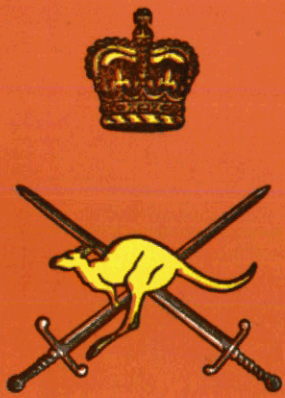
AUSTRALIAN ARMY JOURNAL



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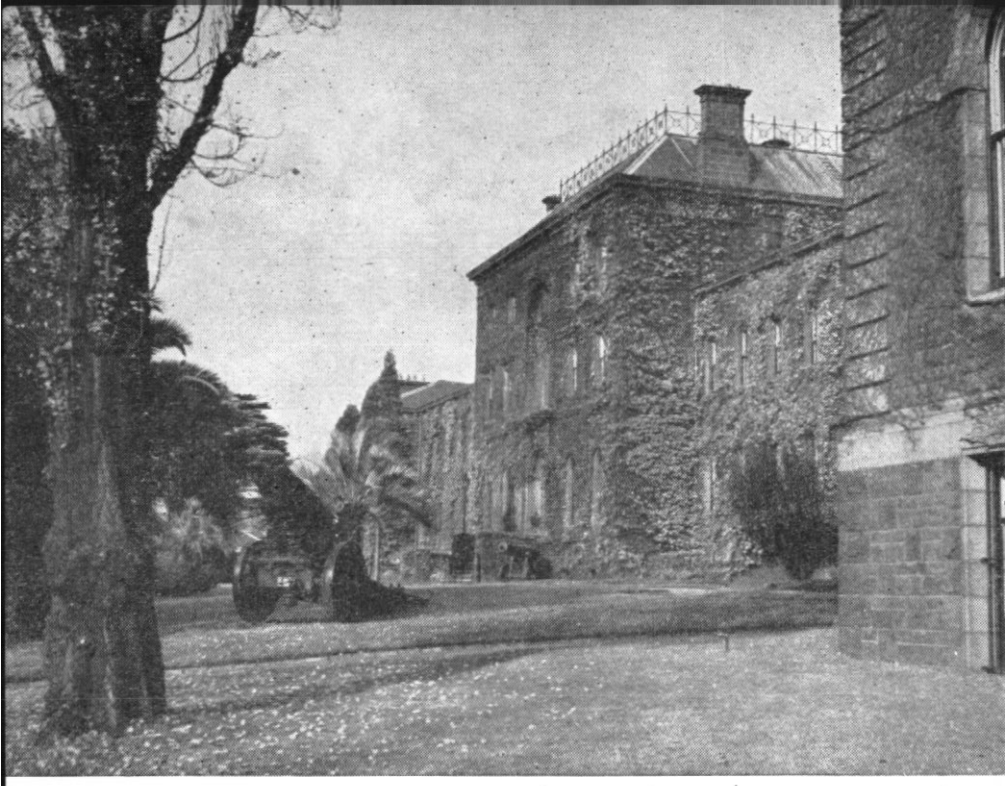

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AUSTRALIA AND NEW GUINEA IN JAPANESE POST MORTEMS OF THE PACIFIC WAR

Captain D. C. S. Sissons
2 Field Regiment, Royal Australian Artillery

IN contrast to the war in Europe, the Pacific campaigns, particularly those in which Australia was engaged, have been relatively neglected by foreign writers both civil and military. A notable exception is, of course, the United States official military history series, many of whose volumes have already appeared. These, however, as is natural, deal principally with the activities of American combat troops. Although they include some valuable overall studies of American methods in overcoming tactical, organizational and supply problems, they deal only incidentally with her allies and the enemy. One must accordingly look elsewhere for information on the part played by Australia and New Guinea in Japanese operations.

So far as this writer is aware, only two post-war investigations were conducted by the Allied Powers on Japan's overall strategy. Moreover, in each of these the strategic study was incidental to another, wider, purpose. The investigating bodies were the United States Strategic Bombing Survey (Pacific) and the International Military Tribunal for the Far East.

Fortunately for the historian, those who conducted the former survey felt that they could not gauge the impact of strategic bombing unless they had a clear picture both of Japan's original intentions and their subsequent modification. Making good use of the opportunities afforded by the Occupation they systematically interrogated high-

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Captain Sissons, a CMF officer, is at present attending the University of Tokyo on Scholarship.

ranking Japanese officers concerning all plans and operations. These interrogations were reported verbatim and published with the report of the Survey in 1946.[1] (Copies are available in Australian public libraries.) Its conclusions are that the plan put into operation in 1941 was to seize and establish a defensible perimeter around the rich "Southern Resources Area" along the line—the Kuriles, the Marshalls, the Bismarcks, Timor, Java, Sumatra, Malaya, and Burma. Australia was outside this area; the invasion force turned back in the Coral Sea was bound not for Australia but for Port Moresby, which the Japanese subsequently decided to occupy to provide additional defence for Rabaul and to assist in cutting lines of communications between Australia and the United States.

The results of the other, more protracted, investigation of Japan's objectives are scattered throughout the two hundred odd volumes of the Proceedings and Exhibits of the International Military Tribunal for the Far East, a complete set of which is held by the Australian War Memorial, Canberra. As evidence of Japanese intentions regarding Australia its value is largely negative. This is partly a consequence of the way in which the International Prosecution conducted its case. On the principal charge of "conspiring to wage aggressive war" it attempted to reduce to manageable proportions the tremendous volume of evidence available by confining its attention to aggression against the United States, China and Russia. (Australian participation was confined to producing evidence of ill-treatment of prisoners of war.) Nevertheless the whole body of the evidence indicates that Japan was too interested in things elsewhere to harbour any serious designs against Australia. An excellent illustration of this is afforded in the secret "Plan for Expediting the Termination of War Against the United States, Great Britain, Holland and the Chiang Kai-shek Regime." This statement of basic objectives and the strategy to be adopted was approved by the Government on 15 November 1941. In essence the plan was (i) to capture American, British and Dutch bases in South-East Asia, (ii) to establish a "southern vital resources area and the main lines of communications" whereby Japan would become self-sufficient "for an extended period of time," (iii) to draw out and destroy the main strength of the American Navy. Australia did figure in this plan, but it was certainly not in the way imagined by our experts. The Japanese plan provided for co-operation with Germany and Italy in their efforts to defeat England first. To this end Japan would "endeavour to sever lines of communications between England, Australia and India by employing political strategy and destroying commerce, and cause the latter two countries to revolt against the former." Apparently to the Japanese Australia was the veritable stereotype of a colony—totally devoid of secondary industries and eager to expel a European master!

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1. United States Strategic Bombing Survey, Pacific (Government Printing Office, Washington, 1946).

From other sources we see how after the outbreak of hostilities two factors soon emerged which exerted strong pressures in favour of modifying the original plan. The ease of her victories produced the temptation for Japan recklessly to advance beyond the limits determined after more sober calculation of her capacity. Secondly, the speed at which America created and deployed her vast resources was beyond Japan's expectations. Her leaders began to fear that their perimeter would be more difficult to defend than had been anticipated.

This situation evoked various proposals for expanding the perimeter to deny valuable positions to the enemy and for cutting his supply lines. It was then that influential groups in the Navy advocated the invasion of Australia.

For our knowledge of Japanese planning at this stage of the war we have to rely on three works, each produced several years after the war by Japanese officers, who do not indicate the source material at their disposal.

The most detailed presentation of the reasons why the Navy's proposals were rejected is to be found in the Complete History of the Greater-East-Asia War,[2] by Colonel T. Hattori, who during the war was in charge of one of the sections of the Directorate of Military Operations. A more concise account is available in Imperial General Headquarters: Army High Command Record (1941-45), a monograph (No. 45) compiled in 1952 by the Japanese Research Division[3] of the Military History Section, HQ UN/FEC Comd, from a memorandum prepared for this purpose by the same Colonel Hattori with the assistance of some of his former colleagues at the Directorate. The most detailed account of the "Australian School" is given in Midway, the Battle that Doomed Japan, by M. Fuchida and M. Okumiya, both of whom were engaged during the war in operational research, and thus had wide access to official files. An English edition of this book has been published.[4]

As far as the picture can be reconstructed from these incomplete and unconfirmed sources, proposals to invade Australia were conceived and disposed of as follows:

Fuchida and Okumiya claim that as early as February (1942) Combined Fleet Headquarters (Combined Fleet was a subordinate unit comprising some 65-70% of the Navy's fighting strength) was anxious lest north-west Australia should be used as a base from which to interfere with Japanese operations in the Netherlands East Indies. To forestall this it proposed an amphibious landing at Darwin. When this was flatly rejected by the Naval Staff and by the Army, Combined

2. Published in Japanese in 1953. Although an English edition has not yet appeared, a mimeographed translation has been produced by the US 500th Military Intelligence Group.

3. This unit continues to function as part of the new HQ US Army Japan (APO 500 Tokyo).

4. Published by the US Naval Institute, Annapolis, 1955.

Fleet proposed as a second best the carrier strike to wreck base installations, which took place on February 19th.[6]

Despite its rejection of Combined Fleet's proposal, the Naval Staff at this period seems to have been working on a much more grandiose plan to invade Australia. This involved it in a protracted argument with the Army during February and early March.[6]

The foremost exponent of the Navy's plan was Captain S. Tomioka, Head of the Operations Section of the Naval Staff. He argued that Australia should be occupied to prevent its becoming the springboard for the inevitable Allied counter-offensive. (The latter, he rightly foresaw, would rely on massive air-power).[7]

The Army vigorously attacked these arguments on the following grounds. In view of the size of Australia, the undeveloped nature of its communications, and the spirit of its people, the invasion would require twelve divisions together with the main body of the Combined Fleet (Combined Fleet, as of December 1941 consisted of ten battleships, five fleet aircraft-carriers and a proportionate number of smaller vessels). In addition to this, the Army alone would require 1½ million tons of merchant shipping. Such a venture would entail drastic reductions in the forces deployed against China and Russia.[8]

Unfortunately these sources do not indicate the Japanese Army's estimate of Australia's military strength at this time. (Its estimate the following May, i.e., 1942, was:— Troops, 350,000, or ten divisions; aircraft production, 60 planes per month.)[9]

As a compromise, in mid-March, both sides agreed on a plan to sever communications between Australia and the United States by occupying first Port Moresby and Tulagi and then New Caledonia, Fiji, and Samoa. In between these two operations a landing was to be made at Midway primarily to entice the American fleet to a decisive battle. The subsequent history of these plans is well known. The first attempt on Port Moresby was thwarted in the Coral Sea on May 8th. The Midway venture (June 5th) was also unsuccessful. The latter together with the American landings at Guadalcanal and Tulagi (August 7th) and Australian successes at Milne Bay (August-September) and Kokoda (September) threw Japan onto the defensive.

Further material from Japanese sources is likely to become available in the future. In particular, the Japanese Research Section of the United States Army (see above) has completed only about half of the 150 Pacific War monographs on which it is at present engaged. Unfortunately the bulk of these deal with Naval operations. Among the Army monographs so far produced, the most interesting from the Australian point of view is the special study Japanese Night Combat (three volumes). This contains a

5. Ibid p. 38.
6. Hattori op. cit. ii, 114.
7. Fuchida and Okumiya p. 54-55.
8. Hattori ii, 113ff.
9. Japanese Research Division Monograph No. 45, p. 50, Charts 8 and 9.

useful and detailed discussion of Japanese methods and experience, relevant extracts from training manuals, and twelve selected case-studies, three of which took place in New Guinea—at Buna and Girawa in December 1942 (this appears to have become a classic for subsequent training and organization); against the advance of the 7th Division at Kesawa on 8 December 1942; in the vicinity of Aitape in July 1944 (against United States troops).

I realize how difficult it must be for Commanders-in-Chief to find the time to make themselves known to their staff, but a very small effort in this direction produces a very big dividend. It is extraordinary how susceptible a staff officer is to a little notice taken, or by an occasional personal contact with his commander. It is human nature. The staff usually get very little praise and all the kicks.

Montgomery used to keep in touch with the staff as a whole by periodical visits. After some particularly successful operation he would send me charming messages of thanks and appreciation, which would be circulated to all concerned. In addition, he used to walk round various branches of the headquarters at intervals. He would chat easily with high and low, and such visits had a visible effect upon the output of that particular section.

—Major-General Sir Francis Guingand in "Operation Victory."

THE AIM: To make war, as far as may be, impossible

THE MEANS: Modern forces, suited to the modern world

BRITAIN'S NEW PATTERN OF DEFENCE

Cyril Falls
Former Military Correspondent of the London "Times" and Professor of the History of War, Oxford University

FORCES to be reduced to 375,000 in Five Years" runs a newspaper headline. The extent of the cuts in Britain's defence, especially in man-power, has attracted more attention than the theories behind them. Here an effort will be made to redress the balance. First of all, however, it will be convenient to set out, in the briefest form, what the reductions amount to.

In man-power the aim is to reduce the combined strength of the three services of sea, land and air from 690,000 to 375,000. The Navy's material cuts are chiefly in ships of the reserve, considered obsolete. Little has been announced about those of the Army, except numerically, in which respect it is to be approximately halved. What abolition of units this will involve is unknown, but it is certain that the sharpest reductions will be in depot and workshop troops. In the Royal Air Force the 2nd Tactical Air Force on the Continent and the light bomber force at home, which is assigned to the North Atlantic Treaty Organization, will both be halved. Fighter Command, another home force, will be reduced in strength and confined to the defence of bomber airfields.

End of Conscription

Next let us glance at the redistribution of the forces which will remain. The new structure of the Navy will be based on a small number of carrier groups, one of which will normally be stationed in the Indian Ocean. The reduced Army will increase its hitting power with tactical atomic weapons. The central reserve in Britain will be kept in the highest possible state of mobility by means of the development of the transport aircraft fleet in RAF Transport Command and contracts with private firms. In the RAF the medium bombers will be supplemented by ballistic rockets. The fighter force for the defence of

bomber airfields will eventually be replaced by guided missiles. Some squadrons of the 2nd Tactical Air Force in Europe will be supplied with atomic bombs.

The means of reducing the man-power of the services will be the gradual reduction in numbers called up under conscription. The final call-up under the National Service Acts is expected to take place at the end of 1960, so that by the end of 1962 it is hoped that the total strength of 375,000 will be "regulars" or voluntary professionals. Needless to say, this is an aspiration, because one cannot get volunteers unless they volunteer.

There May Be Secondary Wars

Now for explaining the theory behind the cuts promised above, it being understood that I am putting the official principles, with which I agree. The danger represented by nuclear weapons has become so overwhelming that the probable role of conventional forces has still further decreased in the last year or two. Their chief part is to stand ready for the waging of secondary wars. It is considered—and this view has historical backing—that there may be such wars, simply because nuclear weapons are so terrible, and secondary wars might break out between nations which do not possess these.

The Army thus has three major roles: continental defence within the frame of NATO, harder hitting though reduced in size; home defence, taking in some aspects of civil defence, allotted to the Territorial Army; and reserve for the needs of Britain and the commitments of her alliances and pacts. Part of this is a small Commonwealth Strategic Reserve, and in addition forces in the Persian Gulf and East Africa.

The aircraft carrier is maintained in the Navy as "a mobile air station," because expert opinion holds that it still has a significant role.

The Financial Aspect

Finance enters into the reductions as a whole because costs are rising fast and maintenance of present strength would involve gravely increased expenditure. It is this consideration which has decided the Government to abandon the project of building supersonic bombers. The desirability of putting back into civil life, into industry and science, a proportion of the present large military man-power is also a factor. Financial savings will be much smaller than those in man-power, but it is hoped that they will be substantial.

In short, the aim is to produce modern forces suited to the modern world and at the same time relieve where possible the strain on the national economy. It resembles that of a business firm whose outgoings have become disproportionate to its profits and which is determined, on the advice of its auditors, to reduce them, while keeping up, so far as may be, efficiency. It hopes to increase it in some respects, and in others to make any falling-off there may be proportionately less than the savings. The United Kingdom Government has not listened to the voices proclaiming that "nothing but the bomb matters and all else is waste."

The Nuclear Deterrent

Whether the provision made for "all else" is adequate can be proved only by experience, but at all events it has been recognized that some precautions outside the sphere of nuclear war are vital. It is no less clearly recognized that nuclear war is suicidal for any party which engages in it. The nuclear deterrent must be maintained as the best hope of preventing another global war, but its value lies not in its use as a weapon but as a sanction for the avoidance of war. In the broadest sense, the object of defence measures is to render war unlikely—as near as may be, impossible—and not in order to prepare to wage war.

COMPETITION FOR AUTHORS

The Board of Review has awarded first place and the prize of £5 for the best original article published in the July issue to "Logistics," by Major J. A. Munro, Royal Australian Army Ordnance Corps.

AS IT WAS IN THE BEGINNING

A Reconstruction of The Battle of Kadesh, 1296 BC

Major H. W. Piper
Sydney University Regiment

THIRTY-TWO centuries after the event archaeologists have been able to reconstruct the course of the earliest battle of which history has left any detailed record, the battle of Kadesh, fought in 1296 BC. This was one of the decisive battles of the ancient world, and in it a Hittite army under King Muwattalis defeated the Egyptian Pharaoh Ramses II and imposed a permanent check on Egyptian expansion northwards from Palestine into Syria.

Thirty-two centuries is a long time, but the principles of strategy do not change, and so perhaps it is not a mere coincidence that the same ground should appear more than once in military history. Nevertheless it is striking to discover that three thousand two hundred and thirty-seven years after the battle of Kadesh an Australian force under Major-General (then Brigadier) G. F. Wootten was preparing for a battle on almost the same spot. It is even more striking to realize that, though the later battle happily never had to be fought, the Australian commander faced very much the same problems and considered very much the same factors that Ramses II did, and that the later appreciation and plan, with the necessary adaptation to earlier weapons, would have stood Pharaoh in very good stead. Indeed, a consideration of the situation in the late summer of 1941 AD will, I think, clear up a number of

problems that the archaeologists still find in the battle, and will cast light on the reasons for the actions of both the Hittite and the Egyptian generals in the early summer of 1296 BC.

The most recent account of the battle of Kadesh is to be found in *Narrow Pass, Black Mountain: the Discovery of the Hittite Empire, by C. W. Ceram (Victor Gollancz Ltd., 1956), pp. 149-94,* which anyone interested in the battle should read. What follows next is simply a summary of that account.

The battle of Kadesh was the climax of a long struggle between the Hittite and the Egyptian Empires for the possession of the coastal strip between Asia Minor and the Nile Valley. When Ramses II came to the throne Egypt was just beginning to reassert itself after a period of internal disorder. Ramses' predecessor had reconquered Palestine, but early in Ramses' reign the Hittites again drove south. By an enormous levy on his subjects, Ramses raised an army of twenty thousand men, a huge force for those days, and moved north against King Muwattalis, who withdrew into what is now Syria, and set about raising from his auxiliaries an army nearly equal to the Egyptian and including 2500 Asiatic chariots.

Ramses is said to have moved along the coastal strip, to secure his supply by sea, but he must have moved inland at some point in Phoenicia, for he approached the Orontes River along the valley lying between the Lebanon Mountains (which run along the coast) and the Anti-Lebanon range, which lies to the east. Here his scouts informed him that the Hittite army lay encamped at the fortress of Kadesh, on the left or west bank of the river. Ramses, deciding that he was strong enough to attack, pushed north, and when he reached the vicinity of Kadesh "he set up camp on the heights above the city, which was faintly discernible from a distance through the haze," but he could not see the enemy. At this pause, Muwattalis sent to Ramses' camp two Bedouins, who pretended to be deserters, and who informed Ramses that the Hittites had now retreated further north to Aleppo.

Ramses swallowed this fatal bait and he moved on Kadesh with an imprudence that was to cost him the campaign. His army was divided into four divisions each of about 5,000 men. He left two of these divisions behind, and, "relying on the statements of two deserters, he split up his army, moving one corps some six miles ahead of his main body into unscouted territory. And, as if this were not sufficient folly, he put himself at the head of these forward troops, instead of sending out an advance guard and staying with his main army."

Of the two divisions left behind, one was posted at the ford over the Orontes, six miles south of Kadesh, and the other was "guarding the roads," which I take to mean that it was left at the position on the heights some three hours' march south of the ford.

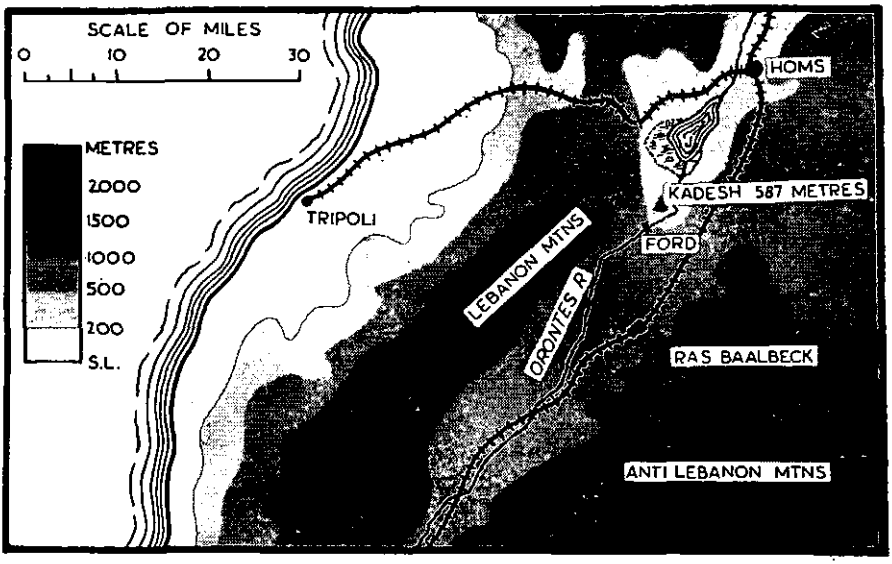
This was all the opportunity that Muwattalis needed. As Ramses moved past the fortress on the west, he moved round it, out of sight, on the east. As Ramses' first division was making camp north of Kadesh, Muwattalis struck with his full

force of chariots against the second division, which was still on the march, and scattered it. On the heels of the survivors, the Hittites then broke into Ramses' camp and hemmed the Pharaoh and what remained of his first division against the fortress and the river. At this point Ramses faced a complete disaster in which he would probably have lost his own life or liberty, but he was saved from the full consequences of his tactical blunder by two strokes of sheer luck. The first was that the Hittites, once in possession of the camp, fell to plunder and lost their discipline. The other was the still unexplained arrival of "a small, firmly disciplined regiment of Egyptian soldiers, who . . . quickly took in the situation, and in a single vigorous assault overwhelmed the bands of Hittite plunderers." This diversion enabled the Pharaoh to break out of the encirclement, and reaching his untouched divisions he retired to Damascus. This was the end of the war, and the treaty which followed gave the Hittites the coastal strip from Phoenicia north.

There are a number of puzzles in this account of the battle. The first is the curiously vacillatory nature of Ramses' actions before the battle. If he had decided to attack, why did he halt so far south of Kadesh? And, if he later thought he was advancing into deserted territory, why did he suddenly divide his forces? Ceram explains this simply as bad generalship, but even bad generals usually have some reason for their actions. A second puzzle is Muwattalis' exact purpose in sending the two mock deserters. Certainly the effect was that Ramses divided his force, but this was pure luck. Had Ramses been prudent, all that could be expected was that the story would make him advance to Kadesh, and, on Ceram's reconstruction, he was anxious to do this anyway. Yet another puzzle is why the Hittites did not follow up Ramses' flight and deal with his two remaining divisions. Even if they had been roughly handled by the small Egyptian regiment which intervened, yet they had destroyed half the Egyptian army, and they should have been strong enough to deal with the rest.

A minor puzzle is the question of where the fresh Egyptian regiment so opportunely arrived from. Ceram says "it has been assumed that they may have been a unit of cadets who had been landed at one of the coastal ports with no orders but to make contact with the Egyptian army," but this hardly explains their arrival exactly at Kadesh. It is on these questions that a consideration of the situation in 1941 may cast some light.

The task of the Australian force in the valley between the Lebanon and Anti-Lebanon ranges was to stop a possible German thrust south through Turkey and Syria to Palestine, and so, with the difference of defensive for offensive, it corresponded with that of Ramses' army. Moreover, this force faced the same problem that Ramses had to face—enemy superiority in armoured fighting vehicles. At that time the Egyptian chariot was a comparatively clumsy affair with solid wheels and carrying only one fighting man beside the driver. The Hittite chariot had spoked wheels, which made it lighter and faster



and enabled it to carry two fighting men. Ceram calls it "the newest, swiftest and most beautifully manageable of offensive weapons," a description which would fit the German armour of 1941 very well. This meant in 1941, as it did presumably in 1296 BC, a very careful attention to the choice of ground from the point of view of "going" and obstacles.

The ground chosen in 1941 for the possible defensive battle was the narrow part of the Orontes valley near the village of Ras Baalbeck. Here the valley was about five miles wide. On the east side a number of spurs of the Anti-Lebanon thrust out into the plain, providing good gun positions and a relatively firm base for infantry to hold while other infantry units covered an anti-tank ditch across the lower part of the valley. North from this position stretched a widening plain, under observation from the Ras Baalbeck spur and the heights above. This plain, in dry weather, provided excellent going for armoured vehicles and would obviously have been the main enemy line of approach; in the middle of this was the mound marking the ancient site of Kadesh. A map in *Breasted's History of Ancient Egypt* makes it clear that Ramses halted near Ras Baalbeck, and if he could see Kadesh on the horizon then he must have halted on the very spur that formed the right of the Australian defensive position.

This position between the ranges provided a firm line; the opportunities for counter-stroke depended on the ground further north. Beyond Kadesh, the Orontes forms a marsh (with firm going on either side), and immediately north of this again comes a broad pass leading laterally from the Orontes valley to the coast. This pass, which the railway now follows, runs through a

gap dividing the coastal mountains into two ranges, the Lebanon and the Amanus, and at the coastal end of the gap lay another Australian defensive position at the port of Tripoli. Any enemy force which became heavily committed in the plain north of Ras Baalbeck might have found itself vulnerable to a flank attack based on Tripoli.

Of course, these dispositions were never tested by battle, but they do suggest explanations for some of the puzzling features of the battle of Kadesh. Let us look at the situation as it appeared to Ramses moving north along the Orontes valley in 1296 BC. He had an army more than equal in strength to that of the Hittites, and he was eager to attack, but with the inferiority of his chariots he would not be anxious to give battle in the flat plain around Kadesh, where he knew the enemy to be. The features around Ras Baalbeck offered him a position on which he could deploy his army, offer battle, and keep the Kadesh plain under observation, and this would explain his halt there. Muwattalis, on the other hand, wanted a battle on the ground he had chosen, and the two sham deserters were sent to tempt Ramses forward. This seems a much more reasonable picture than that of an aggressive Egyptian general who suddenly became timid because he couldn't see the enemy, opposed by an experienced Hittite commander whose only stratagem was to hope that the Egyptian would become careless.

This situation would also offer some explanation of why Ramses made the fatal mistake of dividing his army. It may well have been a mistake of over-caution rather than of rashness. The two divisions left in the Ras Baalbeck area and at the ford over the Orontes did provide a firm base, while Ramses with the rest of his army made what was in effect a reconnaissance in force. Of course, the splitting of his force was none the less a mistake for that, but when Ramses did break out from his lost battle he was able to draw off his two rear divisions without interferance, even if he achieved that at the cost of losing the war. Ceram may have assumed too readily that Ramses violated the principles of strategy from sheer folly. It seems to me more probable that, like many another commander since, he obtained exactly the same disastrous result by violating them in accordance with his own carefully-thought-out plan.

There is no suggestion, either in the documents or the reconstruction of the battle, that the lucky intervention of the fresh Egyptian regiment was planned by Ramses. Nevertheless geography suggests why it should have come where it did. Ramses was being supplied by sea, and when he first entered the Orontes valley reinforcements presumably reached him over the passes from ports around the present Beirut. As he reached the northern end of the valley, the low, broad pass leading in from the coast north of Tripoli would have been a more convenient route, and it was presumably by this route that the reinforcing regiment was sent. As it reached the end of the pass it would have moved south between the marsh and the Lebanon range (perhaps keeping to the lower hills) and thus come past Kadesh. If so, it was very lucky in its timing—a

little earlier or a little later and it would have met the Hittite army alone. As it happened, the regiment must have caught that army in the flank and rear at a time when it was already completely committed.

The success which this regiment did have suggests that Ramses might have been wiser to take his whole force by this route. Posted in this gap on the flank of the Hittite communications along the Orontes, and closer to his own sea supply line, he might have forced a battle on more favourable ground and been remembered as the winner instead of as the loser of the first fully recorded battle in the history of the world.

General Craufurd was, indeed, one of the few men who was apparently created for command during such dreadful scenes as we were familiar with in this retreat. He seemed an iron man; nothing daunted him—nothing turned him from his purpose. War was his very element, and toil and danger seemed to call forth only an increasing determination to surmount them. I was sometimes amused with his appearance, and that of the men around us; for, the Rifles being always at his heels, he seemed to think them his familiars. If he stopped his horse, and halted to deliver one of his stern reprimands, you would see half a dozen lean, unshaven, shoeless, and savage Riflemen standing for the moment leaning upon their weapons, and scowling up in his face as he scolded; and when he dashed the spurs into his reeking horse they would throw up their rifles upon their shoulders, and hobble after him again. He was sometimes to be seen in the front, then in the rear, and then you would fall in with him again in the midst, dismounted, and marching on foot, that the men might see he took an equal share in the toils which they were enduring.

—*Rifleman Harris, Recollections, 1848.*

Changes in the Soviet Hierarchy

Major S. G. Kingwell
Royal Australian Artillery

AT the moment of writing (16 July 57) Khrushchev and Bulganin are receiving the plaudits of their sycophants in the Communist State of Czechoslovakia following their purge of Molotov, Kaganovich, Malenkov, Shepilov, Peruvhkin and Saburov, and it may be some little time before the full implications of this purge are known.

Purges in the Kremlin are nothing new, in fact there has been a state of constant change amongst the hierarchy since the October Revolution in 1917. Whilst changes in Governmental representation are often healthy signs in the democracies, representing the will of the majority of electors, changes Russian style are summary dismissals representing not the will of the electors but the will of a dictator such as Stalin, a would-be dictator such as Khrushchev, or the majority will of the Presidium of the Communist Party. Changes usually occur for three main reasons, viz., finding a scapegoat for past mistakes, an impending change in the party line or a ruthless move on the part of a dictator to consolidate his position. It is difficult to analyze fully the importance of the reported changes without some knowledge of the structure of the Government which exists in the USSR. The purpose of this article is to outline this structure so that readers may better understand current and probable future changes.

The One Party System

Since 1918 the only legal party in the USSR allowed by the Constitution has been the Communist Party (formerly Bolshevik), and no other party has been tolerated. The following two extracts from the Constitution give an indication of the power of the party:—

"The most active and politically conscious citizens in the ranks of the working class and other sections of the working people unite in the Communist Party of the Soviet Union, which is the vanguard of the working people in their struggle to strengthen and develop

the Socialist system and is *the leading core of all organizations of the working people, both public and state.*" (Extract from S 126 of the Constitution.)

"The citizens are also guaranteed freedom of speech, of the press, or assembly and of street processions and demonstrations *in conformity with the interests of the w rking people and in order to strengthen the Socialist system.*" (S125.)

It is clear from the above extracts that the party is the real master of the country and that citizens who unite in any organization find that the organization already possesses a leader nucleus—members of the party.

The Dual Structure of the Soviet State

It is against the preceding background that we should analyze the peculiar dual structure system which exists in the USSR.

On the one hand there is the Communist Party, which controls the affairs of the country, and on the other hand the Governmental organization, which is little more than a bureaucracy for processing the decisions of the party hierarchy.

It will be seen also that the party hierarchy consists of men of many parts, holding office in both the party control organization and the higher government machinery. This to say the least, is very convenient, as it not only ensures that the party line is correctly projected but also that the legislative and administrative processes are speeded up.

The Party Apparatus

The basis of the party is its 7 million[1] party members, or 3.5 per cent. of the population of 200 million. These members are supported by 400,000 candidate or probationary members, who do not possess voting powers. The party forms an elite. Membership is not easily gained, and is only granted as a reward for long service to the party. The party is supported by 19 million CONSOMOL or Young Party members. The dictum expressed in 1919 that party members should be subjected to periodical purges to make sure that only staunch supporters of the party remain within its ranks holds good at party and higher levels.

Above the party is the Congress, a body which meets every third or fourth year, and is nominally the supreme organ of party power. In practice, however, it is no more than a vehicle for dissemination of the party line. As an example of this, there was the spectacle in February 1956, when Khrushchev addressed the 20th Party Congress and announced the de-Stalinization programme to a shocked and silent audience.

It was some little time before the awful truth percolated into the minds of Congress members, but once having done so they all danced enthusiastically to the new party tune composed by Khrushchev. The Congress elects a Central Committee, which meets at least every six months to carry out the work of the party between congresses and

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1. 6,795,896 announced by Khrushchev at the 20th Party Congress, 1956.

guides the work of the Central Soviet and public organizations through party groups within them.

The Central Committee consists of 125 full members and 110 candidate members. To carry on its current work it elects a Secretariat, of which the First Secretary is Khrushchev. The Secretariat directs the party organization which exists in all mills, factories, educational establishments, collective farms, villages, offices, public and State organizations and units of the Soviet Army and Navy, where in each case there are at least 3 party members. The Central Committee elects the Presidium, formerly known as the Politburo, to direct its own work during plenary meetings, and it is here that the real core of Soviet power exists. The Presidium, which previously numbered 11, now numbers 15[2] full members with 4 to 6 candidate members.

Leading man in the Presidium is the First Secretary, Khrushchev, who occupies the same position from which Stalin rose to absolute dictatorship, eventually becoming Premier of the Governmental organization and Commander-in-Chief of the Armed Forces during World War II.

The Presidium is the core of Soviet dictatorship, and it is here that policy is defined. In theory power flows upwards from the Party to the Presidium; in practice, however, power flows downward. Many examples have occurred in the past where some person in the Central Committee, Congress or Party has been a little too critical or outspoken, and his career has been cut short by the expedient method of branding him a deviationist. Deprivation of party membership followed, accompanied by summary execution or transfer to Siberia.

2. A. B. Aristov, N. L. Belyayev, L. I. Breshnev, N. Bulganin, Y. Furtseva, N. G. Ignative, A. I. Kirichenko, N. Khrushchev, F. R. Koslov, O. Kuusinen, A. Miloyan, N. M. Shvernik, M. A. Suslov, K. Voroshilov, G. Zhukov.

Governmental Organization

At the base of the Governmental structure is the Supreme Soviet, in theory the highest organ of State Power. It consists of two chambers with equal legislative rights elected for a term of 4 years. The Council of the Union comprises 700 members elected on a population basis of one per 300,000, and the Council of Nationalities of 631 members elected on a representative basis of 25 deputies from each Union Republic, 11 from each autonomous republic, 5 from each autonomous region, and 1 from each national area.

It is here that the first evidence of dual control emerges, as deputies cannot be considered for election unless they are firstly members of the 7 million strong party. Candidates are nominated, and following a more or less preliminary approval in their constituencies one candidate is put forward as the party nominee with elections being held on a one front basis. The only concession allowed non-party citizens[3] is the right to exercise their franchise in favour of the one front candidate. It is by these means that the party is returned with a 98 per cent. majority.[4] As the Supreme

3. Official term in Soviet for all persons not members of the party.
4. In 1954 120,727,826 electors voted.

Soviet meets twice a year only, it delegates its power to a Presidium, which acts as a Collective President of the USSR between sessions.

The Presidium has as its chairman Marshal Voroshilov, who is President of the USSR and be it noted is also a member of the upper hierarchy in the Presidium of the Communist Party. The remaining members are the 16 chairmen of the republics and 15 other members elected by the Supreme Soviet. The Presidium directs the local government organizations of the republics and states, each of which has a Presidium, Council and First Secretary of the Communist Party. This Secretariat is on a direct technical net with the superior Secretariat of the Central Committee of the party.

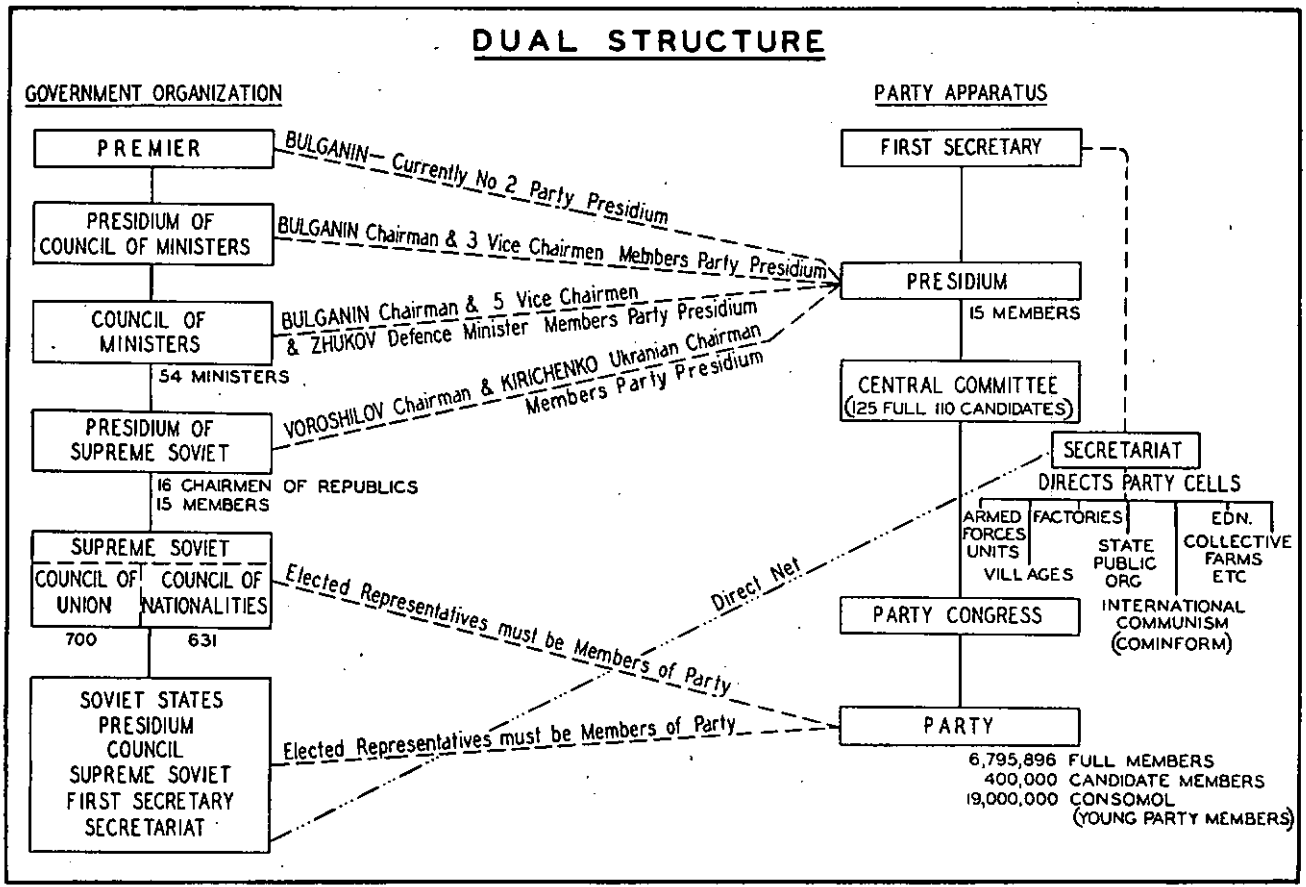
Above the Presidium is the Council of Ministers, numbering 54. The Chairman is Bulganin, who is currently number two in the Presidium of the party, whilst the 5 first Vice-Chairmen also have similar dual membership. Four of the five, Kaganovich, Peruvkin, Molotov, Saburov, have now been sacked, but replacement can be expected from the new party Presidium. Above the Council is the Presidium, which could be likened to an inner cabinet, and includes Bulganin as Chairman and his three senior Vice-Chairmen of the Council, who are, of course, members of the party Presidium. The Council is the highest executive and administrative organ of state power, and as its six senior members are also members of the Presidium of the only legally constituted party in the USSR, it goes without saying that they are admirably placed to project party decisions downwards through the administrative and legal channels of the Governmental structure. As if this were not sufficient, we find that the Council includes a Minister for State Control, whose department is responsible for ensuring at each subordinate level that the bureaucratic system carries out in their entirety and with an absolute minimum of delay the decisions made in the party Presidium.

The Council, in conformity with the party line, can make immediate decisions on foreign, economic or internal policy without the necessity for debate by any of its underlings, a really streamlined affair. In the sphere of foreign policy it has its advantages, as it allows the USSR to wax hot one moment and cold another, thereby retaining the initiative. Her reaction to events and implementation of suitable measures to combat them are also much quicker.

From this analysis of the dual structure of the Soviet State two main deductions emerge:—

(a) The Communist Party of the Soviet Union is the real ruler of the country, and as the Constitution prevents any other political party from being formed the overthrow of the party by constitutional means is not possible.

(b) The Governmental structure is no more than a gigantic facade, which presents to the populace of the USSR and to many unthinking persons in the West an aura of respectability behind whose doors the plotters of the Kremlin in the form of


DUAL STRUCTURE
GOVERNMENT ORGANIZATION
PARTY APPARATUS
PREMIER
BULGANIN — Currently No 2 Party Presidium
FIRST SECRETARY
PRESIDIUM OF COUNCIL OF MINISTERS
BULGANIN Chairman & 3 Vice Chairmen Members Party Presidium
PRESIDIUM
15 MEMBERS
COUNCIL OF MINISTERS
BULGANIN Chairman & 5 Vice Chairmen & ZHUKOV Defence Minister Members Party Presidium
54 MINISTERS
CENTRAL COMMITTEE (125 FULL 110 CANDIDATES)
PRESIDIUM OF SUPREME SOVIET
VOROSHILOV Chairman & KIRICHENKO Ukranian Chairman Members Party Presidium
SECRETARIAT
DIRECTS PARTY CELLS
16 CHAIRMEN OF REPUBLICS
15 MEMBERS
ARMED FORCES UNITS
FACTORIES
EDN. COLLECTIVE FARMS ETC
VILLAGES
STATE PUBLIC ORG
INTERNATIONAL COMMUNISM (COMINFORM)
SUPREME SOVIET
COUNCIL OF UNION
COUNCIL OF NATIONALITIES
700
631
Elected Representatives must be Members of Party
Direct Net
PARTY CONGRESS
SOVIET STATES PRESIDIUM COUNCIL SUPREME SOVIET FIRST SECRETARY SECRETARIAT
Elected Representatives must be Members of Party
PARTY
6,795,896 FULL MEMBERS
400,000 CANDIDATE MEMBERS
19,000,000 CONSOMOL (YOUNG PARTY MEMBERS)

the party Presidium manipulate the reins of Government.

Current Changes

The current changes which have taken place show that Khrushchev at the moment is the most powerful man in the USSR. It is no mean feat to remove completely the influence of 5 members[5] out of a total of 11 in the Presidium of the party. His tactics were to remove 3 initially, followed by a further 2[6] some 3 days later. Khrushchev's four secretaries from the Secretariat are now included in the increased Presidium, and this undoubtedly will strengthen his hand.

Another significant happening is the inclusion of Marshal Zhukov, the Defence Minister, in the party Presidium, the first professional Service officer to be so included. This indicates an increasing influence by the Armed Forces in the Soviet structure. The emergence of the Red Army as an influential factor took place in June 53, when two divisions were moved into Moscow to take over all key points. The arrest of Beria, number two in the party hierarchy, by two Army marshals followed. Until then Beria's secret police, numbering 400,000, had been the power behind the party Presidium, but following Beria's liquidation, together with many of his followers, its absolute power was broken.

The present Minister for State Security, Serov, is not a member of the party Presidium and does not hold Vice-Chairman's rank in the Council of Ministers. Zhukov's inclusion in the party Presidium has been hailed by some observers as heralding a more moderate line. It may be remembered that he was banished to the Odessa region by Stalin, who feared the popularity of this wartime figure, only returning to Moscow after Beria's arrest.[7]

Summary

Whilst the full implication of the current changes is still a matter for further speculation, the following facts emerge clearly:—

(a) Khrushchev has consolidated firmly his position as No. 1 in the Soviet hierarchy. He revealed his power by his ability to expel almost half of the existing Presidium, including Molotov, who had been an original Bolshevik member of the party Presidium since 1926 and No. 2 in the party and Deputy Premier under Stalin. His position has been strengthened further by the inclusion of the four Secretaries of the Secretariat of the Central Committee, of which he is First Secretary in the party Presidium.

(b) The power behind the party throne is now the Red Army led by Zhukov. On 16 July Zhukov added his voice to those condemning the purged members. Zhukov could well challenge Khrushchev for No. 1 position.

(c) Obvious differences in foreign policy existed and may still exist within the party hierarchy. In this regard some US observers feel that their unrelenting policy towards the

5. Jul 3: Malenkov, Molotov, Kaganovich, Peruvkin, Saburov.
6. Jul 6: Peruvkin, Saburov.
7. Some reports say half an hour later, which indicates the leading role he must have played.

USSR is paying dividends and has to some degree been responsible for the changes.

(d) The purged members were charged, amongst other things, "with showing narrow-mindedness in foreign policy and opposing peaceful co-existence and the relaxation of internal tension." This indeed is an attempt to parade scapegoats to the world for past actions, including repressive measures in Poland and Hungary.

(e) The ousting of the Stalinists was probably designed to win over Tito, who broke with Stalin in 1948 because he believed there were more ways to Communism than Stalin's. Again, Mao Tse-Tung's dictum "let every flower grow" reveals a similar attitude to Tito's, and it appears that the present Russian leaders are determined to align themselves with these two countries. To some extent Communist doctrinal authority has recently been lost to Peking, and the change may be designed to restore the balance to the Kremlin.

(f) Notwithstanding that last year the USSR reached an all-time productive peak, the lot of the common people in the USSR has not improved. The deposed members were also accused of "opposing the Communist Party appeal to overtake the US within the next few years in the per capita output of milk, butter and meat." So it would appear the purged are also the scapegoats for the low standard of living which applies in the USSR today. In this regard one of the basic aims of Communism has been to weaken the West by an armaments race; thereby they hope to make the West ripe for Communism by lowering the standard of living in the Western democracies. There is ample evidence to show that this is a two-edged weapon, and that the tremendous industrial resources of the West, particularly the US, are sufficient to out-produce the Soviet in all spheres and still retain a high standard of living.

Conclusion

Future changes in USSR policy will be watched with interest. Irrespective of the line adopted by the USSR, we can be sure of one thing: it will only be a variation of the means, the end remaining unchanged — a World Communist State.

TRAINING THE JUNGLE SHOT

Sergeant J. Vezgoff
Royal Australian Infantry

Although this article is based on the author's experience in anti-terrorist operations, the ability to shoot in the way he describes is a requirement for ALL jungle operations.—Editor.

DUE to more emphasis being placed on Jungle Warfare training in Australia, we are faced with the problem of training the soldier to shoot under jungle conditions and getting the maximum effect from his shooting ability.

How can be achieve this aim? Let us discuss the problem under the following headings:—

(1) Ranges.

(2) Weapons.

(3) Aids to night shooting.

(4) Special Jungle Shooting Course.

(5) Employment of best Jungle Shots.

Ranges

The soldier of today must be taught not only to shoot but to find and shoot at indistinct and moving targets from any aiming position. The skill required is the quick reaction of mind, hand and eye, at normally short ranges.

Training on the normal type of range trains a man to be accurate and to take snap shots at easily seen targets. Nearly all his shooting is done in the prone position and by word of command. This is a necessary step in the initial training of recruits. But to continue this type of range practice year in, year out is to ignore the realities which today face our troops in Malaya, and which will in all probability face our Army in a future war. Therefore we must get away from this stereotyped training, and get on with the job of constructing ranges which blend with wartime realism—moving targets, snap targets, camouflaged targets, running targets, targets that one encounters in the jungle with only a few precious seconds in which to kill or be killed.

Over the last couple of years the Americans have been converting numerous open ranges into miniature battlefields, where targets appear in unlikely places. (See "Training the Military Shot," AAJ 98 and 99). Though this is far from jungle shooting, it is a much better method of training the soldier to be a good, quick, accurate shot. Construction costs might be high, but the dividends would eclipse the

Weapon	15 yds	35 yds	55 yds	75 yds	100 yds
Browning Automatic Shotgun (9 x .331)	19.2	9.1	5.6	2.7	1.5
Owen SMG	5.9	3.8	2.8	2.1	1.3
Patchett SMG	4.9	2.6	1.8	1.5	0.9
M.2 Carbine	3.6	2.4	1.5	1.4	0.8
M.1 Carbine	3.0	2.4	1.5	1.4	0.8
Bren LMG	3.8	2.0	1.3	1.1	0.9
No. 5 Rifle	1.5	1.2	0.7	0.6	0.6

Table "A"

initial outlay by the improvement in the soldier's shooting ability.

Weapons

Tests have been carried out by the Jungle Wing of the Far Eastern Land Forces Training Centre, Malaya, with the object of finding out what are the most suitable weapons for use in the jungle. Considerations of stopping power or mechanical functioning were not taken into account. The targets used were:—

(a) Stationary target 1½ second exposure, after first shot, moving —total exposure 4 seconds.

(b) Stationary target, 2 seconds' exposure.

Table "A" lists the combined highest average of hits per weapon at each range.

Obviously the shotgun has the advantage, due to the fact that each SG cartridge contains 9 x .331 lead balls, compared to one projectile by other weapons. It is very reassuring to see the Australian Owen comes next in the field. Deductions to be gathered from this test would recommend the shotgun as the weapon for a forward scout. In Malaya today it is used in this role effectively.

On the whole, it seems that automatic weapons such as the Owen provide the answer for this particular type of warfare, and if we can allow more of them in the infantry section it will be all to the good.

Aids to Night Shooting

Obviously war does not cease at night in the jungle. Both sides send out fighting and reconnaissance patrols and lay ambushes. Therefore the soldier must know the aids which help him to shoot at night, and he must be practised in their use until he is an accomplished jungle night shot.

In Malaya today there is very little night activity apart from food lifts by the Communist terrorists around the villages. Consequently the security forces, since they are able to concentrate on combating this single activity, have developed a high degree of efficiency in shooting with the aid of various modifi-

cations of the trip flare. Shooting with these aids is very different from our normal musketry practices, and we ought to give it much more emphasis in our training.

Special Shooting Course

We could afford to run each year a series of special courses, possibly combined with existing facilities at the Jungle Training Centre at Canungra. These courses could be of two or three weeks' duration and could concentrate solely on shooting at various types of targets by day and by night. Interesting ranges with a lot of variety would be required. Regular courses of this nature would certainly improve our jungle shooting. An incentive would be provided if qualification at one of them was made part of the soldier's grading. The record of his qualification at the course should be entered in his AAB 83 for future reference when determining his employment in the rifle company.

Employment of Best Jungle Shots

Once we have a good idea of the soldier's shooting ability we would be in a better position to employ him in a role where this skill could be most effectively used.

In the terrorist operations in Malaya nearly all contacts are head-on meetings between two patrols. The terrorist patrol usually flees after the first exchange of shots. Study of Intelligence reports shows that there are not nearly as many kills on contact as there ought to be. It is suggested that much better results could be achieved by first classifying the best jungle shots, and then placing them with the forward element of the patrol, where they would have the chance to make the best possible use of their skill in the short time available.

Summary

1. Are we up-to-date with the modern trend of musketry training practiced in the British and American Armies? If we are not, let us give some thought to this important problem, remembering that realism must be the keynote.

2. We should have more automatic weapons per section for jungle operations.

3. We should place more emphasis on night shooting.

4. We should have special jungle shooting courses to train soldiers to:—

(a) Have confidence in themselves and their weapons.

(b) Have confidence in their ability to hit any sort of jungle target with 100 per cent. success.

5. The record of the soldier's performance on these courses should be entered in his AAB 83 for the guidance of his leaders when determining his employment in jungle operations.

Finally, practice, practice, practice on ranges which blend with wartime realism. Let us get away from our open ranges, and I am sure we will be heading in the right direction—the production of good jungle shots.

BRITAIN'S STREAMLINED ARMY

Major-General L. O. Lyne

Major-General Lyne commanded 50th and 59th Divisions and the 7th Armoured Division in the campaign in North-West Europe in 1944-45

BEFORE the last war, we in Britain depended in peace upon an army recruited by voluntary enlistment to carry out all our peacetime requirements. Since the war it has not so far been possible to fulfil our obligations to our allies in the North Atlantic Treaty Organization, and to provide the necessary garrisons at home and overseas, without a large element of National Service men serving on a two-year basis.

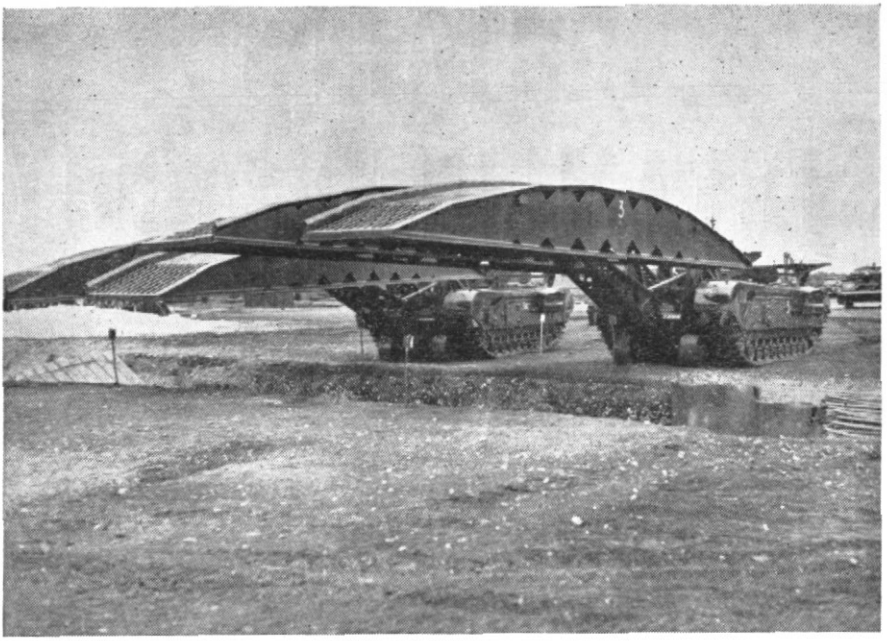
Now, however, it has become practicable to reduce the National Service entry progressively over the next few years until, in 1961, a point is reached when, with a slightly increased regular intake, National Service can be abolished altogether. How is this reduction of manpower possible, and will it mean a weaker British Army are two questions which will be widely discussed.

A Complete Armoury

First, it must be remembered that a great number of regulars are now tied up in training National Service men, whose turnover in so short a period of service as two years is very rapid and wasteful. Longer service regular recruits will greatly reduce the strain on the training machine.

We have now reached a stage in the development of hydrogen and atomic weapons when the power of the deterrent weapon transcends all other military considerations. Its application tactically in the field means that we must resort to smaller formations, with greater mobility, a simplification of weapons and the most drastic reduction in headquarters and administrative echelons.

This is exactly what is planned



BRIDGING THE GAP. The British School of Military Engineering recently demonstrated the current techniques for the Main engineer battle tasks. These two track vehicles are seen lowering steel bridge sections over a gap for the passage of tanks.

for the new British Army. To deal first with weapons, on which much more than numbers, the power of a modern army depends; the aim will be to provide a complete armoury which is a fine balance between the requirements of global war on the one hand and of limited operations on the other. Care will be taken to ensure that there is no duplication or overlap and that equipment is standardized and simplified as much as possible.

The first surface to surface guided weapon regiment, Royal Artillery, equipped with the American "Corporal," is now forming, and a second will be added during the year. The potential fire power of these units when their missiles are armed with atomic warheads far exceeds the heaviest artillery concentration of the last war, whilst employing a mere fraction of the manpower.

Much experience was gained by the army in the nuclear trials in Australia last year, where a full range of army equipment was tested. The equipment of the army with operational radiac instruments to measure nuclear radiations from both a nuclear explosion and from radioactive fallout is making good progress. During the year troop trials of the new Belgian FN rifle have been completed, and fully justified the high expectations of performance and accuracy. These

rifles are now rapidly going into service. Large-scale production of a new machine-gun is planned to replace the Sten gun, and trials are taking place to find a successor to the British Vickers machine-gun. New type radio sets and new pattern combat equipment will receive further trials this year.

On its field trials the Conqueror tank proved it could defeat any known tank, though Britain has an anti-tank guided weapon which, in the words of the Secretary of State for War, "should, if all goes well, remove the heavy tank from the battlefield." A new medium tank in an advanced stage should be valuable in providing the close support for infantry which the guided weapon cannot give.

Smaller and More Flexible

Smaller and more mobile formations may well mean the end of the divisional organization which served us so well in two world wars. The Brigade Group is handier, smaller and more flexible, and is likely to be about as large a formation as can be effectively commanded and administered in the difficult conditions which any use of atomic weapons would bring about. Reductions are also being made in the size of many units.

All these changes, necessary as they may be from manpower considerations, are also desirable to reduce numbers and hence congestion in a possible atomic global war, or indeed in a more limited war where atomic weapons are used. The problem remains of how to produce sufficient force—and this always means, where internal security is at stake, sufficient infantrymen in any trouble spot in as short a time as possible.

Here, air transport very largely provides the answer. The formation of a highly trained central reserve in the United Kingdom and a smaller reserve in Africa, both with an adequate allotment of transport aircraft, should allow quick reinforcement when trouble threatens. The home reserve of all arms, including paratroops, would enable the most rapid deployment possible of a force varying in strength according to the requirements, while ensuring that all units are kept at a high state of training and readiness.

The answer to the two questions posed earlier in this article then appears to be as follows: The proposed manpower reduction over the next five years is made possible by a realistic reassessment of the real requirements of an atomic age, where all congestion must be avoided, where modern weapons give greatly increased fire power to small forces and where the mobility of transport aircraft enables a central reserve to achieve what hitherto only widely scattered garrisons could ensure.

The British Army which will emerge at the end of the present five-year plan should be fully capable of waging limited or global war if the necessity should ever arise.

GUIDED MISSILE IMPLICATIONS

Eilene Galloway, The Library of Congress
Abridged by Major Nels A. Parsons, Jr., US Army
Reprinted from the June 1957 issue of the "Military Review,"
Command and General Staff College, Fort Leavenworth, USA.

The direction and the progress of development in the missile weapons field and, more important, the impact of these weapons on strategy, national policy and military organization for defence are vital matters to the military planner today. "Guided Missiles in Foreign Countries," is the title of a new study prepared for the Armed Services Committee of the United States Senate by the Legislative Reference Service of The Library of Congress. The report, utilizing unclassified information published in six languages, describes the development progress in rockets and missiles made by various foreign countries to date, and undertakes to analyze the implications of missile development for the pattern of future warfare, United States foreign policy, and defence appropriations. The report was prepared by Eilene Galloway, national defence analyst of the Foreign Affairs Division. The following abridgment of the complete study was produced for the Military Review *by Major Nels A. Parsons, Jr.,* Artillery, *author of the book* Guided Missiles in War and Peace. *In the interest of space economy, original sources of information listed in the pamphlet have been omitted.—Editor,* Military Review.

THE purpose of this study is to survey the missile and rocket programmes of foreign countries to determine how far they have progressed in developing advanced weapons which are revolutionizing the art of warfare.

The description of missile development in each of the foreign countries is based upon published information in documents, books and periodicals which are unclassified.

No Government, however, publicizes nearly as many details of its missile progress as the United States. Whereas historically it has

been the usual policy of Governments to conceal the existence of advanced weapons, it is now commonplace for the Great Powers to notify the enemy in advance of what he may expect in the way of retaliation if he launches an attack. A certain amount of publicity is a concomitant of a deterrent military force. How can an enemy be deterred unless he knows his adversary has such military might that he is afraid to start a war?

Foreign Countries

1. *Great Britain*

The vulnerability of the United Kingdom to rocket and missile attack became apparent during World War II, when German *V-1* and *V-2* missiles caused extensive damage to densely populated areas. The development of the atomic bomb toward the end of the war, and the implications for the future of enemy attacks by missiles with nuclear warheads, gave impetus to a postwar development programme which would meet Britain's requirements for defence.

Britain's needs are in contrast to those of the United States, whose vast area makes it possible to organize a defence in depth with the possibility of using fighter interceptor planes and an early warning system that provides at least some margin of time. England is such a small country that the speed of jet bombers, not to mention missiles, offers no margin in depth of defence.

It would not only be easier for the Soviet Union to strike Britain than the United States, but such a possibility must be taken into consideration in making defence plans, because Britain, a deterrent base against the USSR, is therefore a target.

Even if long-range missiles are not actually used against England, their existence and the possibility that they might be used may be a sufficient threat to affect British policy. That such psychological pressure was the intent in the note addressed by Soviet Premier Nikolai A. Bulganin to Prime Minister Anthony Eden during the Middle East crisis, there can be no doubt. After referring, in a simultaneous note to President Eisenhower, to the fact that the Soviet Union and the United States are "the two great powers which possess all modern types of arms, including the atomic and hydrogen weapons," Premier Bulganin's note to the United Kingdom takes on special meaning:

> *In what position would Britain have found herself if she herself had been attacked by more powerful states possessing every kind of modern destructive weapon?*
>
> *And there are countries now which need not have sent a navy or air force to the coasts of Britain, but could have used other means, such as rocket techniques. . . .*

British military policy is similar to that of the United States in emphasizing deterrent strength to prevent war as well as the capability of fighting successfully if an enemy attack is launched. The British missile programme is developing within this concept of defence policy.

There was criticism from the opposition Members of Parliament of the delay in missile development,

and the Minister of Defence answered this by explaining that the rapidity of scientific development was such that the Government had decided not to commit its limited resources to weapons that might be obsolete by the time they became operational. Instead, the plan was to take a longer time for research before going into full production. This explained why British development was behind that of the United States.

In February, 1956, the Government's Statement on Defence reported the continued expansion of nuclear-weapon development, and that ballistic rockets as a deterrent to aggression were being emphasized. Progress in guided missile development is being made for the Navy, Army and Air Force, and servicemen are becoming experienced in the use of these weapons by taking part in test trials. The programme for the Navy provides for the installation of guided missiles in new cruisers and destroyers. The Army is receiving, in 1956, its first shipments of the United States *Corporal*, surface-to-surface guided missile, and plans are under way for training British soldiers in its use.

Five lines of development are currently being followed in the British missile programme:

1. The intercontinental ballistic missile with H-bomb warhead, possibly atomic-powered, together with an interim ramjet bombardment missile having an atomic warhead if required.

2. One or two advanced ground-to-air weapons capable of shooting down supersonic aircraft.

3. A medium range ship-to-ship or ship-to-shore bombardment missile, probably with an atomic warhead.

4. At least two air-to-air missiles, one for intermediate use, and the other for such advanced fighters as the English Electric *P. 1*, the Gloster *Olympus-Javelin*, and the Saunders-Roe *SR. 53* jet-plus-rocket type.[1]

5. An aircraft-to-ship anti-submarine weapon which will be the mainstay of Coastal Command's and the Fleet Air Arm's anti-submarine squadrons.[1]

On February 13, 1957, Mr. Sandys (Minister of Defence) explained that his task was "to reshape the forces, not to mutilate them," and that "any reductions we make must be part of a coherent plan and one which makes sense militarily as well as financially."

. . . it is quite clear . . . that ultimately the threat to this island will come not from manned bombers but from nuclear ballistic projectiles. It is similarly clear that in the future the effectiveness of our deterrent power will also depend upon the possession by us of these weapons.

Subsequent to the Bermuda conference in March of this year, press reports indicated: "Officials said the 1,500-mile range 'intermediate' missile without atomic warheads would be supplied to Britain. But the United States also will stock atomic warheads in Britain, keeping them under its own control, as required by law, except in event of war,

[1] In view of Great Britain's recent decision to discontinue all combat aircraft development and turn exclusively to missile artillery, the future of these lines of development is in doubt.—Editor.

when the President has authority to supply them to allied forces.

* * * * *

"The decision on missiles was linked directly to the Suez crisis and Soviet reaction to it. An official recalled Soviet threats to use guided missiles against Britain and pointed out that Britain at that time had no capacity to retaliate. Under the new plan, this official said Britain would be stronger, and the presence of the guided missiles on that island—about 1,200 miles from Moscow—would be a deterrent to attack in the future."

2. *Australia*

Australia was able to provide a range of one million square miles, practically uninhabited, extending 1,200 miles north-west from Woomera to the Indian Ocean, and beyond that to Christmas Island, a total distance of 2,700 miles. Furthermore, a growing industrial potential was to be found in south-eastern Australia.

By May 1953 it was announced that 440 guided missiles and 700 rockets had been set off at Woomera since 1950. Continuous testing was being made of ground-to-ground, ground-to-air, and air-to-ground weapons, and a total of 2,200 bombs had been dropped. It was also reported that a guided bomb was being developed. On July 21, 1953, Australian Supply Minister Howard Beale announced that atomic bombs would be tested by Britain at Woomera. Another large testing ground was later to become available at Maralinga in Western Australia.

3. *Canada*

Although most of the Commonwealth's research and development of guided missiles is being done by Britain and Australia, Canada has a programme of her own which is directed toward capability to perform the air-defence mission. Study of the problem was begun in 1947 by the Defence Research Board, particular attention being paid to the development of a family of air-to-air missiles in line with co-operative arrangements made with the United Kingdom and the United States.

It seems probable that the Canadian programme is more effective in producing skilled personnel in the armed services, in Government, and in industry, than it is in quantity production of missiles. Canada's close ties with the United Kingdom and with the defence system of the United States make it possible for her to rely upon the results of their operational missiles.

4. *France*

Guided-missile development in France during the last 10 years has not been accompanied by the degree of publicity which characterizes the United States programme. It is perhaps natural that security checks are applied during a period of research and development. When positive results can be demonstrated, however, the public is usually informed of the major outlines of the achievement.

Recent information indicates that France has been engaged in producing all types of *engins spéciaux* — guided weapons: surface-to-air rockets, surface-to-surface missiles, air-to-air missiles, air-to-surface rockets, and target aircraft that can be guided by remote control.

The first operational ground-to-air missile, the *PARCA*, was developed for the French Army General Staff and the Armament Research and Production Directorate.

The rocket, launched by multiple boosters, which fall off when the speed of sound is exceeded, continues to climb while guided by radio and controlled from a ground station. This anti-aircraft rocket is reported to be capable of hitting enemy planes "at all altitudes," its warhead being equipped with a proximity fuse which detonates as the *PARCA* nears the target.

In the surface-to-surface missile class, the French are developing the *SE. 4200*, a ramjet missile launched by rockets from mobile ramps. Anti-tank rockets are also being produced: the *SFECMAS 5200*, the *ENTAC*, and the *SFECMAS 5210*. The first two of these rockets are limited in range by the length of wire carried in the fins. The *5210* has a longer range, however, and is being produced for the army as well as for the air force, which plans to use the missile from the air against ground targets.

5. *Italy*

Italian scientists, industrialists and representatives of the three armed services are co-operating in a missile programme which is designed to keep Italy abreast of new weapon development. Lacking the large appropriations necessary for the production of significant numbers of guided missiles, Italy is devoting most of her effort to research and development at this stage. There is, however, a growing effort on the part of equipment needed for a guided-missile programme.

6. *NATO*

Congress appropriated funds for Fiscal 1957 which may be used to equip our NATO allies with United States missiles. On March 19, 1956, President Eisenhower sent to the Congress his message on the mutual security programme. In asking for funds to strengthen our allies with advanced weapons for defence, the President said:

I recommend that about $530 million be made available to enable the Department of Defence to begin a programme of aiding our allies in developing an even more effective defence based on an improved and better co-ordinated early warning and communications system and utilizing advanced weapons systems, including missiles, *now being procured for our troops.*

These advance weapons, which are purely defensive in character, pose no threat to any nation which does not initiate aggression. They are designed to give warning of, and repel, such aggression—and by their potential effectiveness to deter it.

Early in 1957 there were several significant developments in connection with the use of missiles by NATO. On January 16, the President sent his Budget message for Fiscal 1958 to the Congress, and in the accompanying analysis of basic military missions it was pointed out that—

A third mission is to maintain mobile and versatile forces suitably deployed and ready for immediate action in case of aggression. Army divisions are being reorganized into more flexible units supported with the latest atomic weapons and with aviation units. In addition, the

Army will increase the number of atomic support commands[2] which are particularly suitable as back-up for the ground forces of allied countries.

The analysis of current authorizations states that—

"These new atomic support commands are particularly suitable to provide atomic support for the forces of our friends and allies abroad."

It was reported that United States forces would be supplied with atomic weapons, that nuclear warheads would be stockpiled and made available to NATO forces if an emergency arose, and that NATO instructors would be trained in the use of such weapons, including missiles. A programme is being arranged by the Department of Defence to bring approximately 100 instructors to the United States from a number of Western allied nations so that courses of instruction can be given in the use of guided missiles.

7. *Sweden*

The Swedish Government has an extensive missile programme to meet the requirements of the army, the navy, and the air force.

Financing for the research and development of missiles was included as part of the regular defence expenditures prior to 1954-55. At that time, however, it was decided to undertake the development of a high altitude interceptor missile, and the Air Force was allocated Sw. Kr. 25 million for that purpose. Between 1960 and 1965, Sweden plans to spend Kr. 600 million for new weapons—approximately $120 million—"believed to include mainly missiles."

[2] Latest Nomenclature: United States Army Missile Commands.—Editor.

The new air defence missile is reported to have a range of from 120 to 150 miles and to be somewhat more complicated in design than the United States Douglas *Nike*.

Probably the most significant point to add is that Sweden has the capability of equipping missiles and rockets with nuclear warheads. The industrial capacity and the scientific knowledge and man-power are available to develop atomic energy.

8. *Switzerland*

Switzerland's requirement for guided missiles stems from her national defence needs in an atomic era. Continuation of the traditional policy of armed neutrality as a defence against all possible contingencies means that Switzerland must keep up with military developments which are taking place in other countries. Being a neutral nation, Switzerland does not wish to participate in alliances and military agreements, holding that the best defence lies in a guarded frontier, a mobile army, a home guard and an air defence against attacks by planes or missiles. Aerial defence cannot be achieved by fighter-pursuit planes because of the small size of the country, and, therefore, it was natural that attention should be directed toward the development of guided missiles and rockets. The combination of skilled scientific man-power with the high level of Swiss industry resulted in the development of a successful ground-to-air missile.

The type 54 anti-aircraft missile was produced by the Oerlikon Machine Tool Works, Buhrle & Co., which is located in Oerlikon, a suburb of Zürich. Unlike the closely guarded secrets of Government pro-

grammes which at most publish pictures and general descriptions of new missile types, the Oerlikon Co. has had public displays of a complete anti-aircraft missile system and has released technical engineering descriptions, pictures and charts of its precision weapons. The ammunition necessary for these weapons is also produced by the Oerlikon Co.

The Swiss rocket and missile programme is a private enterprise rather than a Government programme, although production is designed for anti-aircraft units of the Swiss Army.

"It is not stated whether the Swiss Government are prepared to export the weapon; if they are, it would seem that this will be the first missile capable of being bought 'over the counter'."

9. *USSR*

At the end of World War II the Soviet Union and the Western Allies came into possession of Germany's programme for rocket and missile development. There was an agreement for mutual inspection of such programmes, and, as matters fell out, more than 200 German scientists came to the United States, among them some outstanding missile experts. The United States also obtained about 100 *V-2* missiles, many of which were tested later on the White Sands range. The Soviet Union, however, took over not only about 80 per cent. of the German aircraft industry in East Germany, but also all types of missiles, plans, plants, testing centres, and key scientific personnel that had been engaged in producing *V-1* and *V-2* rockets for the war. Altogether 160 German rocket experts went to work for the Soviet missile programme, which was given top priority by Stalin.

By adding advanced German rocket development to the Russian programme which had started before World War II, and indeed can be traced back 50 years as far as basic research is concerned, the Soviet Union was in a strong position to forge ahead. All the requirements for attaining a predominant position in this missile field were present: technicians and scientists with ideas; excellent research laboratories; factories to produce precision instruments; testing grounds and equipment; and, above all, a determined drive by the Government to succeed.

Whereas the United States guided-missile programme has been accompanied by official publicity on appropriations, personnel, location of research and production centres, photographs and exhibits of new weapons, the USSR has maintained a policy of secrecy broken by a few official announcements.

In February 1956 Marshal Georgi K. Zhukov, Soviet Defence Minister, addressed the 20th Communist Party Congress in Moscow, stating that the Soviet armed forces had been "completely transformed" since World War II, and that the Soviet Union already had "diverse atomic and hydrogen weapons, powerful rocket and jet armament of various kinds, including long-range rockets."

The administration of the rocket and missile programme is in a special department under the Ministry of War. Headed by an army artillery expert, Marshal N. D. Yakovlev, this department has jurisdiction

over top-level research and development projects, including thermo-nuclear weapons and cosmic ray research. Whether or not Marshal Yakovlev has charge of production as well as research is not known; the usual Soviet practice is to separate the administration of such projects.

Some of the most detailed and up-to-date information on the Soviet missile programme has been written by Richard E. Stockwell in his book, *Soviet Air Power*, published in 1956. Mr. Stockwell is consultant to the aircraft gas turbine division of the General Electric Company, Cincinnati, Ohio.

In comparing the missile development of the United States with that of the Soviet Union, Mr. Stockwell gives this estimate:

Available information indicates the Soviets have fewer missiles in production but more under development than the United States. And they have in mind to use them in about as many different ways as the United States.

Air-to-air Missiles.—The German *R4/M* rocket has been converted and improved for use on Soviet fighters, and has been seen on *MiG-15's*, and is "thought to be on some Soviet all-weather interceptors."

Air-to-surface Missiles. — The *RS-82* is an 82-millimetre rocket made to fire from planes to ground targets, but it "may now be obsolete." An anti-tank rocket of 55 pounds is made for use against heavily armoured weapons. The third known type is the *M-100*, a 154-pound weapon which is lifted by plane before it is fired.

Surface-to-air Missiles.—There are at least seven types of anti-aircraft missiles, four representing the improvements on original German designs. The *Rheintochter*, probably used to defend Moscow against enemy planes, was originally designed for guidance by radar and radio, but it is now likely that the missiles are guided by built-in radar devices.

The Soviet *C-2* is an advanced version of the German *Wasserfall*, which was large enough to destroy bombers flying in formation. The *C-2* has a thrust of 17,000 pounds and can attain an altitude of 50,000 feet flying as fast as 1,200 miles per hour. These missiles afford additional protection to Moscow.

Three new versions of the former German Henschel *HS-117*—the *Butterfly*—have been developed with different types of power: a *BMW* rocket engine, a Walter *HWK-109-729* engine, and a ramjet power plant. The latter has automatic firing and can fly 600 miles per hour.

One surface-to-air missile is similar to the United States Boeing *GAPA* missile, and was developed from the original German *Taifun* (typhoon). This missile can fly up to 50,000 feet at a maximum rate of 2,700 miles per hour. It is possible that either the *Taifun* or the *C-2* is used by the Soviet Navy for anti-aircraft protection; at any rate, the new cruiser, the *Sverdlov*, was observed to have missile protection when it docked in England for the coronation of the Queen.

Another surface-to-air missile is similar in profile to the *102A* interceptor built for the United States Air Force by the Convair division

of General Dynamics Corp. It has been reported that the Soviet type has an altitude of over 75,000 feet.

Underwater-to-surface Missiles.—These are being developed for use by long-range submarines against cities located along sea coasts. It has been reported that this missile can be sent to a target 140 miles distant, and that it has been fired from 300 feet below the surface of the sea.

Surface-to-surface Missiles.—The Soviet Army has a 200-mile range tactical missile (an improved version of the German *A-4* or *V-2),* which can be launched from a mobile base. The *C-2,* with a 35 to 40 mile range, can also be fired from mobile equipment. The fact that the *C-2* can be used both as a surface-to-surface as well as a surface-to-air missile is evidence of the manner in which the Russians have simplified their problems of engineering and manufacturing.

A 530-mile range missile for tactical purposes has been developed by adding wings to the German *A-4* missile. Two surface-to-surface ramjet missiles have been counted as part of the arsenal. There is also said to be a lorin type ramjet missile which is fired from heavy artillery.

Intercontinental Ballistic Missiles.—It is not known how long the Soviet Union has been working on an ICBM, but the basis for such a missile was worked out by the Germans at Peenemünde in plans for the *A-10.* An improved *A-10* — the *M-103* — was designed at Khimki, a research centre near Moscow.

"Its calculated range is about 3,500 miles. Whether or not it has been tested isn't known. [According to Stockwell.]"

"However, the numerous missile facilities along the USSR's northern fringes, within the Arctic Circle, suggest a very long-range missile test range rivalling USAF's Missile Test Centre that extends into the South Atlantic from Cape Canaveral, Fla., or the British facilities at Woomera, Australia."

"That the Soviets haven't been quite as successful with guided missiles as they have been in the development of aircraft and aircraft engines is indicated by the available evidence. Not only have many of the German missile experts been kept in the USSR, but control and guidance techniques are known to plague the Soviets in much the same way they have slowed missile progress in the West."

One of the most informed writers on Soviet missile progress is Dr. Walter R. Dornberger, who was the German major-general in charge of the Army Missile Experiment Station at Peenemünde during World War II. Following the war he came to the United States, where he took out citizenship papers and became missile consultant of the Bell Aircraft Corp., Buffalo, N.Y.

Dr. Dornberger estimated that both the Soviet Union and the United States started from "the same level of inexperience" after the war, but pursued different lines of development. The Soviet Union reassembled and relocated German missile facilities and began producing them for the army, whereas the United States spent more time

on the research and development base of a modern weapons system.

In an article on the State of the Art published in June 1956, Erik Bergaust has described Soviet missile progress in comparison with that of the United States. Mr. Bergaust, managing editor of *Missiles and Rockets*, thinks that as a result of working with the German *V-2's* the Soviet Union may have had more experience than the United States in operating ballistic missiles, but that—"it is presumably safe to say that the United States is still ahead of the Soviet as far as missile technology, production and electronics are concerned."

Alfred J. Zaehringer, president of the American Rocket Co., Wyandotte, Mich., has recorded the rapid progress being made by the Soviet Union in the production of missiles.

Large motors powered with composite propellants have resulted in a weapon which combines—"the simplicity of the *Honest John* (solid propellant) and the range of the *Corporal* (liquid propellant). This Soviet missile is particularly suited for use in the Arctic."

"The country (the Soviet Union) now has at least four naval attack fleets; each fleet is equipped with 800 to 900 jet aircraft and 90 missile launching submarines. It also has 370 to 400 submarines, 150 of which are long-range types. One missile-carrying submarine is being launched each week."

IMPLICATIONS

The development of rockets and missiles by an increasing number of countries is one of the factors in the problem of averting war and preserving world peace. The new elements that have been added to the weapons of warfare, rendering the problem of control more acute, are the combination of nuclear warheads with missiles which have increased in speed and range, and the advances of electronics which make it possible to guide missiles to targets with increasing degrees of accuracy. Problems are being created which have implications for the pattern of future warfare, United States foreign policy and defence appropriations.

Implications for Future Warfare

The dimensions of the problem that seemed grave enough when manned bombers could deliver the first atomic bombs in 1945, have burst their bounds with the prospect of an intercontinental ballistic missile that can travel 5,000 miles in 30 minutes, carrying a hydrogen bomb capable of demolishing a city. *It is the prospect of this weapon*, as well as the intermediate range missile of 1,500 miles or more, that complicates the control of forces that make for peace or war.

We must assume, of course, that the enemy can also develop anti-missile missiles to the extent that they are possible, and this probability has grave implications for the composition of the Air Force: at what date would it be feasible to *substitute guided missiles for* manned bombers that cannot be expected to reach their targets; and to what extent can missiles be made as accurate as bombers in hitting specific targets? In other words, to what degree, and by what time, can guided missiles be expected to achieve the mission which the Stra-

tegic Air Command is now prepared to fulfil with piloted aircraft? At present the concensus of opinion is that military preparedness requires both weapons; the ICBM and IRBM could be used against large, immovable targets where co-ordinates at launching and delivery points can be accurately determined; piloted aircraft could be used against pinpoint or small moving targets where the pilot's judgment at the time of action and the manoeuvreability of the plane are essential to success.

Military strategy is less likely to be affected by the advent of guided missiles than tactics. The national policy of the United States, and the policy upon which our Western alliance is built, would still emphasize deterrent military strength; the main objective would remain the prevention of war, but if one were started by an enemy we would have the capability for massive retaliation as well as defensive strength designed to ensure our survival. The price in mutual devastation could be even higher with ICBM's and IRBM's than with hydrogen bombs delivered by bombers. The essential change is in the vehicle for delivery of a nuclear bomb, a change from fast high-altitude bombers to guided missiles that are even "faster, higher and hotter." All the analyses that were made of the strategic implications stemming from the combination of nuclear bombs with long-range bombers are still valid as applied to warfare with guided missiles. These analyses stress the fact that if both the United States and the USSR possess the means of delivering hydrogen bombs on each other the result will be a stalemate—a balance of power based upon fear of the awful consequences of a total thermonuclear war. If the stalemate were actually broken by such a war, then the methods of warfare — whether manned bombers or guided missiles are used—could not bear a relationship to any tenable political objective; the result would be mutual suicide.

There is one element that could change the strategy that now relies upon deterrence and the capacity for retaliation. If an enemy of the United States were substantially ahead in achieving operational ICBM's and IRBM's, the weapons could be used for blackmail, particularly if this happened before anti-missile missiles were developed and perfected. The United States is deterred from starting a war by the national psychology of the people, their democratic institutions, the objective of settling international disputes through the United Nations, or by other peaceful means; it is not necessary for an enemy to have superior military force to deter the United States from going to war. When the United States had a monopoly of the atomic bomb, it was international control, not aggression, that was sought. But if the United States should lose its superior military position there would no longer be a deterrent force in the sense that a powerful enemy would have much to fear. It is for this reason that the guided-missile programme in the United States is being given top priority.

ICBM's and IRBM's are not all-purpose weapons which wipe out the need for other methods of warfare; indeed, sole reliance upon

them would predetermine the pattern of hostilities and lead to the very kind of annihilating war we are seeking most to avoid. Furthermore, it is most unlikely that one type of weapon would replace a weapons system in its entirety. If a war had to be fought, it would probably be with something old and something new, and with whatever equipment was available to the forces-in-being when the first shot was fired.

Implications for United States Foreign Policy

The development of rockets and missiles by foreign countries creates a situation which must be taken into account by those who are dealing with the implementation of United States foreign policy. If peace is to be maintained; if war is to be prevented; if armaments are to be controlled; if international conflicts are to be settled by the United Nations; then the relation of these objectives to the fact that the most advanced weapons of warfare are becoming available to an increasing number of nations takes on special significance.

The missile race has political and military implications which are bound to affect the foreign policy of all nations concerned, particularly the military base system of the Western alliance. This situation has been analyzed by the Interavia Study Group according to five hypotheses.[3]

The first hypothesis:

Supposing that Russia is the first to perfect a missile with atomic or thermo-nuclear warhead, a range of 1,200 or 1,500 miles and adequate precision of aim, over this range, allowing for the radius of destruction of the explosive carried.

In this event, not only Europe would be threatened by Soviet missiles but also non-Communist Asia if the Russians permitted their use by Communist China. All airbases of the Western Nations, except those located in the United States, would be vulnerable to such a missile attack, and the serious nature of this situation is evident from the fact that a high percentage of the planes in the Strategic Air Command have a range which makes them dependent upon bases around the periphery of the Communist nations or upon being refuelled while in flight. The Soviet Union would have an important but not decisive military capability; even though they might destroy advanced Western bases, the Strategic Air Command could operate from the United States and the Navy could perform its strategic mission from carriers. The political consequence of the hypothesis, however, could be even more severe: threatened nations might feel there was no use in trying to build a defence against a downpour of missiles; if they were fired rapidly, many would get through despite radar warning nets, fighter planes and the kind of surface-to-air missiles that are now available. Such a threat might tend to promote the growth of neutralism and thus affect military plans based upon strong and loyal alliances.

The second hypothesis:

In this case the Western bloc is assumed to have gained the lead.

[3] The Intercontinental Ballistic Missile Will Change Tactics but Not Strategy. By Interavia Study Group, Interavia, Vol. 11, June, 1956, pp. 408-412.

If the United States develops IRBM's with nuclear warheads and a dependable degree of accuracy, it would be in a position to attack the most vulnerable targets in the USSR and China; provided, of course, that the base structure holds firm. Whereas the Soviet Union could not knock out the SAC retaliatory capability with intermediate range missiles, the reverse would be true if the United States had them. The United States has a defensive military policy, and will not use its weapons unless an aggressor starts a war, but a decisive lead in the IRBM field would tend to strengthen Western diplomacy.

If a situation developed that conformed to either the first or the second hypothesis, one nation or the other would gain or lose various military advantages, but neither would be in such a strong position as to change the balance of power.

The third hypothesis:

Assuming the Soviety Union succeeded, before the United States, in developing, testing, and producing a substantial number of intercontinental missiles with atomic warheads.

The Soviet Union would then have an offensive force which could attack any target in the world. Even so, the United States would still have a strong force of manned bombers in SAC and the Navy, sufficient perhaps to deter aggression, because the enemy could not be sure of destroying all United States strength at the outset of a war. The balance of military force would be similar to that which exists today.

The fourth hypothesis:

If the United States were the first to prepare a stock of ICBM's; the instruments of a policy of deterrence would be strengthened.

It would no longer be necessary to depend so much upon bases outside United States territory. Otherwise the situation would be similar to that which existed from 1946-50, when the United States had a monopoly of the atomic bomb; the weapon had its chief use when it was not used, i.e., when it was a deterrent rather than a destructive explosion. Even with the ICBM, the Western Nations would probably find it desirable to maintain deterrent forces near the periphery of the Communist bloc.

The fifth hypothesis:

Development of an almost 100 per cent. effective anti-missile.

If such a scientific breakthrough occurred, it would change the estimated consequences of the first four hypotheses. An aggressor would no longer fear retaliation because invading forces of planes or missiles could be destroyed before reaching their targets.

Then, and then only, not the absolute weapon but the absolute weapons system would have been found. The first side to possess it would have a lever not just capable of lifting the world but of imposing its laws upon it.[4]

An analysis of the line of reasoning followed by the Interavia Study Group reveals that in both the first and second hypotheses an assumption has been made which affects the conclusions, namely, that the IRBM would be fired from land bases. If IRBM's could be launched only from the land, the conclusions

[4] Ibid., p. 412.

would still be valid—that the Soviet Union could not knock out SAC retaliatory capability with intermediate range missiles, whereas the United States could hit targets within the Communist bloc. It has recently been brought out by Under-Secretary of the Navy, Gates, however, that ships for launching IRBM's are now being developed. In a speech delivered on November 16, 1956, Secretary Gates said:

The difficulties of handling modern weapons at sea are being overcome. They are not as complicated as resolving the political problems of maintaining bases in foreign territories or as fraught with the dangers which come from relying on striking power primarily launched from within our own land boundaries.

This is an interesting example of the manner in which a technological advance can affect and alter military planning and political thinking. A sea-launched IRBM has implications for land bases as well as for estimates of an enemy's capability of carrying on a war. If the Soviet Union, with its present naval strength of 400 and more submarines, should develop nuclear submarines equipped with IRBM missiles, the United States would be just as vulnerable as if Russian ICBM's were stockpiled and operational.

Whether defence or retaliatory capability is considered, the development of all types of missiles, and even their eventual substitution for some percentage of the manned bomber force, would seem to emphasize the desirability of retaining the military base structure of the Western alliance as long as possible. Bases represent one way in which the Western Nations present a united front to the Communist bloc. Withdrawal from bases, whether they are in the form of long runways for bombers or consist of the less easily recognized missile ramps, would leave the nations of Western Europe an easy prey to blackmail from a country that has already developed rockets and missiles with nuclear warheads.

One last point may be made in analyzing the implications for foreign policy of guided missiles. They are extremely expensive weapons, and yet they do not solve, nor can they be used in, many international situations which threaten to disrupt the peace. They cannot be used as a tool for fashioning compatible relations in trouble spots such as those of the recent past and present: Cyprus, Algeria, Poland, Hungary and the Suez Canal. Guided missiles are, however, part of the deterrent strategy which seeks to prevent war.

Implications for United States Defence Appropriations

Guided and ballistic missile developments abroad have already affected both the amount of money and the priority that has been given to the United States programme. The special assistant to the Secretary of Defence for guided missiles, E. V. Murphree, has repeatedly warned that—

"The missile developments [programme] is going to cost a lot of money, but it is and will add great potential to the national defence."

The development and operational use of missiles has been given top

priority by the Department of Defence.

Recent Official Statements by the Soviet Union, United States, and United Kingdom

International political developments relating to guided missiles in foreign countries occurred toward the end of March and in early April 1957. Their pertinence to the sections of this report which deal with Great Britain, NATO, Sweden, the USSR, and the implications for United States foreign policy will be readily apparent.

On March 26, 1957, a letter was received by Premier Einar Gerhardsen of Norway from Premier Nikolai A. Bulganin of the Soviet Union. Terming the international situation acute because "new attempts are being made to revive the cold war," Premier Bulganin wrote as follows:

* * * * *

The United States Government has not tried to hide its intention of using its armed forces in the Near East. Plans were made known not long ago for the stationing of American special troops, equipped with atomic weapons, on the territories of a number of states, and primarily on the territory of NATO members, and also we have the NATO decision to equip the West German Army and the armies of certain other members of this military group with atomic weapons.

Of course, such actions cannot but increase the danger of a new war, and that is their intention, for a policy aimed at peaceful co-existence and international relaxation of tension does not satisfy everyone, it would appear . . .

* * * * *

The Soviet Union has no intention of attacking anyone, but obviously, in response to aggressive actions against the Soviet Union, we would be forced to undertake the most energetic measures in order to inflict a destructive blow against the aggressor and also against the bases which are located near our borders.

* * * * *

The originators of these criminal plans still hope apparently that they will be able to keep out of range, thanks to the great distances, and that the whole force of the modern weapons' destructive might would fall on those countries supposed to serve as springboards of the attack against the Soviet Union and other peace-loving countries. But such hopes are groundless today.

The development of military techniques, particularly the rocket technique, means that today on our planet there no longer exists any distance which cannot be covered by the most modern types of weapons.

It is not difficult to imagine to what a dreadful danger Norway is exposing herself by the fact that her territory is utilized by certain big power aggressive circles to set up military bases against the Soviet Union. The destructive power of modern weapons is so great that the blow which would be directed toward destroying the aggressors' bases would inevitably hit much greater areas, which would mean a catastrophe even for countries with a larger territory than Norway. The truth of this appears from the tests made, which show that one hydrogen bomb can produce destruction within a radius of up to several hun-

dred kilometres. One might ask what would happen if several such bombs were used.

[*Emphasis supplied.*]

President Eisenhower commented on recent Soviet threats at his usual news conference on March 27, 1957:

We recognize that any nation in the world has a right to take such measures as it deems necessary for its own security and defence. I think the statements of the Russians are completely indefensible, and while I know of no specific purpose or plan that leads to this particular charge they are making, and their particular threats, as you call them, that they are making, the right of Norway to take any measure it pleases within its country for its own security certainly is clear.

And I might point out that when I went to Europe in 1951, in December 1950, that the same charges and same threats were made at that moment.

On April 4, 1957, a new British defence policy was outlined in a white paper issued by the Minister of Defence, Duncan Sandys. He explained the factors which led to the defence plan, which was characterized as "the biggest change in military policy ever made in normal times."

Need for New Approach

" . . . the time has now come to revise not merely the size but the whole character of the defence plan. The Communist threat remains, but its nature has changed; and it is now evident that, on both military and economic grounds, it is necessary to make a fresh appreciation of the problem and to adopt a new approach towards it.

Scientific Advances

"4. In recent years military technology has been making dramatic strides. New and ever more formidable weapons have been succeeding one another at an increasing rate. In less than a decade, the atom bomb dropped at Hiroshima has been overtaken by the far more powerful hydrogen or megaton bomb. Parallel with this, the evolution of rocket weapons of all kinds, both offensive and defensive, has been proceeding apace.

"5. It has been clear for some time that these scientific advances must fundamentally alter the whole basis of military planning. But it is only now that the future picture is becoming sufficiently clear to enable a comprehensive reshaping of policy to be undertaken with any degree of confidence.

* * * * *

Nuclear Deterrent

"12. It must be frankly recognized that there is at present no means of providing adequate protection for the people of this country against the consequences of an attack with nuclear weapons. Though, in the event of war, the fighter aircraft of the Royal Air Force would unquestionably be able to take a heavy toll of enemy bombers, a proportion would inevitably get through. Even if it were only a dozen, they could with megaton bombs inflict widespread devastation.

"13. This makes it more than ever clear that the overriding consideration in all military planning must be to prevent war rather than to prepare for it.

"14. While comprehensive disarmament remains among the foremost objectives of British foreign policy, it is unhappily true that, pending international agreement, the only existing safeguard against major aggression is the power to threaten retaliation with nuclear weapons.

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Europe and Atlantic

"20. The possession of nuclear air power is not by itself a complete deterrent. The frontiers of the free world, particularly in Europe, must be firmly defended on the ground. For only in this way can it be made clear that aggression will be resisted.

"21. Britain must provide her fair share of the armed forces needed for this purpose. However, she cannot any longer continue to make a disproportionately large contribution.

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Research and Development

"58. If the weapons and equipment of the armed forces are to be kept up to date, an adequate effort on research and development must be continuously maintained. However, in view of the shortage of scientists and technicians in civil industry, it is important to restrict the military programme to those projects which are absolutely essential.

"59. A central feature of the defence plan is the maintenance of an effective deterrent. High priority will therefore continue to be given to the development of British nuclear weapons suitable for delivery by manned bombers and ballistic rockets. Nuclear warheads are also being evolved for defensive guided missiles.

"60. The close co-operation with the United States over research on guided missiles and ballistic rockets, initiated under the agreement of 1953, has proved of mutual benefit to both countries, and will be maintained and further developed. . . .

"61. Having regard to the high performance and potentialities of the *Vulcan* and *Victor* medium bombers and the likely progress of ballistic rockets and missile defence, the Government have decided not to go on with the development of a supersonic manned bomber, which could not be brought into service in much under 10 years.

"62. Work will proceed on the development of a ground-to-air missile defence system, which will in due course replace the manned aircraft of Fighter Command. In view of the good progress already made, the Government have come to the conclusion that the RAF are unlikely to have a requirement for fighter aircraft of types more advanced than the supersonic *P. 1*, and work on such projects will stop."