports and mines reconstructed, new ones opened. Europe's largest power plant sprang up. Air lines were established in profusion. New factories and grain elevators appeared almost overnight. The swift reconstruction tempo soon outstripped the most advanced nations of the Continent. And this process was being duplicated in less exposed regions to the East—for the possibility of invasion was never lost sight of.

Glistening in different shades of delicate blue, the mighty Dnieper River, the pride of the Ukraine from time immemorial, linked with the most stirring events of its history, glorified in classic literature, painting and opera, rolled along. But it was not the old Dnieper that had once cut across the *pani's* Ukraine. It was a renovated river. Upon it rose proudly the powerful Dnieproges Dam, where for centuries hazardous rapids had interfered with navigation. Now the roaring turbines of the electric-power combine sent the vital current to giant collective farms on both sides of the river. Into the far-flung steppes, into the villages, State farms and mines of the Donetz Basin flowed the millions of kilowatts of the current in high-tension wires.

In the meantime, the agricultural economy of the Ukraine, mechanized and collectivized, was recording seven-league strides of its own. But although its output was incomparably higher than that of Czarist days, so great was

the industrial-agricultural growth of the rest of the U.S.S.R. that by the time Hitler struck, the Ukraine accounted for only one-fifth of the annual Soviet agricultural production.

On the high shores of the Dnieper stood the Ukraine's metropolitan centres that have been making the head-lines since the outbreak of the war. All very prosperous, none was more beautiful than Kiev, 'the Mother of Russian Cities.' Buried in a multitude of parks, gardens, and orchards, it was a beehive of industry and culture. All the Ukraine, in fact, was engaged in the pursuit of culture on an unparalleled scale. Its new intellectuals were recruited from among once illiterate workers and peasants, organically bound to the rest of the nation. During the first two Five-Year Plans alone, Ukrainian universities had trained 103,000 experts, including 41,000 engineers and technicians of various specialties, 28,000 teachers, 13,000 medical workers, and so on. In the same period about 192,000 specialists graduated from the higher technical institutes of the Ukraine.

There were only 45,483 teachers in the Ukraine in 1914, but by 1937 there were 181,507. In 1914 the entire expanse of the Ukraine was served by fewer than 6,000 physicians; by 1937 there were nearly 25,000 of them. By that time more than 16,000 agronomists, technicians and engineers were employed in the Ukrainian machine-and-tractor stations. Practically all these highly trained people were of the younger generation, brought up and educated under the Soviet régime.

All Ukrainian citizens take their citizenship seriously, knowing that only eternal civic vigilance will ensure to them the benefits that made them the envy of the aggressors. For example, when elections were held on June 26th, 1938,

out of 17,536,486 eligible Ukrainian voters, 17,467,909, or 99·62 per cent, went to the polls.

'Glorious Ukraine!' is an exclamation frequently met in the works of both pre- and post-revolutionary novelists and poets. They sing of the calm rivers flowing across fertile fields, of the picturesque countryside flanked by cherry orchards, of the heroic past of the nation fighting for its freedom. Many authors born in the Ukraine—from Gogol and Shevchenko to Korolenko and Danilyevsky—have romanticized their glowing attachment for the land. Russia's greatest painters—Repin, Semiradsky and others—drew inspiration from the beauties of the Ukrainian landscape. Russian music has been deeply influenced by the same Ukrainian romanticism, with Tschaikowsky, Mussorgsky and other masters using Ukrainian folk tunes and other melodies in their compositions.

Then came the day when Reichsfuehrer Adolf Hitler and his Propaganda Minister Josef Goebbels came under the same spell. The Goebbels-directed press began to wage its altruistic campaign for an 'independent nation' of all the Ukrainians, a few of whom were scattered in Poland, Rumania, Czechoslovakia, and elsewhere. It was a 'liberation' movement whose motivation was rather plainly revealed in Hitler's statement quoted on the first page of this chapter. It was a movement with an eye to the bowels of the Ukrainian earth with their industrial raw materials. The high-grade coal of the Donetz Basin beckoned to the 'liberators and the iron ores of Krivoy Rog, the manganese of Nikopol, the rock salt near Artemovsk. Besides, the Donbas boasts deposits of limestone, dolomites, fireproof clays—that is, of everything essential for smelting metal.

When the Nazis decreed their advance into the Ukraine, they found the Ukrainian people were realizing their age-

old dream of a free, prosperous life—in culture, industry, agriculture, and high standard of living, in the complete conquest of nature for the needs and service of mankind.

Then struck the lightning from the West. Sowing death and destruction in the happily busy countryside and the bustling model cities, the Luftwaffe and Panzer columns advanced to snatch the fruits of the Ukraine's titanic labours.

A life worth defending was the life of the Ukrainians, and they rose as one man in its defence. From the experience of Hitlerized Europe the people of the Ukraine could envisage their lot if the Nazis won. Determined not to allow this reversal to the Darkest Ages, they are grimly but stoutly smashing their precious achievements, won in the past twenty-four years through toil and sacrifice.

Unhesitatingly they blew up the Dnieproges Dam, perhaps the proudest, costliest monument to their own national genius. They are making sure beyond any doubt that Hitler does not find the solution to his dilemma in the Ukraine. They are giving an irrefutable proof to the rest of the civilized world that they will not compromise its cause. And, finally, at Rostov-on-Don they called a halt to the invader; they beat him back and initiated the first Nazi major retreat.

XV

The Red Navy

AXIS navy ministries must be realistic about the Red naval strength, no matter what the propaganda ministries may be broadcasting. *The Nauticus*, German Admiralty's year-book, in its 1938 edition stressed that 'it is necessary to recognize the incontestable fact that the U.S.S.R. possesses at the present time the most powerful submarine fleet in the world.' This statement was also shortly afterwards confirmed by *Jane's Fighting Ships*.

The official German annual also invited attention to 'another incontestable fact,' namely, 'that in three maritime regions, *i.e.* in the Baltic and the North Sea, in the Mediterranean and in the Pacific, every consideration of strategy must henceforth reckon with a factor (which until recently was neglected after the end of the World War), viz., the modern efficient battleships flying the Soviet standard.'

In recent years the Soviet Union has made a drastic switch from the custom of relying on foreign shipyards for its naval strength. In February, 1941, Admiral I. S. Isakoff, Chief of Staff and Vice-Commissar of the Navy, stated:

> At one time antiquated cruisers and destroyers of the *Aurora* and *Potemkin* vintage formed the nucleus of our navy. Embodying the technical level of the beginning of the twentieth century, these vessels bore the trade marks of various shipbuilding companies working according to British designs, on French capital and with German equipment.
>
> Their place has now been taken by more powerful and faster vessels built according to the last word in steam-turbine, electric

> and Diesel engineering. These new ships with a larger radius of action and heavier armaments proudly bear the trade marks of the Sergo Ordjonikidze, André Marty and other Soviet shipyards. Our sailors and shipwrights are proud of the fact that not only are these vessels completely modern, but that they have been built according to Soviet designs, by Soviet workers and engineers, and from Soviet materials.

Admiral Isakoff recalled how only recently the Soviet coastal defences employed guns similar in type to the French Canet and the British Vickers of the time of the Russo-Japanese war. To-day, sunk in concrete and shielded by armoured cupolas, there stand heavier, quicker-firing models of longer range, originating in the domestic armament works.

Corresponding advances have been made in the naval air arm, the auxiliary fleet, and the bases, which have increased in numbers as the Red Navy made its seven-league strides. Some interesting disclosures were made on the U.S.S.R.'s Navy Day in 1940 by Admiral N. G. Kuznetzoff, People's Commissar of the Navy:

> Our Navy has grown as follows during the past two years: Last year we received 112 vessels, large and small, and including torpedo cutters; this year we are receiving 168 units, *i.e.* a gain of 50 per cent as compared with the number of ships received last year.
>
> If the tonnage of the vessels received last year is taken as 100 per cent, this year we shall receive 221 per cent; this means that the increase in the number of vessels received from 112 to 168 does not apply to small units, such as torpedo cutters, but relates chiefly to larger vessels. These figures refer only to the *surface* vessels of our Navy.
>
> The submarine fleet shows a still more rapid growth. The submarines being launched this year constitute nearly 300 per cent, both in number and tonnage, of those commissioned last year.

But no navy, regardless of tonnage and armament, is better than the skill and fighting spirit of its men. What of the sailors and marines of the Soviet Union?

Great fighting traditions and a personnel that grew up to take pride in them are legitimately listed by the great navies of the world as part of their inherent strength. That is why the story of how Russia's Baltic Fleet became known as the Red Banner Baltic Fleet is worth telling here.

On December 15th, 1918, the atmosphere of the Gulf of Finland was shattered by artillery fire from four battleships 'of unknown nationality,' directed against the sharpshooter divisions of the Red Army. In those days, as in our own, unexpected artillery attack rather than a formal diplomatic break used to herald a change in international relations. The fire from the four battleships signified that the intervention of the Entente was being extended to the Baltic.

It was the task of the Russian fleet to make its stand in the narrow strip of shallow water, keeping a sleepless vigil over the exhausted Petrograd (now Leningrad). The fleet had to take and repulse the combined offensive of land armies, aircraft, and naval forces bent on capturing the city. Every man, every shell, every ton of coal, every pailful of petroleum counted, for none could be replaced.

The Baltic Fleet fulfilled its mission, often going to sea with less than half its crews because the other half were fighting on Southern and other fronts, as cavalrymen, infantry, or what you will. Limping on both propellers, a ship's furnace would be fed coal-dust mixed with earth sweepings from the emptied bunkers. In the midst of twenty-four-hour-a-day battles, the men dined on a saucerful of millet gruel. Under the water and ice pack they would make their way to the Revel roadstead in a submarine which to-day would not be used for a test descent in the safest Soviet harbour.

All these feverish activities took place to the accompaniment of primitive anti-aircraft fire at the roaring enemy planes that daily bombed the docks and the city. At night and in a storm the Baltic sailors often dashed about in their torpedo cutters, without lights and without lighthouses, along questionable passages between their own and enemy mine-fields. All this appeared simple, necessary, and realizable in those days. Only years later this artless and sincere heroism found its historic appreciation when the Baltic Fleet was awarded the Order of the Red Banner.

No fewer than seventy-two of the best foreign vessels, including battleships with 15-inch guns, had spent fourteen months in the Gulf of Finland. About a dozen of them remained on the bottom of the Gulf when the survivors finally sailed back. The English submarine *L-55* was salvaged by the Soviets ten years later and may be seen to this day in the ranks of the Red Banner Baltic Fleet, under the same name and once again on Britain's side.

To-day the Baltic waters are alive with Soviet fighting craft of every type known to advanced naval science, including perhaps some units that may be legitimately listed as 'secret weapons.'

Contrasting with the historic Baltic Fleet is the Red Navy's newest armada, the Northern Fleet, based largely on Poliarnoye in the Arctic. It is destined for an increasingly important rôle in the present war and may expect to be called upon to relieve enemy pressure on the trade routes to the United States.

When the Soviets completed the construction of the Baltic-White Sea Canal, on Stalin's initiative the Moscow Government decided to found a great new fleet beyond the

Arctic Circle. The project was motivated by the availability of ice-free harbours of the Kola Peninsula. These endow the northern route with vital significance for communications, as was learned in World War I.

On May 18th, 1933, the seed of the Northern Fleet was sown when a squadron of the Baltic Fleet was transferred over the newly-completed Baltic-White Sea Canal. When the sailors arrived beyond Murmansk at the spot where Stalin suggested the building of a city and a naval base in the wilderness, they could not find a single piece of ground that could be dug up with a shovel: all terrain was of rocky formation.

A new city, Poliarnoye, had to be blasted out of the cliffs and hills. To widen the new port, granite had to be dynamited under the water. Many thousand tons of it had to be blown up in order to even up the football field at the new sports stadium. Concrete had to be poured over telegraph poles at least to half their height, because without it they could not be attached to the granite foundation.

In the autumn and winter the fiercest cold and thickest fogs assail the city which nestles on a mountainside, facing the North Pole. The streets are straight. The two- and three-story homes, painted white, yellow, and rose, rest on tall granite columns. There is the House of the Red Army and Navy, a club, a school with the regular ten-year course as complete as in other parts of the U.S.S.R., a communal restaurant, a library, public nurseries, athletic facilities, a shopping district.

Soviet surface craft and submarines have sailed the Arctic seas in weather which is considered unsafe for normal manœuvres by navies elsewhere. Scarcely charted, constantly tossed by terrific storms, shrouded in impenetrable fogs, the Barentz Sea is at its most inhospitable in the

autumn and during the long polar night. When in World War I the German sailors were forced to visit those waters, they described the sailing conditions thus: 'The evil spirits from all the seas of the world are concentrated in the Barentz Sea.' It is here that the Red Northern Fleet makes its training cruises. No enemy attacking in the Far North would possess even a fraction of the U.S.S.R.'s Arctic experience or facilities.

As the Baltic-White Sea Canal serves as a channel of communication between the Red Banner Baltic and the Northern Fleets, so the latter is linked by the Northern Sea Route with the Pacific or Far Eastern Fleet of the Red Navy. With unmistakable pride, the sailing men of the Soviet Far East introduce themselves as, 'We are from Vladivostok.' There is considerable dignity in that self-introduction, based on the knowledge that the Man in the Street, any street of the Soviet Union, is familiar with the fighting mettle of the Pacific Fleet. This fleet—co-ordinated with the mighty air force also based on Vladivostok and surrounding territories—could promptly cut off the Japanese lines of communication, in the event of trouble with Tokyo.

To-day large numbers of fighting ships and auxiliary craft operate in the Black Sea, beyond the Turk-controlled Dardanelles, the gateway to the Mediterranean. Already the Black Sea fighters have accounted for staggering German-Rumanian losses in the siege of Odessa and in their invasion of the Crimea.

XVI

If Japan Strikes at Russia

If Japan should strike at Russia, it would not be necessary for the Soviet Union to withdraw any of its troops from the West. The Red Banner Far Eastern Army is an independent military unit that could match any forces Japan would be likely to put in the field. If need for reinforcements arose, there would be available in the Maritime Provinces scores of thousands of special frontier defence guards, splendidly trained and equipped. Further, there would be 100,000 troops of the Mongolian People's Republic, which has a pact of mutual assistance with the U.S.S.R. The Mongolian troops have been trained by Red Army experts and equipped with the latest Soviet weapons.

With the Japanese menace continually before them, the Soviets planned the development of Siberia to meet it. There has been a great eastward spread of agriculture in the past decade. Previously uninhabited provinces were colonized. It is no secret that these settlers were not only good farmers, but trained reservists.

The Soviets have constructed a belt of fortifications that runs from Vladivostok to Lake Baikal. This stretches along the whole Soviet-Manchukuo border and beyond. With subterranean hangars and garages for thousands of planes and tanks, with bombproof and gasproof underground barracks and other facilities that stretch inland to a depth of three miles, the Far Eastern line may have more than a thousand individual strongholds. Possibly the strong

obstacles available there, such as tank traps, are superfluous, because the mechanized strength of the Japanese Army over long fronts is negligible.

Sceptics who, until the acid test on the European front, questioned the potency of the Red Air Force, may be more inclined now to credit the Far Eastern Red Army, as I do, with the greatest air arm of the Pacific. All Japanese bases in Korea and Manchukuo are within easy range of Soviet aircraft. The densely populated islands of Japan proper are near-by too, as modern Soviet bombers fly. Nipponese centres are far more vulnerable than those of any other country, because of the fragile construction necessitated by earthquakes.

Soviet advantages in the air are equalled by the positions of the Red land forces. The Soviet frontier surrounds Manchukuo on three sides. From the east, north, and west the Far Eastern Red Army is already poised to strike back in a pincer movement if attacked. This great Soviet arc about the direction of a possible Japanese thrust is more than 600 miles deep.

The U.S.S.R.'s Far Eastern territories raise their own food, have their own aircraft plants, shipbuilding yards, and rounded economy. The Trans-Siberian Railway has been equipped with double tracks that stretch from Vladivostok to the Urals. A new parallel railway was built a few years ago, north of the old line. Before the completion of the new railway, a Japanese War Office report estimated that it would multiply the military transport opportunities of the Trans-Siberian sevenfold in comparison with the line's capacity in the Russo-Japanese War of 1905. Other shorter railways criss-cross Siberia, and the entire Soviet Far East is also serviced by an elaborate system of waterways, air routes and motor highways.

The tremendous plains on both sides of the frontier in the Far East are ideal for operations of cavalry and armoured cars, both of which are plentiful in the Red Banner Far Eastern Army.

The German General von Bülow several years ago sounded this warning to Japan: 'Although the Soviet Air Force is well over 600 miles away, it represents a greater danger to Japan than the whole United States Navy.' He was not belittling the United States Navy; he had in mind certain hard facts of geography and aviation.

The Japanese Admiral Nakamura must have had these in mind, too, when he said, apropos of a possible attack from Vladivostok: 'Many of our great commercial and naval harbours would be open to attack, and the enemy, being well informed as to our resources, would know in what direction to concentrate his efforts. On the Pacific coast, Tokyo, Yokohama, and the naval arsenal of Hokohukka would lie open to the visitations of hostile flying machines. Osaka, the heart of our national industry, would not be beyond an enemy's reach, and the swarming industrial hives of Kuyshu would present him with innumerable targets.'

XVII

Stalin as a Military Leader

THE destiny of the world may depend on the resourcefulness and energy of the man who plans the key moves of Russian defence. It is important to know something of that man's background.

When Josef Stalin became Commander-in-Chief of the armed forces of the U.S.S.R., a few days after the German invasion, he was returning to a drama in which he had played a vital rôle once before. Between 1918 and 1922, Stalin was the principal trouble mender in the military affairs of the Soviet Republic. He was despatched repeatedly to take charge of the most critical battle-fronts during the Civil War period. He was Lenin's closest collaborator in working out the strategy of the campaigns from which the Soviet Government emerged victorious.

In those days, military leaders had to possess tremendous physical stamina and the capacity for clean-cut decision under complex and swiftly shifting conditions. There was the time, for instance, when Lenin and Stalin were confronted with the offensive by the interventionists in the spring of 1918. These were landing their troops at such widely scattered points as Murmansk, Archangel, Vladivostok, and the Caspian Sea. Naval lanes were then the principal avenues of entry into Russia. The newly-formed Red Army was compelled to retreat temporarily from the shores of the Soviet seas, except those of the eastern part of the Gulf of Finland and the mouth of the Volga River on the Caspian.

The revolutionary sailors had created on the Volga, Dnieper, North Dvina, Onega and other bodies of water adjoining the fronts no fewer than fourteen river and lake flotillas. They often converted merchantmen and barges into fighting craft. But that was not enough. A potent and novel defence scheme was evolved by Lenin and Stalin: to transfer by railway and inland water routes the Red submarines that were available in the Baltic.

Stalin energetically directed the movements of the minelayers and armed cutters along the Mariinsky Waterway System through which they eventually reached the Volga and Caspian Sea. From the naval stronghold of Kronstadt four submarines were transported by rail as far as Saratov, where they were launched into the Volga, thereafter proceeding under their own power to the Caspian Sea. Stalin recruited the personnel for these flotillas largely from the Red Baltic Fleet.

It was by chance that Stalin was first thrust into military responsibility. In June 1918, he set out for Tzarytzin in the capacity of Commissioner of Food Supplies for all South Russia. He was accompanied by a Red Army unit and two armoured cars. He found Tzarytzin the focal point of the entire Southern front. On his arrival, Stalin was appalled by the chaotic situation he found not only among civil organizations but in the military command as well. Cossack counter-revolution was rapidly developing which was receiving extensive encouragement from the German invaders occupying the Ukraine. Many points near Tzarytzin were already in the hands of the Cossack bands. The whole rich grain-producing region of North Caucasus was in imminent danger of being cut off. There would be no bread coming to the already starving Moscow and Petrograd.

Insufficient supplies and general muddle convinced Stalin that the line of communications south of Tzarytzin had to be restored at all costs. East of him Muravyez, an officer of the old Czarist army whom the Soviets had placed in command of the Red troops against the Czechoslovak Corps, turned traitor. The English were making inroads in Baku. Ignoring the previously determined scope of his duties as Commissioner of Food Supplies, Stalin wired to Lenin in Moscow: 'I am rushing off to the front, I shall be writing to you only on business. I am driving and bowling out everyone necessary. I hope that we shall soon restore the line. You may be sure that we will spare nobody, either ourselves or others, and that we will deliver the grain in spite of everything. If our military "experts" (bunglers) had not been loafing on the job, the line would not have been cut. And if the line is restored, it will be not because of them, but in spite of them.'

Smashing his way through great concentrations of hostile forces, in an effort to join with Stalin in the defence of Tzarytzin, was another civilian turned general, Klim Voroshiloff, who was leading the Ukrainian Revolutionary Army. This army consisted of workers from the Donbas (Donetz Basin), of poor peasants of the Ukraine and the Don region. They were forced to retreat across the Don steppes under the onslaught of the German troops. They reached Tzarytzin where the situation was growing more critical by the hour. This state of affairs received official recognition from Moscow as Stalin was charged, in a telegraphic order of the Revolutionary Military Council of the Republic, with 'establishing order, consolidating the detachments into regular units, establishing a proper command, after discharging all insubordinates.' A superscript added: 'The present telegram is being sent with Lenin's approval.'

With Stalin as its head, a Military Council sprang into action, accomplishing what had been called impossible the day before. Divisions, brigades, regiments rapidly took form. The staff, the supply organs, and the entire organization behind the lines were ruthlessly purged of all counter-revolutionary and hostile elements. The government apparatus was tightened up.

It is difficult to visualize what was and had to be done until one knows that before the appearance of Stalin and the arrival of Voroshiloff with his Ukrainian fighters, Tzarytzin was a huge nest of rabid monarchists, terrorists of every description, and other mortal enemies of the Bolsheviks. The hostile elements pervaded even the Soviet institutions. Stalin's Military Council set up a special Cheka —Extraordinary Commission—to purge the city of its Fifth Column.

Stalin's rôle at this period can best be grasped from the testimony of an enemy, Colonel Nosovich, former commander of the field staff of the army, deserted the Soviets and went over to General Krassnoff, who, with the support of the Germans, led the White Guard Cossack troops in the region of the Don. In the White Guard newspaper *Donskayo Volna* of February 3rd, 1919, Nosovich wrote:

> Stalin's chief commission was to furnish food supplies for the northern provinces, and in performing this task he received unlimited power. . . .
>
> The line from Gryazi to Tzarytzin was completely broken. In the North there was only one way left to receive supplies and maintain communications: the Volga. In the South, after the Volunteers occupied Tikhoretzkaya the situation also became extremely precarious. For Stalin, who received his supplies exclusively from the Stavropol province, this situation virtually spelled an end to his mission in the South. But it is apparently not in the rules for a man like Stalin to give up a job once he has undertaken it. Out of justice it must be admitted that any of the old administrators might well envy his energy, and his capacity to adapt himself to circumstances and the business in hand should serve as a precept to many.
>
> Gradually, as he was left with nothing to do, or rather as his direct task diminished, Stalin began to go into all phases of the city's administration and into the extensive work of defending Tzarytzin in particular, and the whole Caucasian so-called revolutionary front in general.

The White Guard Colonel acknowledges in the same article the tense scene at Tzarytzin where counter-revolutionary plots in 'the most trustworthy and secret places' awaited discovery by the Cheka. The city prisons overflowed with anti-Soviet plotters. He goes on:

> The prime mover and supreme authority from July 20th on was Stalin. A simple conversation over direct wire with Moscow . . . resulted in . . . the order which placed Stalin in charge of all military and civil affairs. . . .

Nosovich then confesses that Stalin's repressive measures were fully justified, as an elaborate counter-revolutionary organization, financed from outside, flourished at Tzarytzin under the leadership of the engineer Alexeyev and his two sons. When they were uncovered, Stalin's decision was brief and to the point: 'To be shot!' Many Czarist officers were seized and executed by the Cheka in connection with this conspiracy.

Soon Tzarytzin was transformed. Before Stalin's coming, White Guard officers promenaded in the parks and danced to band music there. Now the city became a Soviet fortress with the strictest military discipline. This tightening up of the rear raised the morale of the Red regiments in the firing line. The spirit of firm leadership was felt everywhere.

Stalin's leadership was not limited to his desk job. When a modicum of order became apparent in the rear, he left for the front. There he grappled with strategic problems in the same manner as that which characterized his organizational work.

Krassnoff's Cossacks were in a full offensive against Tzarytzin by August, 1918. Their obvious strategy was to deliver a concentric blow that would catapult the Reds into the Volga. The Whites were splendidly trained, organized, and supplied by foreign interests. The Red troops, headed by a Communist division composed exclusively of the Donbas workers, were taking punishment stubbornly.

At this critical time, according to Stalin's close collaborator on that front, Voroshiloff: 'He was as calm and self-possessed as ever. He literally went without sleep for days on end, dividing his intensive activities between the theatres of action and army headquarters. The situation on the front became almost catastrophic. By a well-planned manœuvre the Krassnoff units were pressing our harassed troops, which had sustained terrific losses. The enemy's front, shaped like a horseshoe with its two ends resting on the bank of the Volga, contracted from day to day. We had no way of retreat, but Stalin did not worry about this. He was filled with a single concern, with a single thought—to destroy the enemy at any cost. Stalin's invincible will was transmitted to all his closest comrades-in-arms, and in spite of the almost hopeless situation, no one doubted we should win. And win we did. The enemy was crushed and flung far back towards the Don.'

About this time the first substantial victories were recorded on other fronts. The Red Army on the eastern front and the Volga Flotilla had smashed the interventionist Czechoslovak Corps and the troops of a White Guard

government set up at Samara. But at the end of 1918 a new catastrophe threatened. Seizing power in Siberia with the aid of interventionists, Admiral Kolchak opened his first offensive. On Christmas Day he forced the Reds' Third Army out of the strategic city of Perm. Pinched in a narrowing semicircle, the Third Army was utterly demoralized. For six months it fought, unrelieved and without dependable reserves. Its rear was unreliable. Its supplies were so terribly disorganized that its 29th Division fought for five days 'literally without a crust of bread.'

The Third Army was in a territory completely without roads. Its staff was incompetent. Its tremendous front straggled for over 400 kilometres. The weather reports registered —35° C. Treason was widespread among the Third's commanding personnel, which was composed of ex-Czarist officers. Wholesale surrender of regiments took place. The army was retreating in disorder—driven 300 kilometres in twenty days, losing 18,000 men, scores of cannon, hundreds of machine-guns.

Lenin and the Central Committee were alive to the gravity of the collapse at Perm. The causes had to be ascertained and order restored in the disintegrating army. To carry out the highly responsible assignment, the Central Committee named Stalin and Dzerzhinsky. There seemed to be an obvious limitation of his functions, for Stalin and the rest of the commission were merely directed to make an 'investigation of the causes for the surrender of Perm and for the latest defeats on the Ural front.'

Stalin interpreted the order as intended to result in practical steps for straightening out the difficulties, for consolidating the front, and so on. With characteristic dynamism, he gathered and rushed to the front 1,200 reliable infantry and cavalry troops. Two days later two

more cavalry squadrons were despatched. Such promptness and firmness told. The enemy offensive was checked. Red morale was boosted immensely. A counter-offensive for the recapture of Perm was launched.

Behind the lines Stalin initiated a purge in the government offices. In the important Vyatka and provincial towns strong revolutionary organizations were set up. The Vyatka railway bottlenecks were cleared. On the right flank Uralsk was taken.

In the spring of 1919 offensives were unleashed on all fronts by domestic counter-revolutionists and foreign invaders. The main blow was to come from Kolchak in the east. At the same time General Denikin advanced from the south, the Poles from the west, General Yudenich from the north-west, the British from the north. The British had already taken Baku.

A most menacing situation confronted Petrograd when, in the midst of decisive battles on the eastern front, General Yudenich advanced on the strategic centre. He was supported by the English Navy, White Guard Esthonians, and Finns led by Field-Marhal Mannerheim, a former favourite of the Czar. Betrayal at the front resulted in whole regiments going over to the enemy. The entire Seventh Army wavered when the forts of Krasnaya Gorka and Seraya Loshad openly rebelled against the Soviet rule. Overwhelming Yudenich forces were at the gates of Petrograd. Again the Central Committee and Lenin recognized this front as the critical one at the moment. They called on Stalin to assume command.

While taking a hand in the operative work of the army staff, Stalin mercilessly purged all staffs of traitors. In three weeks' time the workers and Communists of Petrograd were fully mobilized. Lenin received the following telegram:

'Following Krasnaya Gorka, Seraya Loshad has been captured. Guns on both forts are in perfect order. The naval specialists assert that the taking of Krasnaya Gorka from the sea goes counter to all naval science. All I can do is weep for such so-called science. The rapid taking of Gorka is the result of the grossest interference on my part and on the part of civilians in general in field operations even to the point of countermanding orders on land and sea and imposing my own. I regard it my duty to declare that in the future I shall contine to act in this manner, despite all my respect for science. Stalin.'

Six days later Lenin learned of other improvements. There did not remain a single case of individual or group desertion from the Red ranks. Deserters were returning in thousands. Desertions in the White Guard camp grew apace, 400 men coming with their arms to Stalin within a single week.

The Red counter-offensive got under way. The reason for the offensive as given by Stalin is characteristic of his entire outlook: 'Although promised reserves have not yet come up, to remain longer on the line where we had halted was out of the question—it was too near Petrograd.'

The Whites were on the run. Prisoners, cannon, automatic guns, cartridges were falling into the hands of Stalin's men. Stalin's wire to Lenin concluded: 'Enemy ships do not show themselves, evidently they are afraid of Krasnaya Gorka which is now entirely ours. Urgently dispatch two million rounds of cartridges at my disposal for the Sixth division.

The crucial stage of the Civil War was still to come. Undeterred by their early failures, the interventionists, now including fourteen countries, had organized their second campaign against Soviet Russia in the autumn of

1919. General Denikin was this time to deliver the main blow from the south. Simultaneously Yudenich and White Guard Poles were to strike from their respective directions. The huge southern front was folding up, rolling back under the pressure of the Whites, equipped and supported by the World War I Allies. The people of Russia were starving. Their industries were motionless because of lack of fuel. Counter-revolutionary activities flourished even within Moscow, which was also threatened by the advancing enemy. Tula was also in danger.

Before accepting the Central Committee's appointment to the southern front where he was to join the Revolutionary Military Council, Stalin said that he would undertake the life-and-death task on three conditions: 1. Trotsky must not interfere in the affairs on that front and must in fact stay outside its lines of demarcation. 2. Staff and command members whom Stalin considered incapable of handling the responsibilities involved must be recalled immediately. 3. New qualified individuals selected by Stalin as suited to this work must be ordered to the southern front at once.

All conditions imposed by Stalin were accepted as valid.

From the Volga to the Polish-Ukrainian frontier sprawled the cumbersome southern front. It held several hundred thousand Red troops. They had no precise plan of operation, no clearly defined objective. Stalin walked into a precarious and confused organization. The Soviet troops were taking a severe beating on the main sector, Kursk-Orel-Tula. They were wastefully marking time on the eastern flank.

Stalin studied the problems of the southern front. Then he worked out the Red counter-strategy and personally guided its application. He overruled the proposal made (most likely by Trotsky) to launch the main attack by the

left flank from Tzarytzin toward Novorossiisk over the Don steppe. His note to Lenin, formulating his own scheme, was illustrative of his strategic talents and decisive approach. Pointing out that the old plan would make the Reds attempt a passage over hostile territory, roadless and infested with strong detachments of Denikin's Cossacks, Stalin insisted that the cornerstone of the offensive be the main attack on Rostov through Kharkov and the Donetz Basin. Why? Because, said Stalin:

> First, in this case we shall be in territory sympathetic to us, which circumstance will facilitate our advance. Second, we shall have in our hands an extremely important railway network (of the Donetz Basin) and the main artery that supplies Denikin's army—the Voronezh-Rostov line. . . . Third, by this advance we shall cleave Denikin's army in two. One part, the Volunteers, we shall leave to be devoured by Makhno (a bandit chieftain in the Ukraine), and the other, the Cossack army, we shall place under threat of an attack in the rear. Fourth, we shall be in a position to pit the Cossacks against Denikin who, in case our advance is successful, will try to transfer the Cossack detachments to the West, and this the majority of the Cossacks will not agree to. . . . Fifth, we shall get coal and Denikin will be deprived of coal. There can be no delay in accepting this plan. . . .

Stalin's plan was again accepted by the Central Committee, which agreed that the straight line was not the shortest route between two points in the Civil War. The results are known to all who have studied the history of that war. Stalin's plan of operation for the southern front was the turning point of the war. Into the Black Sea were pushed Denikin's armies. The White Guards were driven out of the Ukraine and North Caucasus. There was no longer any question of losing Moscow.

Instrumental in the triumph over Denikin was the formation, on the initiative of Stalin and Voroshiloff, of the

legendary First Cavalry Army. The step was a radical departure. It was the first time that cavalry divisions had been put together into so great a formation as an army. Trotsky opposed this.

Budenny was made commander of the new army, with Voroshiloff and Shchadenko as the other members of his Military Council. The successes of the First Cavalry Army in the Civil War and in the Soviet-Polish War of 1920 fully bore out Stalin's idea of the potency of highly mobile masses of fighters. The mounted army later evolved into the great armoured, mechanized-motorized contingent that was to be the first to check the sweep across the Continent of Hitler's Panzers.

Also on the southern front there was effectively applied Stalin's method of choosing the main direction of an offensive and of concentrating upon it the best shock detachments for a decisive crushing of the enemy.

In January 1920, a series of mistakes were made by the Red field headquarters near Rostov, resulting in a slowing down of the advance. The White Guards got a breathing spell, recovered somewhat, and made ready to snatch from the Reds the fruits of victory. The Central Committee telegraphed to Stalin that he must immediately join the Military Council of the Caucasian front so that 'thorough unity of command' might be achieved, authority of field headquarters and of army command might be bolstered, and local forces utilized on a broad scale.

Taking advantage of the Polish attack on Soviet Russia, Baron Wrangel opened his own offensive from the Crimea and seriously menaced the newly-liberated Donetz Basin and the entire south. Stalin was at once ordered to form a Revolutionary Military Council, and Lenin wrote to him: '. . . . concern yourself exclusively with Wrangel.'

Stalin's plan for expelling Wrangel from the Ukraine worked, but illness prevented him from supervising its details to the end. When Yudenich sought to relieve pressure on his White Guard comrades at the height of fighting on the southern front, he again went after Petrograd, and this time was routed finally.

In the Polish war proper, Stalin was a member of the Military Council. The Poles were defeated, Kiev and all of the Ukraine on the Dnieper's western bank were cleared of the invader. The Stalin-fostered First Cavalry Army, headed by Budenny, smashed its way nearly to the gates of Warsaw. Near Kiev, at Berdichev and Zhitomir and elsewhere, the Polish forces suffered decisive reverses.

It was Red Commander Frunze who, in the autumn of 1920, crushingly beat Wrangel in the historic Battle of Perekop. The Baron and what was left of his armies sailed from the Crimea on November 16th, 1920. Great contributions were made to the campaign by the flotillas of the Sea of Azov and of the north-western part of the Black Sea. The fast-moving First Cavalry Army managed to arrive on this front in time to make itself felt.

By October 1922, the Red Army occupied Vladivostok, driving out the Japanese, the last remaining interventionists on Soviet soil.

Because of his distinguished service in defending Petrograd and his personal valour, Stalin—on Lenin's proposal—was awarded the Order of the Red Banner. In decorating him, the Central Committee cited his 'further self-sacrificing work on the southern front.' This recognition came on December 20th, 1919.

From the end of the Civil War to the formation of the Supreme Military Council in March 1938, Stalin held only two government posts. He held an elective membership in

the All-Union Central Executive Committee of the Soviets. Also, he served on the small and powerful Council on Labour and Defence. This body's function was the supervision of all governmental activities for the utmost co-ordination of the national economy with defence needs. Since March 13th, 1938, in addition to growing duties in other fields, Stalin has been a member of the eleven-man Supreme Military Council. Its function is 'the discussion and decision of all main and fundamental questions pertaining to the building up of the Red Army.'

In intimate collaboration with the Soviet High Command, composed of the men who served with him in the Civil War, Stalin is once again guiding the destinies of the fronts which became so familiar to him in that war. He fought there before, under conditions no less trying and grave than those of to-day—and he won every campaign that he undertook.

XVIII

Three Soviet Marshals

To Klimenti Voroshiloff, Commander-in-Chief of the North-western Front and First Marshal of the Soviet Union, goes the credit for converting the German Blitz lunge at Leningrad into a long-drawn-out and staggeringly costly siege.

At the outset of this drive, Leningrad seemed like a tempting plum on a branch overhanging Germany's back-yard. Military spokesmen in Berlin were free with their predictions that the gathering of that plum was a matter of days.

Voroshiloff's shrewd cool-headed tactics and the spirit of the fighting force he welded provided the Nazis with one of their most unpleasant surprises of the war. If Leningrad had fallen in the tenth week of the attack, it would have been paid for even then at a price heavy enough to sober any Nazi rejoicing. The hollow victory at the expense of irreplaceable German man-power would not solve but, as in Kiev, aggravate Hitler's problems.

Repeatedly, Panzer columns trying to stab their way into the city have been pinched off or driven back with heavy losses. German planes trying to demoralize the defence have been shot down by the hundred. Outlying villages have been captured at heavy sacrifice of men and equipment, only to be retaken later in driving counter-attacks by bayonet-wielding Soviet infantry, supported by tanks and artillery. Many isolated bodies of German troops have been annihilated by raiding guerrillas, and the frustrated Nazis can answer these tactics only by killing hostages.

A Nazi weakness bared on all sectors of this front—and, incidentally, also reported during the Greek campaign—is the avoidance of hand-to-hand combat. This is because the German soldier of to-day is accustomed to having his path shielded by tanks. In some regions adjoining Leningrad the deploying of Panzer units is difficult, and Voroshiloff's men have been exploiting this difficulty to the utmost by swift and fierce infantry sorties.

In response to the First Marshal's appeal, hundreds of thousands of Leningrad civilians have rallied to People's Army detachments. They have developed skill at operating machine-guns and at tossing hand-grenades and petrol bottles at tanks. Civilian morale has been at high pitch, and workers in the city's factories, instead of being terrorized by the attack, have intensified the output of their industries. Meanwhile, the city's universities, opera, and ballet were functioning normally, with theatrical companies travelling to the front to give additional performances for Soviet fighters.

Early in the game, Berlin prophesied that the Luftwaffe would make another Rotterdam of Leningrad. Later, Berlin radio and communiqués several times paid tribute to the Leningrad ring of anti-aircraft batteries protecting the city. On one occasion, when about thirty Nazi planes took advantage of a dense fog to raid a suburb at low altitude, fifteen of them were brought down by anti-aircraft guns. Two more fell prey to Red fighters, and the rest turned tail.

When Voroshiloff calls for sacrifices from Red Army men or civilians, they know he is asking for nothing that he himself has not been willing to give throughout his career.

Voroshiloff was born in 1881, into the family of a railway watchman and a charwoman. At the age of seven, Klim went to work in the mines for ten kopecs a day. When he

was ten, he tended cattle for a big estate-owner, coming to the assistance of his unemployed father. Until the age of twelve, he could neither read nor write. All his family could give him was the shabby education of the old Russian rural school. The rest of his education was supplied by the life of a professional revolutionary, replete with arrests, imprisonment, exiles, incredible escapes.

In 1903 the youth joined the Bolsheviks. In the Revolution of 1905, 'the dress rehearsal' for the November Revolution of 1917, Voroshiloff was the leader of organized labour in Lugansk, Donetz Basin. He set up detachments of Red Guard, obtained fire-arms, and instructed his comrades in their use. Incidentally, he is one of the foremost marksmen of the Soviet Union. His personal baptism of fire came in March 1918, when the First Lugansk Guerrilla Detachment, organized and led by him, engaged in a battle with the Germans attacking Kharkov.

When Lenin promulgated his decree for the organization of the Workers' and Peasants' Red Army, into which any one could volunteer 'who is willing to sacrifice all his energies, his very life to defend the conquests of the November Revolution,' Voroshiloff took the initiative in the Ukraine in unifying many scattered Red Guard units. In April 1918, he called a conference of the commanders of these many small fighting contingents. They met through the night at the Rodakovo Station. His proposal to weld them into what became known in history as the Fifth Ukrainian Army was enthusiastically accepted. Voroshiloff was named commander. At dawn he led the young army into battle.

The unification tremendously multiplied the strength of the Reds. On the very first day of its existence the Fifth Ukrainian had repulsed the German attack on Rodakovo.

The enemy sustained heavy losses, and it was the first serious truimph over the troops of foreign interventionists. This particular victory and further struggle against great odds enabled Voroshiloff to evacuate from the Ukraine rich stores of military equipment.

Pressed by larger and better-armed German armies, Voroshiloff withdrew from the Ukraine toward the Volga and Tzarytzin. En route many thousands of workers and their families from the Donetz Basin joined him. He took them through the counter-revolutionary Cossack encirclement to Stalin-defended Tzarytzin.

The formation of the regular Red Army, begun by Voroshiloff in the Donetz Basin, continued during the fierce fighting on the Don and at Tzarytzin. The latter was then the fulcrum of the entire southern front. Voroshiloff hurled there his unified Donetz miners and metal-workers. Echelons with material snatched from under the noses of the German command also broke through. In vain did the Kaiser's best regiments seek to bar their way. In vain did the White Guards strain to smash Voroshiloff. His name was the magnet that drew thousands of guerrillas from the steppes of Salsk, Stavropol and Kuban. At first hardly perceptible streamlets of partisans, they merged into a torrent of man-power near the approaches to Tzarytzin, the Red Verdun.

There Voroshiloff formed the Tenth Army and successfully fought General Denikin. His adversary was numerically and technologically stronger, better trained, and was actively supported by foreign military powers. Only great manœuvring skill and superb strategy could have accomplished Voroshiloff's results. Examples of self-possession, decisive generalship, personal valour were furnished many times by the Lugansk foundry worker who had no military

experience or training outside his precipitate plunge into the whirlpool of the Revolution.

The eighty train echelons carrying his army and valuable evacuated properties were being encircled by the Whites. In the rear of his lines Cossacks were setting traps. At the Likhaya Station he beat off a superior force of White Guards, again manœuvring out of an overwhelming encirclement. General Krassnoff's saboteurs were destroying railway beds in Voroshiloff's path. They blew up bridges and water pumps. At a feverish pace, under fire, the Red partisans restored the tracks. A capital bridge across the Don had been destroyed by the Whites. Voroshiloff's trains were brought to a dead stop, and the enemy pressed all around. While some of his men held back the attacking Cossacks, Voroshiloff personally supervised the work of reconstructing the bridge. On his back he carried building materials to the river, assisting his men in every imaginable way. When the enemy pressure grew especially threatening, he personally led a counter-charge. His mental exertion was tremendous. Any one of the countless decisions he had to make quickly in those days, if erroneous, might have spelled the annihilation of the entire army that was 'hopelessly' outnumbered. Voroshiloff made his decisions without wavering. His 700-kilometre march to Tzarytzin to join forces with Stalin was a specimen of military leadership at its best.

When the great campaigns were over, Voroshiloff had a chance to go to school and learn some theory of military science.

Voroshiloff held the posts of People's Commissar of Home Affairs in the Ukraine, Commander of the Kharkov Military District, Commander of the 14th Army. As a member of the Military Council of the First Cavalry Army,

he took part in the rout of Wrangel, Denikin and Pilsudski.

In the years immediately after the Civil War he commanded successively the North Caucasian and Moscow Military Districts. On Frunze's death in 1925, he was named People's Commissar of the Army and Navy of the U.S.S.R. At the beginning of the Second Five-Year Plan, he undertook the reorganization of the Soviet armed forces, laying a firm foundation for their present strength. Countless honours, elective and appointive offices were given to him.

The military and civilian defenders of the northern front have faith in and respect for their commander. Voroshiloff reciprocates with his confidence in 'the human element of our army which in the long run decides everything and actually determines the fighting strength and military power of the Workers' and Peasants' Red Army.

'Without men, technology is dead. Technology in the hands of men who understand it and have mastered it is a great force.'

The first of the Soviet Commanders-in-Chief on the three fronts to wrest the initiative from the invading Nazis and to pass into a counter-offensive was Marshal Semyon Constantinovich Timoshenko, on the central front.

Timoshenko's has been no ordinary military career. The son of poor peasants, he was born in 1895 in the Bessarabian village of Furmanka. After finishing at rural school, instead of realizing his desire to continue his studies in the city, he was forced by circumstances to go to work as a farm hand for a wealthy landowner.

In 1915 he was drafted in the Czar's army. Trained as a machine-gunner, he reached the eastern front with the Fourth Cavalry Division. The conditions of the rank and file were intolerable, and Timoshenko expressed his feelings on the subject by beating up an officer. He was court-martialled, but the Revolution of 1917 saved him from a heavy sentence.

At the beginning of 1918, Timoshenko was demobilized from the old army. His notable service with the Red Army began at once. He joined the First Black Sea Guerrilla Detachment. Operating in the Crimea against the White Guards and foreign interventionists, the partisans elected him commander of a platoon, then of a squadron. The detachment grew into a regiment; again Timoshenko was put in command.

Led by him, the partisans fought their way to the city of Tzarytzin, whose defence was in Stalin's personal charge. More than once he was at the head of his men attacking the large concentrations of White Guard Cossacks who sustained crushing blows. In the midst of fighting Timoshenko was appointed commander of the Second Separate Cavalry Brigade.

When the famous First Cavalry Army was formed, Timoshenko, at the age of twenty-four, was appointed commander of the Sixth Cavalry Division. This division played an important part in the capture of Rostov-on-the-Don. In August 1920, when Timoshenko was in command of the Fourth Cavalry Division, he participated in the smashing of Baron Wrangel in the Crimea. In the fierce fighting—and there is no other kind where Timoshenko leads—he was wounded twice. He was further wounded on other fronts, but not once did he leave the battlefield.

Between 1921 and 1930, Timoshenko took an active part in the peacetime development of the Red Army. When the Civil War was over, he embarked on the acquisition of a formal military education. In 1922 he graduated from the

Higher Military Academy, completed courses for the Higher Command in 1927, and for commanders and commissars under the Military and Political Academy in 1930. In 1925 he became Commander-Commissar of the Third Cavalry Corps; in 1935 Assistant Commander of the Byelorussian Military District. During that period he went abroad, where he made a study of foreign armies. Subsequently he was in command of the nation's most important military districts—North Caucasus, Kharkov, Kiev, and so on. On May 7th, 1940, he became People's Commissar of Defence of the U.S.S.R.

Wounded five times in battle, Timoshenko has been decorated many times. It was under his direction that the cracking of the Mannerheim Line was negotiated in the Finnish campaign.

Even before the Finnish campaign, on the basis of the Anglo-German war, the Soviet authorities began to feel the need of re-training and reorganizing the Red Army, according to the lessons learned from modern warfare. Defence Commissar Timoshenko undertook the task of re-education of the armed forces for the inevitable sucking of the U.S.S.R. into the vortex of World War II.

Instead of formulating the plans and issuing orders from his desk in the War Office, he spent days and nights with the troops. At the conclusion of the war exercises, he delivered an analytical lecture to the commanding personnel, providing the keynote of the present Red Army combat system.

In his reforms Timoshenko placed heavy emphasis on the training of small combat teams—platoons, companies, regiments. He admonished the commanding staffs:

> In such a big army as our Red Army one sometimes encounters an underestimation of the military training of companies, battalions and regiments on the part of certain higher commanders. The training of the company, battalion and regiment is the foundation of the might and strength of military formations and attention should be concentrated on this point. Perfection of army training can be achieved only when each cog in the military machine functions with clockwork precision. . . .
>
> We must make it clear to every commander and political worker that our main task this year and the duty of every one of us is to raise and make the platoon, company, battalion and regiment all-powerful. If this link is properly organized in all the units and acquires the art of warfare in the real sense of the word, our formations will be able to operate with the least bloodshed in conditions of warfare. . . .
>
> Manœuvres under conditions closely resembling real warfare harden the men physically, teach them habits imperative in fighting, educate them in the spirit of surmounting difficulties and give them confidence in their strength. . . . We must put in more effort, for the labour expended on training in peacetime is repaid with interest in battle. . . .
>
> The desire to attack is firmly rooted in every one of you. This was seen from the tactical exercises. An offensive should not be launched indiscriminately. A haphazard offensive without taking all the peculiarities of the defence into account is paid for dearly in time of war. . . .
>
> We recommend that the defence be organized absolutely in the forefield and not only on the main line of resistance. The defence should be built so as to exhaust the forces of the enemy in the zone of entanglements in order skilfully to route the enemy, to destroy him when he approaches the main line of resistance.

Timoshenko began to demand that a commander follow the principle of 'Do as I do' in training his men. He is not merely to explain to the recruits what to do, but must show them how to do it. Consequently, tactical exercises for commanders were carried out, so that they might become adept at anything they were later to ask of their men. This system was made so thoroughgoing that sections are now trained not only by section commanders but also by the

commanding personnel of higher rank. Commanding personnel must now be at least as agile on horseback, as proficient in markmanship as their charges.

After Timoshenko promulgated this drastic reform, the training of the new contingent that enrolled at the close of 1940 was fundamentally different from any previous one. All exercises took place in the field. Frequent night alarms, long marches and nights spent in snow-covered fields, were a great strain on the young men. But soon their skill and endurance increased. They carried through longer marches with less fatigue, surmounted natural and artificial obstructions with greater ease, approached excellence in sharpshooting more quickly.

In order not to affect the health of the men unduly, they were inured gradually to spending the whole day out-of-doors. Mornings start with outdoor calisthenics. A rub-down with cold water follows, regardless of the weather. At first it seemed to many that this would be impossible under Russia's winter conditions. Medical specialists to-day agree that the Red Army men only benefit by this practice.

So, for nearly a year before the Nazi invasion, the daily life of the Red Army was organized to resemble closely the life at the front under winter conditions. Contrary to prevailing procedures in other peacetime armies, many units organized winter camps and war games. On tactical exercises, hundreds of miles away from camps, the Red Army men and commanders built adequate living quarters for themselves in a few hours, out of materials found at hand.

During their long forced marches the Red commanders and rank and file mastered skiing. This they do in full kit. They are expected to feel at home on skis, be it on patrol, out reconnoitring, going into action, etc. Timoshenko saw

to it that independent initiative of the Red Army fighter was developed.

When the acid test came on the present central front, his men acquitted themselves splendidly and justified Timoshenko's subscription to the old military saying that 'The more sweat before the war, the less bloodshed during the war.'

The forces of Marshal Semyon Mikhailovich Budenny, Commander-in-Chief of the southern front, have over and over again been reported trapped and annihilated. Each time, they slipped out of the supposed fatal encirclement and came back fighting.

It is true that Germany's most serious inroads have been on this terrain which does not lend itself to ready defence. But as long as Budenny's army endure as a formidable, compact entity, there could be no talk of German conquest in the Ukraine. The illusion that Budenny's army had been crushed was born of the fact that, before yielding ground to superior forces, he fought large-scale battles rather than mere rearguard actions. These tactics are designed to capitalize on the recklessness of German attack methods, inflicting maximum losses for every evacuated objective, while gaining time for the regrouping of forces in preparation for the ultimate counter-offensive.

A definite Soviet pattern of absorbing the shock of an attack includes the forward defence zone, often established on the front or rear inclines of elevations, with avoidance of too conspicuous local landmarks. On some sectors, a sham forward defence zone corresponds to the disposition of combat guard troops which subject the enemy rushing in to unexpected crossfire. The forward edge of defence is chosen so that facing it there are few if any concealed

approaches suitable for enemy artillery positions or observation posts. Nor are there many convenient ridges for a concealed deployment of Nazi tanks and infantry safely away from the withering Soviet gunners.

Red Army engineers have already distinguished themselves on the southern front in camouflage, simulation of defence zones, restoration and erection of bridges, preparation of aircraft landing fields, building storehouses concealed from the enemy, arranging anti-tank obstructions, flooding areas before the defence zone, throwing up ferro-concrete fortifications, increasing the steepness of hills that could otherwise be negotiated by tanks.

Budenny's is not a static but a very fluid defence. He might have made a successful stand at some of the points which he vacated but at a disproportionate cost to himself. Instead, his strategy is one of gaining and biding time, while keeping his man-power intact. In such mobile defence he enters engagements one after another and strikes slashing blows at the 'encircling' enemy. Then his armies tantalizingly slip away to make another stand in new positions. Retreats are usually arranged to take place at night, which facilitates covering-up action by smaller scout groups and machine-gun units.

Because the Reds in retreat keep up intense fire by covering-up parties, the Nazis are often misled concerning the disposition of the defenders. Very thorough is the work of delaying the Germans through the blowing up of bridges and roads. Specially trained detachments destroy railways.

Budenny faced a task analogous to his defence of the Ukraine in 1920. In the spring of that year the Entente began its third and final campaign against Soviet Russia. Poland was chosen for the stellar rôle in the performance and she was amply supplied with armaments. Soviet Russia

at the time had been at war for more than two years. Generals Yudenich and Denikin had been defeated, and so had Admiral Kolchak and the Czech Corps. But from the Crimea Baron Wrangel was preparing a march on Moscow. Throughout the Ukraine and especially in the Yekaterinoslav (now Dniepropetrovsk) region, there held sway the bands of Makhno. White Guard Cossacks controlled the Ural and Orenburg steppes. The Russian Far East was in Japanese hands.

The incessant struggle of the young republic led to an almost complete collapse of its economy. Factories and railways were ruined. There was no bread. A devastating typhus epidemic arose. Without a breathing spell from the battles, Russia had no chance of restoring her national economy. It was to take advantage of this catastrophic situation that Poland struck its blow at the Ukraine. While resisting heroically, the Red Army was forced to fall back giving up such valuable points as Kiev. It seemed that Russia would find no strength to stop the offensive.

Lenin's government issued an appeal to the workers and peasants of the Ukraine. In answer, scores of thousands volunteered. To the Polish front were sent the best units of the Red Army, tested in recent battles on other fronts, and the Central Committee ordered Stalin there. Shortly the Polish armies were dealt a crushing blow and their remnants sought safety in flight. The decisive part in the smash-up was the Budenny-commanded First Cavalry Army's.

The army was about to take a much-deserved rest in the Kuban Cossack Region, following the rout of Denikin, when it received the order to march to the Polish front. Characteristic of Budenny was the decision—when it became apparent that the railways were incapable of taking

his men and horses to their destination—to traverse the thousand versts (663 miles) across the Don and Ukraine by forced march. Incidentally, while en route to fight the Poles, the First Cavalry Army struck decisively at Makhno's bands, which dominated Ukrainian districts.

The avalanche which was the First Cavalry was a complete and stunning surprise to the Poles. They knew of the hopeless state of Soviet railways and never for a moment thought of the likelihood of Budenny's army appearing on their front. The invaders were panic-stricken. Abandoning all pretence of opposition, they left Kiev. In their flight, they deserted their artillery, supply trains, and wounded. The Soviet Ukraine was cleared.

Budenny's life closely parallels those of his fellow marshals. The son of non-Cossack parents in the Salsk Province of the Don Cossack Region, he was born on April 25th, 1883. Of a poor peasant family, he became a farm labourer at the age of nine. There he worked until drafted into the army in 1903. He taught himself how to read before the call to the colours came.

Serving in the Czarist cavalry, he became active in the revolutionary movement. After the February 1917 Revolution, he was first elected a member of the Soldiers Squadron Committee, then chairman of his Regimental Committee. When the Bolshevik Revolution broke loose in November, Budenny was in Minsk, and he took part in Lenin's battle. Then he went back to his native village to help with the formation of guerrilla troops.

Budenny was the first to set up cavalry detachments in the Red Army. His first group consisted of six men, two of them his brothers. His unit expanded to 100 when he led the first attack against the White Guards in August 1918. It grew into a regiment, then a division. As Stalin's desire

for a full army of cavalry a little later on was resisted by politicians and military experts, so Budenny was opposed when he tried to organize his cavalry corps. 'Out-of-date' and 'of no military importance' were what he heard on all sides. He set out to disprove the conservative theory by daring practice—and he has done so many times since then.

Back from the wars, Budenny got his first taste of school. At the age of forty-six he enrolled in the Moscow Military Academy which graduated him with high honours in 1932, when he was fifty years old. Three years later he was made Marshal of the Soviet Union. From 1937 to August 1940 he was Commander of the Moscow Military District. In August 1940 he became First Vice-Commissar of Defence. At various times he, like the other two Marshals, was elected to various civil offices, including the Central Executive Committee of the U.S.S.R.

In the Polish war and throughout the Civil War, Budenny was closely collaborating with Stalin, Voroshiloff, and Timoshenko. Unity and intimate co-ordination of command means much in the successful conduct of a war, especially on the unbelievably extended eastern front. These men, working as a team, have already saved Soviet Russia once.

XIX

Winter Warfare

MILITARY operations in winter-time:

1. Heighten the significance of populated points for resting and quartering troops.

2. Complicate or make impossible movements away from the highways, of infantry without skis, of cavalry, supply trains, artillery, and tanks.

3. In connection with the short day and necessity of movement principally on the highways, increase the number of night operations.

4. Make it easier for armies on both sides to cross rivers, lakes, and marshes that will be frozen.

Troops unprepared for winter operations and not supplied accordingly become worthless at that season. Equipment unadapted for use in winter-time actually turns into a liability.

None of Hitler's previous campaigns was fought in winter; the Red Army has been intensively trained for winter warfare on its home terrain. It can be expected to press that advantage to the utmost.

The size and composition of Soviet winter columns will be determined by their combat independence and by the capacity of populated points or bivouac terrain. Long halts will not normally be staged, while short ones will frequently be very short because of the cold. Reduction in the depth of columns will be achieved by movements of large units of infantry on skis on either side of the basic highway route. Forced marches will be preceded by ground and aerial

reconnaissance to ascertain the availability and condition of roads. A march ordinarily will not last beyond six or seven hours. Every movement will be planned to terminate in populated centres, forests sheltered from wind, and areas provided with fuel.

When snow overlies the terrain, attacks are carried out along highways. Strong shock groups on skis, composed of infantry, tanks, and artillery, strike at the flanks and rear of the enemy. Soviet troops have made particularly elaborate preparations for bold night raids by their ski detachments. These are designed for the extermination of advance enemy units.

In the daytime, where the terrain is open and the snow deep, the approach and deployment of Red infantry takes place on skis, under the cover of smoke-screens. For many years Soviet artillery has practised operation on skis. In winter attacks it will accompany the infantry. That its fire will play its full part is secured not only by long-standing provisions for ski traction and greater decentralization of control but also by measures taken many years ago to tow the big guns by caterpillar-track machines.

The Soviet High Command will throw its tanks also into offensives in winter-time if the thickness of snow does not exceed thirty centimetres. In the winter advances of the Red Army, the protection of the flanks from counter-attacks by the more mobile Nazi detachments will be carried out by special disposition of ski units and by the Red Air Force.

Recent years have witnessed in the Soviet war games exercises of ski troops in what is known as the parallel pursuit of the enemy. The speed of the manœuvre and the preservation of the skiers' energies are attained by their being towed on the highways by horses and tanks. This can

also be accomplished away from roads if the terrain is even and snow not too deep.

Winter-time emergence of Red troops from their defence zone into an offensive, under conditions of direct contact with the enemy, is not likely to differ much from the circumstances at other seasons.

The fierce Russian cold will tend to bring the defence positions closer to population centres. The Red Army command will seek to deprive the Germans of opportunities to come close to such points, as well as to forests and groves. Disposition of Soviet troops in winter defence and their system of fire are so designed as to close all roads and all other approaches to their vanguard sectors and flanks. Their positions are chosen with a view to night sorties by ski detachments.

Engineers and sappers come into their own in the Red Army in winter operations. When no permanent fortifications are available they build trenches with snow as their material, as well as breastworks and parapets two to four metres thick. In many years of winter manœuvres the Soviet armies have perfected their skill in camouflaging man-power and fortifications. If they rely on rivers to bar the enemy advance, they dynamite the ice to create long and wide stretches of open water. Communications in the Red Army are maintained by sail-driven sleds, while telephonic lines are cared for by experts in sleds and on skis. Messengers on skis are widely used by the headquarters.

A good many years ago the Soviet General Staff took cognizance of the fact that poison gases show greater stability and less tendency to dissipate in winter-time. This complicates the protection of armies on the march, and the chemical service of the Red Army has worked out special counter-measures.

The Red Air Force is called on to fulfil additional tasks in winter-time in the matter of covering day movements, particularly in clear weather, and also of troop encampments. At the same time the opportunities of striking the enemy from the air while he is on the march or at camp will be increased.

When an air-raid alarm is given, the ski troops disperse quickly and widely on both sides of the main stream of their advance. The detachments that are manœuvring without skis—cavalry columns, artillery, and motorized units—rarify their ranks in depth. The media of air-raid defence are first put to the use of the ski-less groups. Red Army commanders of all ranks have long been instructed to be particularly solicitous of preserving the strength and combat capacity of their men in winter-time. Wherever possible they will quarter their troops for the night and will stop for rest in enclosed structures. If it is impossible to reach such facilities before nightfall, they will carefully choose for their bivouac places sheltered from the cruel Russian winds. When taking up defence positions, they will provide dugouts of earth.

Soviet fighters have had a good deal of training in erecting winter huts. They are well provided with simple heating apparatus and with fuel. For years the quartermasters of the Red Army have been under orders to be ready for frostbite prevention even during thaws. They have been trained to issue, in good time, warm clothing, and fats with which to smear the parts of the body most exposed to the ravages of sub-zero temperature.

Special facilities are provided for drying the *portianki* or great coarse rags with which the Russians wrap their feet before pulling on their boots. The stirrups and other parts of the cavalrymen's equipment are sheathed in fabric covers.

A good deal more discipline is required on winter marches, as well as more skill in organizing them. No man must be permitted to lag; the marchers must keep warm through free movements, and must not sit down during stops. Cavalrymen, artillerymen and personnel of supply trains are advised to dismount and proceed on foot, leading their animals.

Finally, Red Army headquarters provide a special meteorological service to commanders of individual operative units.

XX

The Seeds of Hitler's Defeat

THE Soviet High Command is realistic. It is not counting on 'General Winter' to save Russia. Nor does it figure on historical precedents drawn from Napoleon's campaign: tanks, planes and guns, not rows of history books, are the defence against a mechanized army.

But, except in the Crimea, winter does bring a definite advantage to the Russian side, and on the basis of past performance we are justified in believing that that advantage will be fully exploited. Already, the alarm and disquiet of the Nazis are unmistakable, for they are no longer able to keep out of Germany the stream of trains bearing the wounded. Every Nazi newspaper is forced to say something about the complexities of the struggle and the terrific losses.

A considerable number of German regimental and divisional headquarters have fallen into Soviet possession with all documents and correspondence intact. These files range from confidential instructions by the General Staff to letters of Nazi soldiers that were intercepted and withheld by German censors.

From the 61st German Motorcycle Regiment's headquarters was captured a confidential High Command Order No. 176-41. Entitled 'On Military Field Censorship,' it takes the front-line censors to task because 'reports slipping through the censorship in letters from soldiers on the eastern front are creating demoralization in the rear.' The order complains specifically of a letter written by a Lance-

Corporal of the 447th Infantry Regiment of the Reichswehr and passed by a censor named Roekling, in which the candid corporal vividly described the terror engendered in Nazi ranks by a Soviet tank attack.

A double censorship for all German front-line correspondence is decreed at the close of the order:

'All correspondence dispatched through field post-offices from the east, including Norway and Rumania, should be examined by the direct superiors of the sender. Unit commanders should immediately begin to examine letters mailed through their field post-offices.'

In the same censor's file was another German High Command order—No. 1091-41—called 'The Censorship Bureau of the Field Post.' It said, among other things:

'Examination of letters from the front should prevent circulation of information likely to contribute to the demoralization of the Army or rear. Senders of letters containing such information should be brought to trial.'

Among the letters seized by the German censors in pursuance of the foregoing orders, and later captured by Soviet troops, was found one from an officer of the 19th German Tank Division named Gebhardt. It was written to a fellow officer:

This is a letter and not a report, therefore I permit myself a certain frankness.

What is taking place in our regiment defies description. Not a single tank remains in the regiment. What kind of a tank regiment is that!

The division staff informed us that we shall not get any new tanks soon. We have been ordered to fight with what we have. I may say they demand the impossible.

Our men are trained to fight behind armour, and without tanks they are more like rabbits than soldiers. They spend most of their time looking around for cover.

As you know, the infantrymen fight their best only when they know our tanks are with them. As soon as the tanks disappear they lose their aggressive spirit.

The most pathetic censored letters are those from within Germany to men at the front.

From Eberbach the wife of Private Alfred Schmid informed him: 'The night train came in with 260 wounded. Five ambulances travelled back and forth from 12.30 to 3.45 to carry them from the station. I watched them and kept thinking—where is my husband?'

On page 15 of the Supreme Command's confidential instructions on combating espionage, sabotage and demoralization in the army we read: 'According to reports from abroad, there have been found on German war prisoners letters from relatives referring to the mood of the population at home, worries about food, etc. Such letters are made wide use of by enemy propaganda and they should in no case be allowed to be taken to the front lines.'

Less than a month after the invasion of the U.S.S.R. began, Major-General Nauering, commander of the German 18th Tank Division, wrote in his Order-of-the-Day:

It is apparent without further explanation that losses of equipment, arms and machines are very large, despite preliminary successes, considerably exceeding booty captured. This situation, or its continuation over any long period, is inadmissible. For otherwise we shall be glutted with victories until we are finally defeated.

A battalion commander of the 53rd Motorized Infantry Regiment wrote:

Matters have reached a point where Lieutenant Woller was compelled to appoint a non-commissioned officer as a platoon

commander. (This has always been impermissible in the Reichswehr.) In recent days the battalion has lost five officers, 15 non-coms and 106 privates. Its fighting capacity is declining. Reinforcements of men and officers are necessary. The workshop has no spare parts and many lorries have gone out of commission, either damaged by shells or because of lack of parts. Many cylinders need replacing. Fuel is badly needed. Clothing is to a great extent worn out.

Apparently the battalion chief failed to get an answer to his report, for he followed it up with a still more alarming message:

In the past four days the situation has become very tense. Reinforcements are needed. In these four days we have lost four officers: three killed, one wounded; five non-coms: three killed, two wounded; 108 privates: 33 killed, 75 wounded. In addition, one non-com and 29 privates are sick or missing. As regards reinforcements, we have received no officers, no non-commissioned officers and no privates. As a result of recent heavy losses our battalion has been unable to operate normally.

Our fighting capacity is disastrously low. Matters are precarious as regards personal direction by our officers. In this tense situation the battalion goes into attack only under compulsion backed up by armed threats.

In the captured headquarters of Roumania's 3rd Infantry Division there was found a confidential memorandum, signed by General Masarini, Chief of the General Staff of the Roumanian Army. Entitled 'Deductions and Lessons of Operations in the War Against Russia,' it contained this excerpt:

General Antonescu, inspecting the front, noted the complete lack of organization and discipline behind the lines of our troops. Horse and automobile transport functions in a disorderly manner. For example, vehicles travel incessantly in all directions and it

is impossible to ascertain who sent them or why. Small units of our troops wander about the fields and roads without specific purpose. Carts and motor lorries are seen loaded with articles having no relation to war operations: civilian clothes, furniture, pots, crockery and other household articles secured from the local population.

Owing to bad organization of transport and endless travelling from place to place, our troops and animals are so exhausted as to be unfit for service. During air raids and artillery bombardments, regular columns and auxiliary troops succumb to panic and fall victim to guerrilla sabotage.

In many units our men do not receive rations for days on end. In some troop columns and formations one comes across dirty, unwashed, unshaven privates with the most untidy manners imaginable. When admonished, they reply: 'We are starving, we are getting nothing to eat, we have no soap.'

There is lack of initiative everywhere. Inertia is to be observed in many commanders. Nobody thinks of attempting to obtain things they need themselves by their own efforts. The army requirements must be satisfied from local resources. Everything needed must be taken on the spot without compunction.

Another excerpt from the Roumanian memorandum:

The Russians resort to various ruses to trap and demoralize our units. Indicative is the case of a column of three infantry battalions and one artillery regiment advancing to the field of action. Its vanguard, falling into a trap set by Soviet troops and residents of a village, was attacked and became disorganized. This vanguard, without protection of artillery and the main forces of the column which were following, suffered heavy losses.

Other cases should be mentioned. A German unit, entering a village after the first wave of troops had passed, ran into fire of Russian automatic weapons from houses, trees and culverts. A large reconnoitring detachment of our troops was allowed to approach within several metres of a garden wall behind which Russians had camouflaged themselves. The Russians opened fire unexpectedly and inflicted heavy losses on the German detachment.

Most of our losses are due to the enemy's exploitation of the inexperience of our troops.

Diplomats from neutral countries who recently visited Rumania reported in Switzerland and Turkey how unpopular the war against the U.S.S.R. is among Rumanian soldiers and populace. Rumanian opposition to the Nazi puppet Antonescu is taking active forms. Only recently Juliu Maniu submitted to him a memorandum protesting against the continuation of war and declaring that the sending of the Rumanian soldiers across the Dniester was proof that the country was not fighting for its own interests but pulling somebody else's chestnuts out of the fire. Antonescu's reply to the memorandum was the wholesale arrest of Maniu's followers, including ex-Minister Popovici.

Like King Carol before him, Dictator Antonescu dares not molest Maniu, who is supported by a great majority of the Rumanians.

These first cracks to appear in the supposedly impregnable Nazi structure are significant. With each month that the gigantic battle continues, they will grow more ominous.

On the other side of the picture, of course, is the fact that Russia has sustained huge losses of equipment. Except for localized counter-attacks, Russia will have to stay largely on the defensive pending the arrival of reinforcements of war material already pledged by Britain and America. But a preview of the all-out Russian counter-offensive has already been staged.

The ancient town of Yelnya, east of Smolensk, is a communication centre from which highways lead north, north-east and south-east. It was from this town that the German High Command intended to develop an offensive and advance toward Moscow. Here were forest-covered

heights intersected by ravines and valleys ideal for stacking of German shells, cartridges, and other material for the great drive.

The defence of Moscow was the focal point of Russian strategy. Marshal Timoshenko, Commander-in-Chief of the Central Front, decided that Yelnya would have to be retaken.

In its first big offensive, the Soviet Army was on trial. It was not found wanting. In a few days, the 10th Tank Division of the Nazis was smashed, the 15th Division wiped out. German reserves were thrown steadily into action, only to be steadily pushed back. In a steady, methodical encircling movement their lines were squeezed into a passage scarcely five miles wide. Harried by a great concentration of artillery fire, they made a hasty retreat.

The German casualties at Yelnya were estimated as 80,000. On the outskirts of the town, the Russians found five German cemeteries where great heaps of bodies were buried in common graves. More cemeteries were scattered for miles around. German infantry, accustomed to going into battle only after tanks and planes had broken through a defence line, did not distinguish themselves by stability and coolness under fire when on the defensive. In many cases they fled, abandoning their arms, when their trenches were rushed at night.

But it cannot be too strongly emphasized that the Battle of Russia cannot be judged by day-to-day fluctuations. There was no finality in the Soviet victory at Yelnya, nor by the same token in the loss of Kiev. Ultimately, though the pages of history will be crowded with many dramatic episodes in the months to come, it will be undramatic factors that will decide the issue.

In World War I, Czarist Russia contributed enormously

to the ultimate defeat of Germany by the terrific toll it took in German man-power. The Kaiser needed a quick and cheap victory over Russia. The costly victory he won meant his ultimate downfall. In World War II Soviet Russia is sapping Germany's strength on an incomparably greater scale.

The Battle of Russia began with an army of German vetérans, backed by a tradition of invincibility, facing an army well-trained but for the most part without extensive recent fighting experience. At the end of the first phase of that battle, the notion that the Nazis are irresistible has been exposed as a myth, the frenzy of the German fighting spirit has been considerably cooled, the spearhead of the Luftwaffe and of the Nazi shock troops has been blunted. Eighteen-year-old boys and jaded old-timers who are left-overs of the last war are being brought down in increasing numbers in German planes. Division after division is pulling out of the conquered countries to serve in Russia—with the result that everywhere hope and defiance flare up again, creating endless troubles for the *Herrenvolk*. And Blitzkrieg is as dead as the trench warfare of 1914. A mobile war of attrition, on a grotesquely large scale, has taken its place.

In such a war, Russia in the long run must outweigh Germany. Endowed with equipment—and the Harriman-Beaverbrook Committee has already taken effective steps to bridge the existing gaps—the Soviets will have twenty million reserves for the ultimate showdown. As for the Nazis, their total number of men who could shoulder arms, remaining in the rear at the beginning of the offensive, both in Germany and in the occupied countries, was ten million.

What of the Nazi stocks of material, of industrial production, labour effectiveness, the Ersatz problem? The

expenditure of stocks is immeasurably greater in this war than it was twenty-five years ago. Fragmentary data in the German press indicate strongly that Hitler's major war industries will be found to have produced 20 to 30 per cent less in 1941 than in 1939. The coal industry experienced output reduction of 10 to 15 per cent. Synthetic motor fuel output dropped by 30 per cent, steel output by 15 to 20 per cent.

Even more pronounced will be the drop in the industries working on such imported raw materials as leather, textiles, etc. Most of the factories in such industries are already at a standstill. Rise in demand for war purposes is in inverse ratio to the decreasing production. It becomes necessary to fall back on accumulated reserves. Before the war Hitler did accumulate big reserves of strategic materials, including precious and non-ferrous metals, and petroleum products. Some categories of these reserves are by now completely exhausted; others are greatly reduced.

Nickel, for instance, has virtually disappeared. Armour plate installed in the Nazi aircraft contains no nickel, while other rare metals like molybdenum and wolfram exist in tiny proportions. Nickel is not used even in the vital parts of aero engines.

Since the opening up of the eastern front the influx of oil from home resources and Rumania satisfied 20 to 25 per cent of the Reich's needs. The Nazi High Command has been making up the rest of its requirements from previously accumulated reserves.

In World War I the Kaiser augmented his metal supplies with collections of scrap. Hitler used up this source before the war broke out. Can the occupied and neutral countries relieve the aggravated situation wherein the output, as well as the accumulated reserves, is dropping systematically?

Hitler might have reckoned on that. But the sullen, stubborn, and at times astoundingly successful resistance of the conquered peoples is telling in France, Belgium, Holland, Czechoslovakia, Yugoslavia, Norway, Greece, Poland. Acts of sabotage are assuming mass character. Mine explosions and floods are of daily occurrence. So are explosions of freight transport trains, and wrecking of factories. Every blow that the U.S.S.R. strikes in the East against the Nazi machine encourages the conquered countries of the West to strike another one.

The industrial transport system within the Reich is already crippled by supply shortages. Diminishing lubrication oil leads to premature wearing-out of carriages, locomotives and machinery. Introduction of Ersatz oil results in the use of additional labour power and other difficulties.

Since there is no chance of winding up the military operations in the Blitz tempo, it is safe to expect deepening supply difficulties not alone in industry but in the army, whose fighting capacity is sure to be seriously impaired.

It is often said that it was for the solution of just these problems that Hitler attacked the U.S.S.R. If so, operations are not proceeding according to plan. Instead of gaining oil supplies, he has lost them, through the heavy Soviet bombings of the Rumanian oil fields. In the extremely unlikely event that his legions ever get to Baku, the net result will be that they will have drained Germany's oil reserves still further in order to win what for years to come will be a sterile mass of destruction.

A writer who states that the Nazis are not irresistible, that the fabled Luftwaffe and Panzer forces can be and are being frustrated, is likely to be tagged as a 'wishful thinker.' The fact that all elements of lightning war have disappeared

from the campaign is dismissed as unimportant. We are told by commentators who might well be labelled wistful thinkers that, while the Nazi progress in Russia is unprecedentedly slow, still it is steady and relentless.

To understand the vital blow that has already been dealt to Nazi ambitions, we must go back to the reasons why the technic of Blitzkrieg was developed in the first place. Germany was out to conquer the world; it was an all-or-nothing proposition. That sort of conquest cannot be achieved by a war of attrition; when the war is over, the would-be conqueror must have strong armies left to keep the yoke on enslaved populations and to exploit his gains.

The theory of Blitzkrieg is that by a reckless expenditure of tanks, planes, and men in a few smashing blows of all-out intensity, there is a great economy of men and machines in the long run. It is, of course, a gamble. But if the gamble wins, the attacker, by a short period of seemingly wanton extravagance, has prevented the defender's potential strength from being transformed into actual strength, and has saved himself months, perhaps years, of impossible drain on his own resources.

If, after those first gigantic attacks, the defender remains undemoralized, and strategic and territorial gains are less than the price paid for them, the attacker is in a dangerous fix. He can use Blitzkrieg tactics again—though the valuable factor of initial surprise is gone—for a second and third try, each time weakening his own long-range military potential more than the defender's, but trusting to luck that he can still strike a quick death blow. Or, he can switch to more conservative methods, bearing in mind that he is in for a long war in which the inexorable weight of men and metal will finally tell.

The Nazis did change their methods eventually. But by that time, as a hard-bitten realist named Winston Churchill pointed out, they had lost in three months as much as they did in any full year of World War I. And now they are faced with exactly the situation that all their intensive planning since 1933 sought desperately to avoid—a war in which every objective has to be fought for separately, in which there is no cumulative effect from the various drives, no chance to keep rolling on sheer momentum. The Nazi army remains an imposing war machine, the product of years of cunning and ruthless war economy and the most intense kind of training. But now, instead of boasting of its own fanatical spirit, as it used to do in precisely those words, it complains of the enemy's. The goose-step parade of easy victories is over, and the Reichswehr doesn't like its first taste of sustained fighting.

Fateful factors will be the steady flow of supplies from America, the widening scope of Soviet counter-attacks, the rapidly growing military potential of Britain, the flaming of open rebellion in the conquered countries as the realization grows that help is coming.

Hitler, in his speech at the Sportspalast on October 3rd, seeking to alibi those remarkably small German casualties that have filled the hospitals of Europe said: 'We made a mistake about one thing—we did not know how gigantic the preparations of Russia against Germany had been.'

The Nazis' mid-October drive did not cancel out Hitler's miscalculation. To do that they would have had to annihilate the Russian wall of resistance, not merely push it further to the east.

When the whole story has at last been told, Hitler's mistake will be found to have been as gigantic as the Soviet preparedness of which he spoke.