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CONTENTS

The Ideal of Service . . . . . *Field Marshal Sir John Harding* 5

Bridge Demolitions . . . . . *Major Allan E. Younger* 7

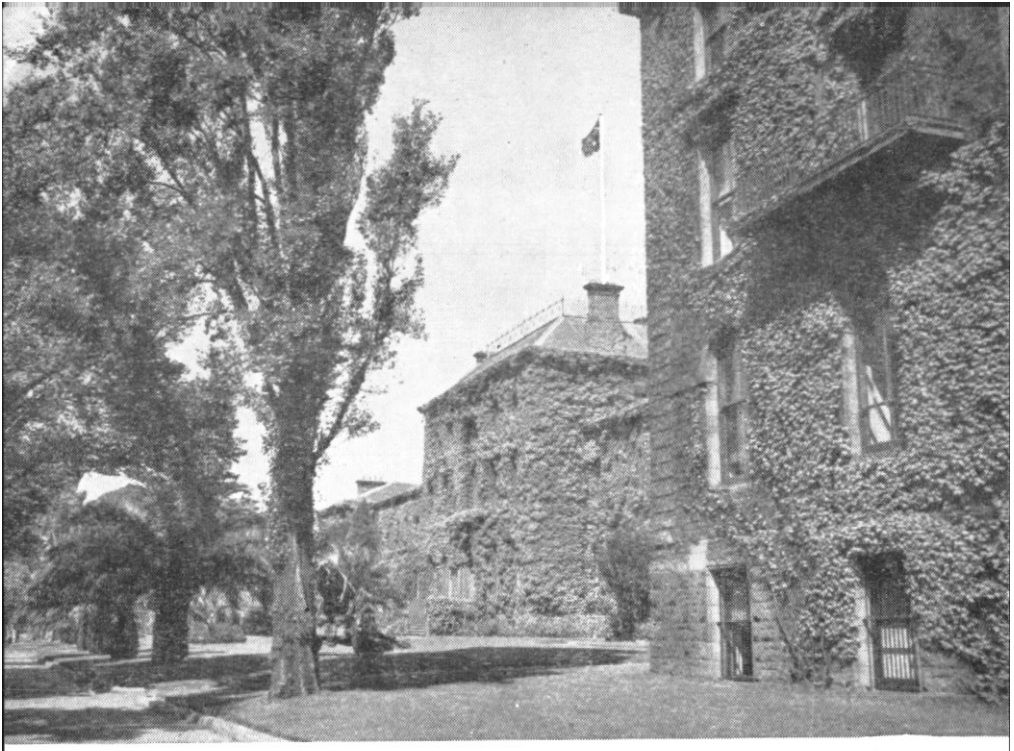
The Operating Principles of Automatic Weapons
Sergeant K. L. Hanrahan 11

The German Armed Forces and Democracy
Major-General Erich Dethlieffsen 19

Successful Methods of Study . . . *AHQ Methods of Instruction Team* 23

Strategic Withdrawals . . . . . *General Guenther Blumentritt* 27

Index to Australian Army Journal, 1953 41



VICTORIA BARRACKS, MELBOURNE.

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The IDEAL OF SERVICE

An Address delivered by Field Marshal Sir John Harding, GCB, CBE, DSO, MC, Chief of the Imperial General Staff, to the Cadets of the Royal Military College, Duntroon.

CORPS of Staff Cadets of the Royal Military College, Duntroon. It is a very great honour and a very great pleasure for me to see you on parade today and I would like to congratulate you all most heartily on your drill, your steadiness on parade, and on your fine soldierly bearing.

Although I have not much time to see a lot of you, it is quite clear to me from the way you stood on parade and the way you answered the questions I asked those of you I spoke to, that the spirit of the Royal Military College is very high indeed, and I congratulate you on the very high standard that you are maintaining.

During my service I have met a number of officers who have been trained here at Duntroon and I know what a very high standard of professional skill, of courage and leadership this establishment produces. I am quite certain that when you go out from here to your various units and Corps you will not only uphold but will enhance that great reputation. You are training to be officers of the armed forces of your respective countries. There is no more important task from a national point of view that any body of men can carry out.

The whole object of our defence effort is to prevent war and be able to defend ourselves in attack. The responsibility that rests on you therefore is very great. When I speak to, or write to, any Cadets from the Royal Military Academy Sandhurst, or from other places, who are going into my own Regiment or to Regiments to which I am Colonel, I always give them three words of advice:

First: Always put your duty first;

before your comfort and convenience, before your own safety, before your own advantage.

Second: Set yourself a high target, go all out in everything you do not only to gain success for yourselves but to play your full part in the life of your units, the armies to which you belong and the country from which you come, and

Finally: Enjoy your soldiering. There will be tedious tasks and you will have heavy responsibilities to carry and difficult decisions to make, but there is a great deal of good, honest, healthy enjoyment to be had out of soldiering. So once again I say to you enjoy your soldiering and let the joy of life and the spirit of youth enter into everything you do.

Not long ago the Duke of Edinburgh was taking a passing out parade at the Royal Air Force College at Cranwell and in his speech he gave three points of advice to the Cadets there, and I would like to pass them on to you as one of my own remarks. What he said was this:

First: Make yourself expert in your own service.

Second: Learn all there is to know about the capabilities and functions of the armed forces of the other two fighting services.

Third: Learn to understand the economy, the way of life and the system of Government of your own country.

If you do those three things you will be efficient officers well worthy of this great establishment, able to do your full duty and to set your duty always first in front of you.

In conclusion, I would like to wish you all a very happy and successful career in your respective armies and in the units and Corps which you will join. I hope that you will always remember the association of your forebears in both world wars with their comrades in the United Kingdom. On behalf of all ranks of all three fighting services of the United Kingdom I would wish you every success in the career that lies before you.

Good luck to you all.

BRIDGE DEMOLITIONS

Major Allan E. Younger,
Royal Engineers

THIS article was prompted by an earlier one entitled "Who Dictates Destruction?" by Lieutenant Colonel Harold J. St. Clair, which appeared in the October, 1952, issue of the "Military Review."

There is one aspect of the German failure at Remagen, however, which Colonel St. Clair did not emphasize. He stated that there had been no prepared demolition plan at the bridge and this surely was the key to failure. It is not with the desire to criticize his article that this has been written but rather to investigate the type of orders that, if given to the Remagen bridge demolition commander, would have ensured destruction of the bridge or at least saved him from execution later!

As Colonel St. Clair correctly stated, we are likely to have to fight a retrograde action in the initial stages of a future war. Men's lives will depend on the thoroughness of their training and the exactitude of their thought before this test comes. Therefore, we must ensure that the complexities and uncertainties of this type of warfare do not result in a "Remagen," by careful and detailed planning and thorough execution of all operations during a retrograde movement.

—From "Military Review," USA.

From a purely engineer viewpoint, the main problem in demolition remains as it always has been, "What shall I do if the enemy arrives on my bridge and I cannot get in touch with the superior officer who is authorized to order me to fire?"

The reason that this question is so difficult to answer is that there are so many variables involved. These are:

1. The circumstances of the appearance of the enemy at the bridge and of their strength.
2. The strength of our own troops cut off on the far bank.
3. The strength of our own troops in close proximity to the bridge.
4. The relative air situation.
5. The time factor, including the efficiency of communications.
6. The importance of the bridge.

To illustrate these, let the reader decide whether he would order the demolition if he were a sergeant faced with this situation and able to blow a bridge but lacking any superior orders.

You are a German sergeant at the Remagen bridge. You have been told that at least three divisions of German troops are on the far bank. Suddenly a group of the enemy, you estimate a platoon, which is about the same strength which is available to you, appears at the

bridge. Will you fire the demolition? Obviously, the answer is no. Alter this situation to an enemy armoured division arriving at a less important bridge, with one battalion of your own on the far bank. Will you fire this time? Obviously, yes.

However, there are many situations between these two extremes where the answer is not so simple and in these instances remember that all the variables have not been included. The problem, therefore, is how to obtain the maximum chance of ensuring success when faced with so many variables and above all with the uncertainties of battle, particularly the lack of information so aptly called "the fog of war."

The Human Element.

Another factor in bridge demolition is often forgotten by staff officers, namely, that of the strain on the engineer responsible for the demolition. It is doubtful whether any other single situation in war imposes such a strain on a junior officer or non-commissioned officer as the demolition of a bridge in the face of the enemy. The reason for this is that no man can ever be completely certain that a large and complicated demolition will be successful. A chance bullet or mortar shell may cut his leads, a well directed bomb is almost certain to. There is always a danger of premature demolition from similar causes, particularly when blasting caps have been inserted. Above all, no one on earth can give him an exact time for blowing, so he must be on the alert continuously. At the back of his mind may loom the potential penalties for failure. The physical relief that he feels if the demolition eventually succeeds is comparable with that felt by the air-borne soldier when his parachute opens. Also it must be borne in mind that no country, however rich, is likely to be able to provide bridges for practice demolitions by newly commissioned officers or by non-commissioned officers.

This all points to the importance of the orders to the engineer firing party being really accurate, comprehensive, and realistic. A junior officer bearing such technical responsibility and subjected to such mental strain must be protected as far as possible from the chance of having to make decisions of great consequence.

Importance of Communications.

If communications are adequate, there is little problem. A liaison officer in good contact with his headquarters can obtain a ruling on any eventuality; however, dare one rely on radio in these circumstances? During the Rhine crossing, the leading wave of LVT's on one sector was about to enter the water when an officer ran up to the commander of the wave: "There has been a slight change of plan," he said, "The artillery will not lift on a time basis, but when you give the code word 'Splash' over the radio."

Seconds later, the wave set off. As it did so, someone chose to send out a signal, successfully jamming the radio net. Helplessly the commander yelled "Splash, I say again, Splash" into his microphone, receiving no reply. Inevitably, the first wave drove into our own barrage.

This example is only introduced as being typical of circumstances all users of radio have experienced. It is suggested that to rely on radio as being the answer is courting

failure by not eliminating one of the variables of the problem. Everything possible must be done so that the commander at the bridge site has no need to fall back on outside advice unless totally unforseen circumstances arise. This indicates a need for written orders at the bridge.

Sequence of Events.

Disregarding any type of demolition not being fired or likely to be fired in the face of the enemy, let us run through a typical set of circumstances to clear the problem in our minds.

A division commander wishes to convert a river into a complete obstacle and withdraw behind it. He, therefore, orders his engineer to prepare the bridges for demolition in advance. The front line may be ten miles beyond the river and the loss of the bridges at this stage is unlikely. If they are lost, say, to an unexpected air-borne attack, the commander will fight to regain them. At this stage, the sensitive blasting caps should not be inserted into the demolition circuits on the bridge for there is little question of destruction. To avoid the chance for error, the engineer at the site should be given written orders not to fire. This will not prevent an officer senior to him from giving him contrary orders, but it does protect him if he insists on a written authority from this senior officer and he will obviously attempt to check with his divisional headquarters first, if it is possible.

If the bridge is important, the division commander normally will send a unit to protect it. The demolition team should be integrated into this unit so that the whole becomes the bridge garrison. The bridge garrison commander, probably an infantry officer, is now the final link between the division commander and the demolition team leader on the site.

What the engineer at the site now requires is a checklist to tell his new commander the technicalities, such as the time required for inserting blasting caps, and to remind him of the extra danger of premature explosion when such caps have been inserted.

At this stage, the engineer also must be quite sure that all his men know how to fire the demolition in an emergency, and also that a seniority roll is prepared so that there will be no confusion if there are casualties. Similarly, the bridge garrison commander must be in close contact with the engineer and must plan to avoid confusion if he becomes a casualty.

Normally, communications can be assumed to operate, and the division commander can always order the destruction of the bridge. Obviously, he needs to appreciate two situations to give this order, namely the situation at the bridge and the wider situation over the entire front. To keep him in touch with events at the bridge site, and to provide him with a quick alternative means of passing the orders to fire, the division commander may station a liaison officer there, in radio contact with him at his command post.

Delegation of Authority.

As the bulk of the covering troops withdraw over the bridge, or as the local tactical situation changes, the firing of the demolition may cease to be a vital divisional problem. At this stage the division commander will frequently delegate authority

to blow the bridge to a brigade commander, who may in turn delegate it lower. This raises no problem except that there must be no doubt in the mind of the commander concerned that he is responsible for the giving of the order. Moreover, the bridge garrison commander must be in no doubt about from whom he will receive his orders. This may be elementary, but it is the very delegation of authority too early or too late that causes failure.

Unforeseen Enemy Action.

The whole difficulty of demolition orders can be summed up in the need for the junior regimental officer to know accurately the "big picture." This is an over-simplification, but it can be seen that if the division commander set up his command post at the bridge site with all the communications at his command, and kept it there until the demolition was complete, there would be little difficulty. There would, however, be a great waste of the division staff in the process.

Therefore, the man at the site must be kept in the picture, in the same way that he is responsible for keeping his superior informed of events occurring near him. If this has been conscientiously done there should be little danger of the wrong decision being taken in an emergency. If the enemy arrives unexpectedly and cuts off the garrison, the senior officer on the spot will take charge. If he knows the outside situation he should have little difficulty in meeting his responsibilities.

One human weakness must always be borne in mind. The jobs of both the bridge garrison commander and the engineer are complete when the bridge is demolished. Furthermore, the sooner it is demolished the greater the chance of a technical success. Therefore, there is an understandable tendency on the part of both parties on the site to interpret events in such a way as to favour early demolition. Here, the presence of the division commander's liaison officer may help to keep events viewed in their right perspective.

Conclusion.

The lesson of history is that where in battle there is uncertainty and a paramount need for determination and clear thinking, success depends, above all, on clear-cut command. There are many instances of demolition failures in battle because of a lack of precise orders.

Most often, in the past, the trouble has arisen through confusion as to the officer empowered to give the order. It is contended, therefore, that the chances of success depend primarily on absolute insistence on a recognized drill which must include:

1. Definite specification in writing by appointment and name of the officer authorized to order demolition.

2. Clear written instructions to the engineer officer or non-commissioned officer leading the demolition team regarding technical aspects of the demolition.

3. The possession by the demolition leader of a checklist to cover the engineer responsibility in various eventualities.

This precision is all the more necessary in modern war in the face of possibilities of attack by air or armour.

The Operating Principles of ...

AUTOMATIC WEAPONS

Sergeant K. L. Hanrahan,
23 Cadet Battalion

THIS article has been prepared not only for general information but also as a study for those desiring a rudimentary knowledge of the principles of operation of automatic weapons.

Most soldiers are acquainted only with the systems of those weapons in current use in the army, viz.: Bren-LMG, Vickers MMG and Owen and Austen Machine Carbines. However, numerous other systems are in use throughout the world and a knowledge of these is desirable if not important; important in that it adds to the soldier's knowledge and desirable inasmuch as it will give him a better understanding of weapons generally.

Automatic weapons cannot be studied as a group because the principles and systems used are too numerous and diverse, therefore, of necessity, they will be dealt with in certain definable categories. These are:

Long recoil
Short recoil
Blow-back
Gas operation.

Some of these divisions can be subdivided and will be so dealt with in the course of this article.

Long Recoil.

The system or principle of long-recoil is not now in general use as it never proved successful. Records disclose that only one weapon based on this principle has been used in recent years. This is the French Chauchat (or Chauchard). Although this weapon was obsolete in World War I the French army still used it in the last war, to the discredit of the French ordnance department. The only other attempts at designing weapons using long-recoil were made by Mannlicher in 1888 and by Mauser a few years later. As nothing satisfactory came from these experiments, the attempts were dropped.

The principle of long-recoil occurs where the barrel and breech-block travel backwords together a distance slightly greater than the total length of the cartridge used. This long movement of the barrel causes extreme vibration with a resulting loss of accuracy. Add to this the fact that the barrel can only be supported adequately at one point, the body, and thus any wear of the contacting parts of the barrel and

the hole in the body through which it projects will cause further fluctuations in firing.

Summary: Principle basically unsound as it causes extreme vibration and wear of moving parts. Continual movement of the barrel upsets the gunner's "sight picture" and makes good holding difficult. Weapon requires strong buffer springs to absorb the shock of backward movement of the heavy parts, thus complicating the design.

Short Recoil.

This section has been subdivided into two parts: (a) Recoil assisted by mechanical devices. This system operates on the backward thrust of the fired case acting against the face of the breech-block. During this backward movement the barrel, barrel extension (if any) and breech-block are firmly locked together during the initial movement and don't separate until the peak of dangerous chamber pressure has dropped to safe limits. Various mechanical devices such as grooves, ramps and levers are used to assist this backward action.

One weapon that uses this principle is the American Browning MMG. When the cartridge is fired it acts backwards against the breech-block which is forced to the rear locked to the barrel extension and barrel. The breech-block unlocks after a safe interval and travels independently of the barrel extension which, striking a rotating lever, causes the backward movement of the block to be accelerated. The barrel extension and barrel are later pushed forward by the returning breech-block which strikes the accelerating lever, and by a barrel return spring. (b) Recoil assisted by gas. This system is a little less complicated than the above as it does not require any special internal system of levers, cams, etc., to accelerate the rearward movement of the block. Weapons using this system are the British Vickers MMG, both the Russian and the German Maxim MMG's and the German MG34(LMG).

When the cartridge is fired, the case reacts against the face of the breach-block, forcing it to the rear whilst locked to the barrel. When the bullet leaves the muzzle the gases following it strike a cone-shaped device that projects forward of the muzzle and rebound on to a cup fixed to the barrel itself. This rebound of gas assists the already moving parts in their move to the rear and facilitates the action of extraction, ejection, etc. (Diagram 1.)

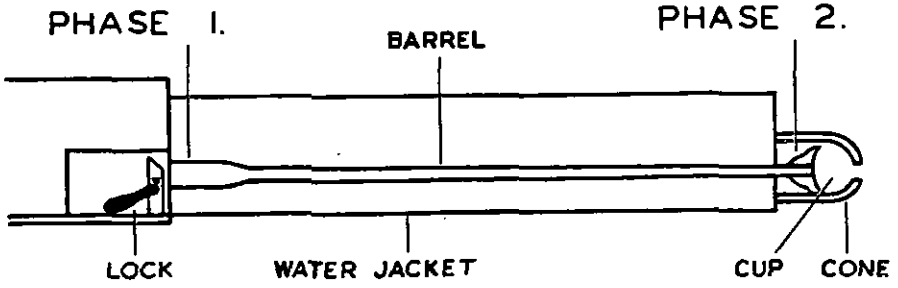

Diagram 1.

Summary: The principle is good but is not readily adaptable to lighter arms, even though the MG34 would appear to contradict this. It is particularly suited to belt-fed weapons as the recoil of the cartridge alone is not generally sufficient to actuate the belt without the addition of levers, as in the Browning MMG.

Blow-back.

This section is subdivided into two parts: (a) Simple blow-back. Weapons using this principle are unlocked at the moment of firing and get their energy from the backward thrust of the fired case on the face of the bolt.

In some of these weapons the firing pin is fixed to or machined from the face of the bolt; in others the firing pin is retractable and must be struck by a pistol-type hammer in order to fire the weapon. The simplest versions of this principle can be seen in such weapons as the British Sten, the Australian Owen and Austen machine carbines, the Finnish Suomi, the Russion PPSH-41, the German Schmeisser, and the Danish Madsen M46, to name but a few.

In all these weapons the weight of the breech-block (or bolt) plus the unexpended energy of the return spring, is sufficient to keep the breech closed until the dangerous pressure in the chamber has dropped. Understandably, then, this principle of an unlocked breech is usable only in short-barreled weapons firing low pressure (pistol-type) cartridges. The limitations of this system are evident when it is realized that to use a modern military rifle with a straight blow-back bolt would require a bolt weighing about 28 lb.!

(b) Delayed blow-back. The system of operation of delayed blow-back weapons is basically the same as for the above with the exception that various devices are used to delay the opening of the breech. This eliminates some of the limitations of the simple system so that longer barrels, more powerful cartridges, or both, can be used. This results in greater accuracy, longer range and greater penetrating power of the bullet.

Some of the weapons designed to utilise this principle are: the Austrian Schwarzlose MMG, the Italian Breda LMG and Revelli and Fiat MMG's, the German Neuhausen MP, the American Thompson SMG, and the German Luger pistol.

There are some slight differences in each of the Italian weapons, but the principle of operation of each is basically that of the Revelli MMG. This gun uses a mixture of short-recoil and blow-back. When the cartridge explodes it forces the case against the face of the breech-block, which, locked to the barrel, moves to the rear. The wedge that locks the two together is then disconnected, thus allowing the breech-block to move by itself. A separate spring moves the barrel forward to await the return of the breech-block under compulsion from its return spring.

The Austrian Schwarzlose has proved very popular in many European countries, being used at various times by the Austrian army, some units of the German army, by Holland, Czechoslovakia, Hungary, Sweden and Italy.

It depends for its operation upon blow-back delayed by toggle levers

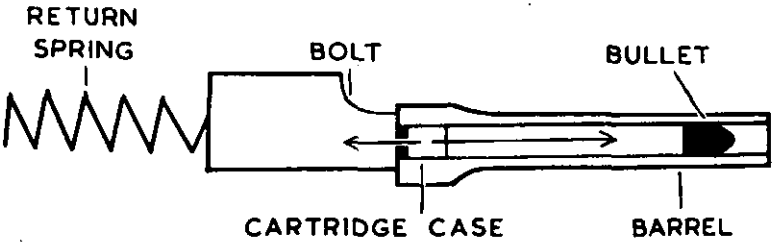

Diagram 2.

and the inertia of the breech-block supplemented by a very powerful return spring. As the cartridge explodes the case is forced back against the face of the breech-block which is delayed for a fraction of a second by the resistance of the levers. As this resistance is overcome the breech-block is further delayed by the presstre of the strong return spring. By this time the peak of dangerous chamber pressure has dropped to safe limits and the normal actions of ejection, cocking, feeding, etc., are carried out.

Two simpler versions of the delayed blow-back are the Thompson SMG and the Luger Pistol. In the former delay in fully opening the breech is caused by the friction of an H-piece moving upwards in inclined grooves. However, the 1929 edition of the British Text Book of Small Arms pointed out that this H-piece was entirely unnecessary; when removed from the gun, no difference in operation was noticeable. Yet it was so intricately machined and fitted that it added materially to the cost of the gun and detracted from its mechanical efficiency.

The latter weapon uses the system of toggle levers unlocked by a ramp at the rear of the bolt slide. The initial pressure of the fired case causes the barrel and bolt to move together to the rear, where the ramp contacts the under side of the toggle levers, thus forcing them up. The bolt is now separated from the barrel and continues to the rear.

In the Neuhausen MP the bolt-head moves separately from the bolt-body. The fired case thrusts the bolt-head back a short distance until it is stopped by a shoulder in the body of the gun. This initial energy is imparted also to the bolt-body which now moves back, unlocks the head and carries it with it to the rear. (For all this section see Diagram 2.)

Summary: This principle of using the backward thrust of the fired case on an unlocked breech is usable in its simple form only in short-barreled weapons firing low-pressure cartridges. To use a longer barrel or a more powerful cartridge (as in the Schwarzlose) it is necessary to use a delaying mechanism so that the breech does not fully open until the chamber pressure has dropped to safe limits.

Gas Operation.

By far the greatest number of machine guns and semi-automatic

rifles use this system in one form or another.

Over the years it has proved amazingly efficient and lends itself readily to the design of lighter type weapons as distinct from MMG's.

There are two distinct variations of the gas principle, and these will be described singly.. It will be seen that this principle of gas operation, although used in different ways, is the same in both cases, the only difference being that they each allow variations in design of the weapons concerned.

Under Barrel—Long Stroke.

This type is the more common, being used in the Bren LMG, the Browning Automatic Rifle, the Garand semi-auto. rifle, the Mexican Mondragen semi-auto. rifle, . etc. This type is rather well known, depending for its operation upon the divergence of gas into a cylinder underneath the barrel. This gas strikes the head of a piston which is driven to the rear to operate the gun. (Diagram 3.)

Under Barrel—Short Stroke.

This is a modification of the above, having been developed during the last war. The principle is the same but the system differs with consequent variations in design. This short-stroke system is really an advance in the field of gas operated weapons.

For many years ordnance experts worked on the concept that gas operates on a piston with a steadily mounting pressure and that the greater space in which the gas has to expand, the greater is the pressure developed. Subsequent research disclosed that this idea was largely wrong; instead, gas strikes a piston with a heavy, hammer-like blow, after which the pressure begins to drop.

This new idea has been utilised in the German FG42 and the American Carbine M1. The operation of the gun is exactly the same as in the long-stroke in that a gas cylinder and piston are used. However, instead of a conventional piston this system uses a small movable head that operates a tappet rod, which in turn moves the working parts to the rear. Also, instead of a long stroke from the piston, the movable head travels only about a ¼ inch and then stops, having imparted its energy to the tappet rod.

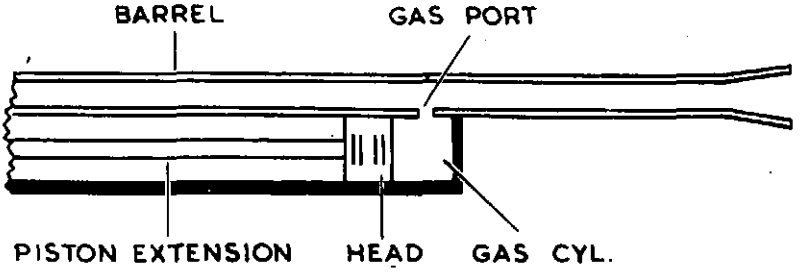

Diagram 3.

Over Barrel

In the early 1930's Diedonne Saive, of the Belgian Fabrique Nationale d'Armes de Guerre conceived the idea of building a gun with the gas cylinder mounted on top of the barrel. This idea would permit a weapon to be used with the magazine being attached from underneath in the normal way, but without complicating either the design or the functioning of the weapon by having the return rod bent around the magazine, as in the Garand rifle. Further, it permitted the use of a straight butt-stock which eliminates the upward movement of the muzzle (commonly called "jump") when the cartridge explodes. This movement is caused by the weight distribution of the weapon and the angle of the butt to the line of the bore. Where the butt is in a direct line with the barrel the recoil acts directly backwards into the firer's shoulder. In the conventional type rifle the angle of the butt to the body of the weapon acts as a fulcrum, thus causing the muzzle to "jump" upwards.

Long Stroke—Saive System.

One weapon using this principle is the Russian Tokarev 40 semi-auto. rifle. In this weapon the gas escapes through a hole in the top of the barrel, where it strikes the head of a piston, driving it to the rear. The piston moves backwards for about 1½ inches, then stops, whilst the bolt continues to carry out the actions of ejection, etc.

Short Stroke—Saive System.

As already stated, the Germans developed a weapon on this principle in 1943. This is the Kar.43 (originally called the Gewehr 43). This weapon can be regarded as an improvement on both the Russian Siminov and Tokarev models. The action is the same as for the above, but using the short-stroke system which does not need the conventional gas cylinder and piston. (Diagram 4.)

Summary: The Saive System is readily adaptable to lighter type weapons and could also prove successful in medium and heavy machine guns. If used on the short-stroke system it eliminates the gas cylinder and piston as used in the under-barrel systems. Particularly suitable for weapons with the magazine mounted from underneath. The German idea of the short-stroke allows for radical ideas in both design and production.

Miscellaneous.

This section has been added to deal with the few remaining types of principles of operation not covered in the body of the article. Further, these principles have all been used some time or other in various military arms and can therefore be treated within the scope of this work.

Primer Set-Back.

This is the blow-back system confined to the cap or primer of the cartridge case. (Diagram 5.) When the cartridge explodes the unsupported cap moves back into a recess machined into the face of the bolt. This movement is transmitted to a rod or tappet which in turn operates the weapon for unlocking, extraction, etc.

Summary: This system has never proved popular due to the small discharge of energy transmitted by the cap. Notwithstanding, it was

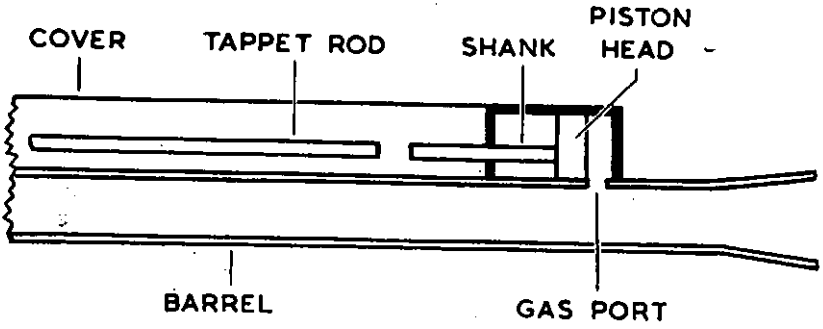

Diagram 4.

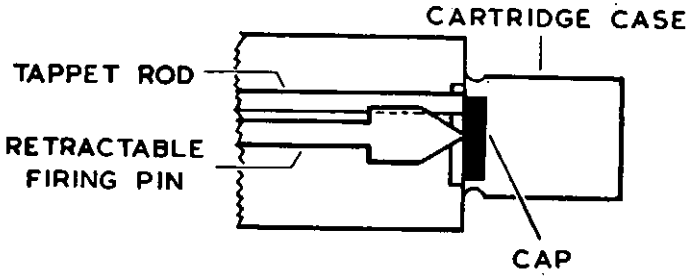

Diagram 5.

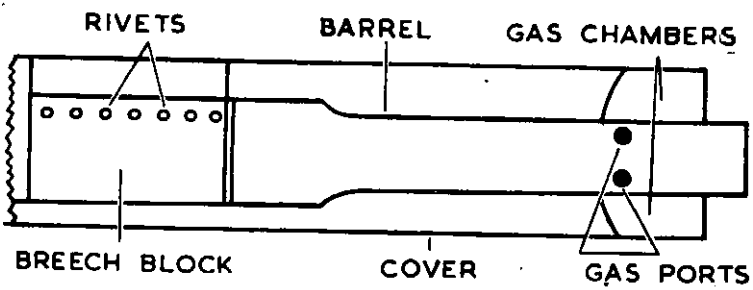

Diagram 6.

used on some early models of the American Garand rifle, but was discontinued in favour of the more reliable long-stroke gas system.

Haenal System.

The only weapon using this astonishing system is the Volksturm Geschuss, developed by Haenal of Suhl, Germany, in 1942. It did not appear on the battlefield until 1945. In this weapon the backward action is delayed blowback. As the cartridge explodes the case acts backwards on to the face of the bolt. The bolt is prevented from opening by gas which escapes through four holes drilled radially through the barrel about 2½ inches from the muzzle. This gas expands into a moveable housing to which is riveted the bolt. This forward expansion of gas delays the opening of the breech, thus permitting a powerful cartridge to be used. (Diagram 6.)

Summary.—This principle is open to further development, particularly with regard to light weapons made from metal stampings. The forward action of the gas is strong enough to permit a rifle-type cartridge being used.

We live in an age of fabulous scientific progress, but science has invented no substitute for morale and the fighting spirit which are still necessary for victory in battle; nor is there any substitute for dedicated and highly competent officer leadership.

—*Admiral Robert B. Carney, U.S.A.*

The German Armed Forces
. . . AND DEMOCRACY

Translated and condensed by the Military Review, USA, From an article by Erich Dethleffsen (Major-General in the former German Army) in "Wehrkunde" (Western Germany).

MOST of the people of Western Germany are convinced that within the foreseeable future German formations will be joining the forces of the West in a defence against Communism. In view of this, there is a great deal of anxiety and discussion concerning the structure of the future forces. Some fear that the military forces will follow the lines of the former regime; others fear that excessive democratization will reduce their military value.

Most of the fears can be attributed to (1) the memory of the Weimar Republic and the old *Reichswehr*, (2) the memory of the Nazi-dominated *Wehrmacht* and the resultant perversion of the military, (3) the widespread disillusionment of the people, who had expected more from the former armed forces, (4) the memory of the retrograde development of human relations within the armed forces.

It must also be realized that there exists—both in the minds of former soldiers as well as in the mind of the nation as a whole—"restorational" tendencies which have found expression in the following denunciatory statements:

1. "We could have won the war if Hitler had not . . ."

2. "We could have won the war if the generals had really wanted to."

3. "German military morale was untouched and unshaken when the war ended. It was broken only by the defamation of the postwar period and the *re-education.*"

One overlooks the fact, and forgets, that the worm was already gnawing at the inner structure of the old *Wehrmacht.* The old concepts of moral responsibility, which under certain circumstances must have precedence over obedience, yielded to transitory pressures. In the place of freedom of action and independent initiative in the individual, an over-centralization made its appearance. The commander was no longer fully conscious of his political responsibility toward his nation. This, however, is not the place for fixing the blame. This development was mostly the result of the change in the social position of the officer and the influence of materialism. It should also be em-

phasized that the development was not typical of the military alone, but embraced all persons of our nation who were called upon to lead. That does not, however, alter the fact that it existed, and that from it we must draw our conclusions.

We Must Build Anew.

There is an increasing number of former soldiers who are ready to acknowledge the errors that were committed, to learn from them, and to recognize that not everything in the old *Wehrmacht* was good. They also acknowledge the fact that we must build not *again*, but *anew*; that this building must not be on the old, but on a new, foundation. However, in the rebuilding, all the good stones from the old house must be used again; that is, those which have proved their worth and have been retained.

What Is Required?

However, even among those who know that we must build anew, it is frequently not recognized just what is required. They attack the problem from a false angle. They believe that democracy can be established within the armed forces by reducing the acts indicative of respect.

If one confines himself to outward matters of this type (I might say, to concessions to the *vox populi*), he might conceivably make military service more attractive to our young men, but he will not contribute anything to the spiritual foundation of the armed forces. If the relaxing of discipline is overdone, there is no question but that we will risk lowering the combat value of our forces. Any concept that a combination democratic-military spirit can guarantee military victories just as certainly as an army whose structure is based on obedience is false. In other words, an army is not democratic by virtue of a democratic organization, but only when:

1. Its officer corps stands firmly on the democratic foundation and is ready to fight for it.

2. Human virtues—freedom and dignity of the individual soldier—are protected.

3. The armed forces are not suspended in a vacuum, but draw their strength and morale from the fact that they consider themselves to be that part of the nation which is serving with arms.

Conditions Have Changed.

We must bear in mind that the inner structure of the old *Wehrmacht* no longer exists. The inner impelling forces which formerly persuaded our youth to become soldiers no longer exist. The ties which bound youth to the state have been destroyed. The youth of today are dispassionate, open minded only to rational considerations. The youth of today see, as a result of the sacrificial spirit of their fathers and brothers, two lost ware and two periods of inflation. The youth of today lack the ability and the readiness to serve the state. They will come to the training centres embittered and resigned, with only this one question on their lips: "Why?" If the officer is unable to answer this question convincingly, the armed forces will lack the strength that comes from conviction.

Capable Leaders Required.

It is necessary, therefore, to prepare the officer so that he will be

able to present to his soldiers the meaning and purpose of their service, and in such a manner that the soldier will know what is expected of him and why it is expected.

This will be possible only when the officer himself possesses the ability to analyze the task confronting the soldier, in the light of recent history and the realities of the present.

This task consists of taking an active part in the development of the nation and the individual citizen, and, at the same time, protecting the freedom and dignity of the individual. Only when the individual understands his responsibilities to a free nation can the proper spiritual foundation be provided for our military forces.

It will be the responsibility of the future military leader to direct the soldiers' attention to the new phenomena and developments of human society. In addition to tactical and technical knowledge, the future officer must possess the qualities of a leader and a sense of political responsibility. These latter qualities must be given first consideration during the years which are decisive for the future structure of the armed forces.

Possible Dangers.

Three possible dangers must now be considered:

1. If there is a failure to orient the soldier as to his responsibilities as a citizen of the state, then there might be a false evaluation of military matters. This, in turn, could lead to militarism.

2. The training of the soldier (both military and civic training) will be placed largely in the hands of the military leaders. This could lead to an over-estimation of the position of the soldier within the social community and could extend his influence beyond the bounds of his mission.

3. If the integration of Europe does not keep pace with the growth of the German military power, there exists the danger that the desire for national autonomy and independence—in the sense of a "third power" between the East and the West—may be nourished among the soldiers themselves.

The more thorough the political and civic training of the future soldier, the more the dangers listed above will lose their meaning. Therefore, it is of vital importance that:

1. The selection of future officers be made with care, taking into account the extent of their political training.

2. In the creation of the first cadres, political and civic training should be provided as the main branch of instruction.

Three Missions.

The training of the future soldier must embrace three important missions or objectives: the soldier as a *man*, the soldier as a *citizen*, and the soldier as a *fighter*. Because these three missions overlap it may be well to summarize each of them briefly:

1. The education of the soldier as a man must consider the individual (regardless of his grade) simply as a man; must discuss civic accomplishments and evaluate them; must avoid all conceit resulting from rank; must listen to the man; must guard him against encroachments

of his rights; must provide equal disciplinary punishment for all soldiers; and must cause the man to grasp the true meaning of community, subordination, and responsibility.

2. The education of the soldier as a citizen must provide a complete understanding of the place of military service within the over-all plan of things, and not let it become an aim in itself.

3. The education of the soldier as a fighter must stress the concept of "combat training" and reduce or eliminate all unnecessary drill-field training. At the same time, criticism must not be made against the old training methods. They were certainly the correct methods of their day. They were based on the idea that a large number of individuals were to be forced to act collectively, while the problem today is to lead the man back from collective to individual action. The change in man, in his environment, in the structure of society, and in the political situation, compel us to adopt a new course.

It will be chiefly a problem of awakening and furthering those qualities of Western man which make him superior to the man of the East. These are self-confidence, willingness to assume responsibility, and initiative.

A Change in Attitude.

There must, of course, be insistence on the binding power of the command and on obedience in general. Personal conviction, plus confidence in one's officers, will be the foundation of obedience. It seems proper (in contrast with a concept prevalent in the past) to tell the soldier the reasons for the commands during the training period.

This will strengthen the feeling of confidence in the man and of the correctness of the command given. The man, in reply to a respectful inquiry as to why a certain thing is commanded, should never be told: "That is none of your affairs. For you a command is a command."

Training activities will make more demands on the future officer than was formerly the case. We must count on constant difficulties and disillusionments. However, these must not turn us from our purpose.

The important thing to remember is that we will succeed in our task only when the armed forces do not lead an isolated existence, when the whole nation stands behind them, and when both the nation and the soldier feel themselves to be one.

Successful Methods of Study

AHQ Methods of Instruction Team

IN peace and war a very large proportion of almost every officer's and non-commissioned officer's time is devoted to instruction in one form or another. He is either being instructed, instructing someone, or engaged in unassisted study.

Learning is as much an art, or a science, as instructing. Everyone will readily agree that to get the best results an instructor must thoroughly organize his activities. No so many are aware that, again to get the best results, it is equally necessary for the student to organize his time and methods. Since time for study is always short, it is important that none of it should be wasted in unorganized effort. These brief notes have been prepared with a view to assisting students to adopt a systematic method of study calculated to make the best use of the time available.

The Study Plan.

Plan your work on the following lines:

(a) Compile a sample record, for a typical week, of the amount of study you can afford for each of your subjects.

(b) Plan a weekly schedule based on what you have learned from your sample record.

(c) Adapt the study periods to the kind of material being studied, i.e., difficult subjects when at your freshest; different subjects following each other.

(d) Plan to have a study period on the same day of a period of instruction.

(e) Change the schedule when necessary and construct it so that it is within your capacity.

Taking Notes.

Probably more time is wasted in taking notes than in any other student activity. This is not because taking notes is unnecessary; on the contrary, organized note taking is a very valuable aid to study. Haphazard note taking is not likely to help anyone much, but notes taken and used in a planned and methodical manner can be of very great assistance. Experience suggests that the following method produces good results:

From Lecture

(a) Prepare as far as possible for work ahead.

(b) Take *brief* notes in your own words on loose leaf sheets.

(c) *Organize your notes*
  (i) Tabulate,
  (ii) Label — use headings and subheadings
  (iii) Indent sub paras.

(d) Leavè spaces for material missed.

(e) Watch for lecturer's cues for headings.

(f) Review notes as soon as possible after lecture.

(g) Arrange notes in proper sequence, put in folder with all material on any one subject grouped together.

From a Book.

(a) Underline (in your *own* book only) but don't overdo it—otherwise on loose sheets of paper.

(b) Use your *own* words.

(c) Organise your notes.

(d) Treat work a chapter at a time.

Reading.

The amount of reading a student has to do in a limited time is often *rather frightening.* Here again, a methodical approach and a little practice will go far towards reducing the task to manageable proportions. The speed with which you can read and absorb written material depends on the difficulty of the material, your familiarity with the vocabulary of the material, and the purpose for which you read.

Some people are naturally able to read and absorb faster than others. However, the average student will get along just as well by adopting different speeds for different tasks, broadly on the following lines:

Skimming.

To make a general survey of a book before deciding whether it is suitable for your purpose. Speed, 800 to 1000 words a minute.

Rapid Reading.

To obtain main points, reading familiar material, or to find answers to a specific problem. Speed, 500 to 600 words a minute.

Normal Reading.

Slowed down for the sake of thoroughness to obtain a fairly complete understanding of material, to make an outline, or to collect material for a specific purpose. Speed, 200 to 400 words a minute.

Heavy Reading.

To evaluate or criticize what is read, read difficult or unfamiliar material, or discover a method of solving a problem. Speed, four to *six pages an hour.*

Speed.

Increase your speed of reading by efforts to:

(a) Eliminate word pronunciation or lip movements.

(b) Increase word span, i.e., reduce eye movements in the one line.

(c) Look for central thought or idea in each paragraph or section.

(d) Avoid pause over obscure sentences — this will probably clarify later.

(e) Force yourself to speed up and at times check rate.

(f) Ask yourself questions on a paragraph or section.

(g) Use every aid possible to increase understanding, e.g., *Table of contents, section* headings, foreword and preface.

(h) Note down any unfamiliar words for later checking.

(j) *Avoid tendency to skip over* tables, drawings, maps.

(k) Evaluate what you read.

(l) Think over a chapter, read-ask yourself questions and talk freely over what you read.

Remembering.

Adherence to the following method leads to more efficient retention:

(a) Start with an accurate understanding of the material to be remembered.

(b) Follow reading by recall rather than re-reading.

(c) Associate related ideas.

(d) Memorize word for word or letter by letter applicable material such as:
Formulae, laws, dates, names.

(e) Understanding should always precede learning even by rote.

(f) Memorize speeches, poems, plays, etc., by repeating the whole selection from beginning to end until the general pattern becomes clear. Then proceed on difficult parts.

(g) Use short practice periods.

(h) Recall what you have learned.

(j) Distinguish between recall and recognition.

(k) Overlearn by practice and recall occasionally by increasing intervals of time to establish permanency.

An effective method of learning from a text book or a set of lecture notes is what is called the "Survey Q 3 R Method." This method may be summarized thus:

1. Survey.

Take a quick glance through the whole of the chapter or section to be studied, look at the introduction, the major headings and any summary. This gives you a bird's eye view of the task and helps you to organize your attack. No more than a few minutes should be spent on this survey.

2. Question.

Turn the headings of each section into a question. Doing this forces you to make a conscious effort to get the object of the section. If no headings are provided by the author, skim rapidly through each meaningful section and provide your own questions in this way.

3. R.

(a) **Read.** Make an active search for the answer to the question you have just asked yourself; this compels you to read analytically and carefully. Do your own thinking on the question, at the same time try to evaluate the author's statement.

(b) **Recite.** At the end of each meaningful section, recite to yourself both the question and the answer you have found. If possible, jot down from memory a "working notes" outline in your own words. The tendency in regarding text-books is to keep going, as in reading fiction; but by pausing at the end of each section in the way suggested, you will get an opportunity to make sure you have understood the material to date, to help to fix it in your mind and—if you have made your own brief notes—to make later revision easier and quicker.

(c) **Review.** Repeat the Question, Read, Recite stages until you have come to the end of your chapter or section; then review rapidly the whole of it, checking the headings and your own notes, and make one further

attempt at recitation. Review again at frequent intervals.

This "Survey Q 3 R" technique has been found useful not only in studying text books written in prose form, but also where diagrams are involved. It is much more effective than reading and re-reading a chapter five or six times.

You will need to give the method a fair trial, making modifications to suit your particular course of study, even though such a technique might appear time consuming and cause a feeling of awkwardness at first. You will soon gain a sense of achievement and discern noticeable improvements in what you are able to remember.

Concentration.

Concentration is one of those things which sound so simple and which, in practice, are not always easy to achieve. Concentration means that you are able to control and direct your attention to the task in hand. Your efforts to achieve this will be facilitated if you:

(a) Avoid distraction.
(b) Establish habits which will help you to attend to the task in hand.
(c) Establish favourable conditions for study.
(d) Keep physically fit.

Finally, before beginning any course of study:

Examine the syllabus relating to a subject and make a master outline of its topics to aid in the study plan.

When wolves are about the shepherd must guard his flock even if he does not himself care for mutton.

—*Winston Churchill.*

STRATEGIC WITHDRAWALS

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SMALL - SCALE withdrawals during a battle or an engagement are tactical means of combat which every skilled, independently acting officer is permitted to employ, provided he reports them to his superior.

This article will deal with strategic withdrawals—not those which are forced by the enemy—but those which are carried out on free, sovereign will, with the object of disengaging from the enemy in an unfavourable situation, to regain freedom of movement, and to initiate a completely new operation under better conditions.

Great military men under such circumstances give the order to withdraw without any prejudice, just as they would order an attack or a defence. It shows a great, liberal spirit to break off voluntarily a battle of annihilation which has lost all prospects of success in order to disengage from the enemy and then withdraw to commence a new operation under more favourable conditions. It does not denote *spirit* to let one's troops be butchered in a hopeless battle and thus give up all chance of victory.

Modern warfare makes this type of battle especially necessary.

The larger the available strategic area, the larger the strategic withdrawal may become; the smaller the area, the more the withdrawal will assume tactical size.

Up until 1914, the old German fundamental principle of leadership was "When withdrawing, withdraw quickly and far."

It was considered that only this procedure permitted a strategic disengagement to be effected and freedom of movement to be regained. From the point of view of morale, a voluntary withdrawal of this type will have no effect upon a psychologically strong army. Quite the contrary, the army senses that it has the right kind of commander and feels that it is being led by a great military leader.

World War I.

During World War I, there was no dictatorship and no pressure

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—From "Military Review," U.S.A.

upon the military leaders. The Kaiser did not interfere with the military conduct of the war—the German command was given free rein.

In 1914, as an infantry lieutenant, I took part in the great strategic withdrawal from the Vistula and the subsequent renewed, rapid counter-offensive on Lodz. Our troops never doubted for a moment that Hindenburg knew what he was doing, and that the withdrawal (involving long marches) was indeed necessary. Admittedly, the troops must have confidence in their leaders.

In October, 1914, the campaign in Poland had taken a strategically unfavourable turn. The entire Austro-Hungarian Army had been driven back into western Galicia and the Carpathian slopes, with heavy casualties, by Russian forces.

The German Ninth Army also had been forced into a difficult situation. Against this army—consisting of the XI, XVII, and XX Corps, a reserve guard corps, and a few cavalry divisions—the Russians had begun a large-scale, strategic encirclement from the north. The Russians had about five divisions for each German division.

The numerically superior Russians advanced from the area west of Warsaw and attacked the northern flank. Other forces advanced from Deblin.

Had the engagement not been broken off, and a new one initiated, the German Ninth Army would have been encircled and the road to the German border would have been open. Adherence to our positions would have increased the danger day by day, and, therefore, Hindenburg and Ludendorff made a far-sighted strategic decision. Rear guards were detailed to delay the enemy, while the bulk of the Ninth Army was withdrawn westward, by tremendous marches, behind the German 1914 frontier. The Ninth Army was then transferred, without rest or relaxation, on German territory, by train and on foot, to the north. There, it was once again committed, broadly wheeling toward the east, so as to strike south from the line Konin—Kolo—Kutno—Lowicz. This led it deep into the flank of the Russian forces which had advanced slowly as far as the Warta River. This withdrawal, transfer, and wheeling thrust had proceeded so rapidly that the Russians were able to recognize the danger which threatened *them* only after the new attack from the north was launched. Thus, the battle of Lodz was initiated.

This strategic withdrawal may well be regarded as one of the most masterful examples of leadership and assumption of responsibility in modern military history, and a record performance for the troops that carried it out.

The German withdrawal to the Aisne reflected the lack of strategic thinking on the part of the Germans after the Marne withdrawal and was not so voluntary or organized as the one in the East. The withdrawal was hesitant. Consequently, there was never any actual disengagement from the enemy. Behind the Aisne we dug in and attempted to outflank the Anglo-French front tactically with single corps approaching from the north—which we never succeeded in doing, and which gradually extended the

front lines of both sides in the "Race to the Sea." Position warfare had been born, and strategic mobility was dead.

The German forces should have made a quick strategic withdrawal, right up to the Maas, and then launched a counter-offensive from the south with all available forces. On the Western front, with its excellent system of roads and railroads, this could have been accomplished more easily than in pathless Poland.

After 1915 a free strategy was no longer possible because of the stagnated fronts. Admittedly, during the course of the war, withdrawals were carried out repeatedly by friend and foe alike, but these were either purely tactical, or they were involuntary, and out of these no decisive counter-offensives were started with any success.

World War II.

During the Polish campaign of 1939 there were no strategic withdrawals. Strategic withdrawals were unnecessary for the Germans; the Polish withdrawals were forced upon them and, therefore, were not strategic.

During the campaign in the West in 1940, there were no strategic withdrawals because the French withdrawal was made under pressure. In 1944, the German High Command was *forced* to effect a withdrawal because of the invasion in the West.

British in North Africa.

The withdrawal of the British forces in North Africa in the second half of 1942, I regard as a conscious, voluntary one. The British withdrawal in the first half may have been enforced by Field Marshal Rommel, but I believe that thereafter the British Command put a stop to the pressure from the west along the coast, by a withdrawal which was executed according to plan. The British withdrew a long way—right up to the western border of Egypt. Thus, they returned to their base—their power source in Egypt.

Rommel, on the other hand, necessarily became weaker and weaker, in proportion to the length and complexity of his supply lines. It was the British Navy and the British Royal Air Force who were masters of the Mediterranean, and not the German-Italian combination. Their supply of fuel, ammunition, and logistical support became more and more scanty and the *Luftwaffe* weaker and weaker. In 1942, the German forces in North Africa also began to lose their impetus. However, under the unaccustomed circumstances and conditions which they faced in Africa, their performance was certainly very high.

In 1944, Marshal Rommel often related to me how seriously he had pointed out the difficulties regarding manpower and material resources, his missing supplies, his weakening allies, and the delicate inter-relations of power and authority at the *Fuhrer's* headquarters.

Field Marshall Montgomery's planned counter-offensive, therefore, anticipated the successful meeting of fresh, rested British troops with a weakened German enemy which had advanced too far.

So far as I am able to judge, therefore, I would term the British plan a sure co-ordination of a

strategic withdrawal followed by a voluntary counter-offensive. That the strategic move did not become a matter of large-scale outflanking movements, but only of small tactical ones in the south, through the desert, is a consequence of the peculiarities of the North African terrain and of the lines of communications, which in theatres of operations outside of Europe always played a decisive part.

The Eastern Front.

Of much greater interest is the "strategic, voluntary withdrawal" on the German Eastern front during 1941-45. There was, unfortunately, no scarcity of room for the operations. Whether a voluntary withdrawal on this front should take in 50 or 300 miles was not a problem of importance.

It cannot be said that the Soviet retreat far eastward in 1941 was similar to their voluntary one of 1812. On the Soviet side of the border they had had very strong forces for many months before the Eastern campaign ever started—much stronger forces than the few German divisions which were stationed on and to the west of the Bug River. Particularly in Galicia, the Soviet divisions were stationed close together—one behind the other —from Przemysl right up to Lemberg.

The great and heavy frontier battles of Army Group South, the tenacious resistance of the pockets encircled by Army Group Centre, and the battles of Army Group North prove that the Soviet Command did not in 1941 withdraw voluntarily with large-scale strategic objectives in mind.

Especially on, and later east of, the Dnepr the Soviets fought gallantly and tenaciously to the last man.

If they had had any intention of letting us go farther and farther toward the east, and then—as with Napoleon in 1812—attacking us with an unbeaten force, they would not have sacrificed a million casualties in the pockets of Kiev, Smolensk, and Vyasma.

Captured Soviet generals told us in Smolensk that it had been Marshal Stalin himself who had given moral support to his already discouraged generals. It was at that time that the dictatorial order to hold out to the last man was first made. This certainly indicates that the Soviets had not decided to embark on a strategic withdrawal in 1941. On the contrary, they tried their best not to retreat any farther.

After the gigantic pocket of Vyasma had been cleared in front of Army Group Centre, there remained only local resistance between our troops and Moscow. Only on the Nara—about 17 miles west of Moscow—did the Fourth Army encounter coherent positions. All despatches from Moscow in early November revealed great unrest, including evacuations of the city by some of the diplomats and departments of the Government.

Once again, however, the German Army was over-strained. The enormous hardships encountered from the Bug to the gates of Moscow; the long weeks of bitter fighting with a tough, insensible enemy; and the mud—from mid-October on —had played havoc with our troops.

Once again we had to pause for breath just short of the objective.

Our pause—caused by the mud—was well used by the Soviets to dig in, in a semi-circle west of Moscow; to shift about 100 divisions (beside the home guard) from other parts of the front and elsewhere.

This performance is remarkable, and could have been effected only by a dictatorship, and even then only by *levee en masse*.

The mighty counter-attack which was initiated in December, 1941, from the Moscow region, was not a planned one. It was not a follow-up on a long, previously planned withdrawal. It merely arose from immediate necessities. It succeeded in its task, which was to save Moscow, and was thus a historic accomplishment for the Soviets. It constituted a serious threat to us during the famous winter of 1941-42, but it did not defeat us and, therefore, had no strategic success. The total result of the murderous winter battles was that at their end, in January, 1942, the new German line ran along the Ugra. That was not remarkable in view of the events and considering that 100 Soviet divisions had been committed against 30 tired German divisions.

In 1941, the Commander in Chief of the German Army, Field Marshal Walter von Brauchitsch, was dismissed and the *Fuhrer* appointed himself as Supreme Commander. From then on all "free" strategy was dead. The *Fuhrer's* fundamental principle was "to remain, at all costs, on ground which has once been won."

Now the picture changed upon the German maps. Pockets could now be seen forming on the German side (as had occurred previously on the Soviet side). The results were heavy losses in men and materials. The Soviets could have afforded these losses but we could not. Everything had to be "held," including bridgeheads which had no tactical value and areas of no strategic importance. This led to intolerable losses. The German High Command did not fail in 1941-42, it was simply not allowed to plan its strategy; it had to "stay put" in quite impossible positions.

In 1914-18 we would have acted differently in a similarly confused situation; we would have reacted strategically, in a more mobile way. The huge spaces of the Eastern theatre would have permitted the most daring operations at a relatively small risk. We could have taken advantage of our great mobility—far superior to that of the Soviets. Our troops would have grasped the point immediately, and having confidence in their leaders they would have taken an unexpected turn for our troops never did lose the feeling of tactical superiority over the Soviets.

What Could Have Happened.

I will leave all political considerations aside, and discuss only the purely strategic, military possibilities. I do not propose to discuss here the fact as to whether the German High Command — quite apart from the political leaders—had staked the objective much too far ahead. Our strength at the moment of crossing the Eastern border in 1941 was no longer what it had been in 1940 in the West. The gigantic front of the three army groups no longer had the depth nor the many reserves that existed during the Western campaign.

The battles up to the Donets basin in the south, up to Moscow in the centre, and up to Leningrad in the north had been tough and heavy. There were only a few days without enemy interference. The country, its climate and roads, had greatly sapped the strength of our troops.

Again and again the German High Command had hoped that the next battle would be decisive and thus the inadequate German forces were driven even farther eastward—with their supplies deteriorated and their lines of communications extended. It was thus that two costly months (August and September) passed by in strategic uncertainty.

We did not assemble for combat until 2 October. The German forces were then caught by the autumn mud, which placed a considerable burden on the troops. Finally, during the Russian winter, we were stopped just in front of Moscow, Leningrad, and the Donets. This we were ill-prepared for, from the point of view of clothing and equipment. Although the winter brought only relatively light snow the temperature was extremely cold.

At this point the great Soviet counter-attack was launched from the Moscow region.

One hundred or more divisions—some of them quite unknown to us—made a surprise thrust out of the Moscow area, despite the fact that our propaganda had stated that the Soviets were on their last legs. Not all these enemy divisions were complete. Nevertheless, they were far superior, in numbers and in winter equipment, to the fatigued and weakened German divisions.

Generally speaking, the front line, in December, ran north from the Donets, through the region east of Kharkov, then through Kursk, Orel, east of Kaluga, east of Rzhev, Ilmen, and to the west of Leningrad. This front was about 930 miles in length, as the crow flies, but owing to very large salients, it was in actuality much longer.

If each division had been assigned a 12-mile sector, almost 100 divisions would have been necessary to defend this front. However, even then no large-scale reserves were in existence, and to defend 12 miles with such weakened divisions, in ice and snow, would have been impossible if the Soviets had decided to attack in mass at any one point.

However, the new principle of conducting battle was "an inflexible stand."

Consequently, on some sectors of the front, especially in the centre, there were great losses of men and material.

In this situation the German forces should have maintained a strategically flexible defence, at least until the spring of 1942.

A responsible supreme commander for the Eastern front, with authority and freedom of action, should have been appointed. The ideal man for this job would have been the strategically talented Field Marshal von Rundstedt, who was well acquainted with the East from two world wars, and who, moreover, had the confidence of the German forces on the Eastern front.

Because he was sick during that period, the second choice should have been the operationally well-trained Field Marshal von Manstein. A third choice might have been Field Marshal von Kluge.

The directive to effect the necessary change might have been short, stating:

> It is of signal importance that the strength of the German forces in the East be preserved by all means. The campaign in the East is to be conducted in accordance with the immediate directions of the Commander for the East until the spring of 1942, and in accordance with the situation existing on the frontal sectors. A withdrawal west of the Dnepr-Duena is out of the question. All changes in strategy are to be reported as they are made. A new directive will be issued for 1942, tying in with the development of the situation.

Freedom of action could have been thus safeguarded.

Wherever the Soviets did not attack, or did so only lightly, the front could remain stationary. However, wherever they attacked in strength, tactical fighting withdrawals could have been effected. Then there would have been no pockets and no encirclements—it would have been possible to withdraw in plenty of time to maintain straight lines. Personnel and equipment could have been spared, and the confidence of the men could have been raised considerably.

This tactical mobility and freedom of action would have been possible because the Soviets were fighting very slowly and carefully, and in addition our routes of supply would have become shorter.

On the other hand, should a sector have been gradually withdrawn tactically during the winter to such an extent that adjacent, lightly attacked sectors were endangered in consequence, then these too would have to be withdrawn even without combat.

All that was needed for the entire Eastern front was to fix and reconnoitre two or three major lines up to the Dnepr-Duena. That would have been sufficient—it would have been impossible to do more than that in the winter of 1941-42.

A large-scale, strategic, voluntary withdrawal was out of the question for two reasons:

1. A new operation could not have been initiated during this winter. In the winter battle in Masuria in 1914, we experienced the tremendous difficulties of such a campaign and we knew how slow and troublesome it could be, and how few advantages it carried, because there was no strategic mobility. A strategic withdrawal has sense only if the campaign is to be given up entirely, or if a new operation is to be started by the withdrawal. Neither was the case in 1941-42.

2. A strategic withdrawal according to the principle of "quickly and far" was unthinkable. Snow and ice did not permit the marching of more than 12 miles daily on the part of the infantry divisions—on roads which had been cleared of snow. On roads covered with snow and ice we hardly did as much as six miles a day. Because of the exhausting conditions, after only two or three long marches, the German forces would have been finished.

Only a very few roads were available for the motorized units. They could have been withdrawn over these roads, but they could not be expected to move forward.

There remained in 1941-42 only the compromise we have discussed: preparation, and maintenance of the front.

The history of this Eastern campaign shows that the most heavily attacked central front — despite heavy losses—still remained on the Ugra in the spring of 1942. That is to say that it had been pushed back only about 90 miles, after long months of heavy fighting.

Had a flexible command been permitted, this portion of the front could have withdrawn, fighting, but still coherent and without being badly weakened, up to the Desna, and to the north of it.

Plenty of space would still have been left between this and the ultimate line Don—Duena, however, this space would not have been required.

Possible Results.

If the outlined plan had been followed the results could have been:

1. An army with full fighting power.
2. Troops confident in their officers.
3. The regaining of a feeling of tactical superiority over the slow-witted Soviets.
4. Comparatively slight loss of terrain.
5. Improved supply lines.
6. The prerequisites for new strategic moves in 1942, in case the politicians had insisted on carrying out their intentions.

In other words, if it had been necessary to continue operations in 1942, then it was most important that the entire war in the East be conducted in a strategically mobile manner, as far as possible, and with two aims in view:

1. To conserve our strength as much as possible.

2. To weaken the enemy's army in the field, the very active existence of which had been demonstrated during the winter of 1941-42.

This could have been accomplished only by starting operations in May or June and ending them, at the latest, in October.

Thus there were four or five months during which there was a possibility of conducting operations. Should success still not have been attained, and should the war not have been terminated by political measures, then we would have had to revert to tactical mobility in 1942-43 in order to conserve our limited strength. The entire Eastern campaign would thus have become an extended war of attrition.

The bulk of the motorized divisions could—with a mobile, tactical, and economical conduct of battle—very well have been withdrawn and reconditioned far behind the front during the mud period—during which even the Soviets were less mobile.

The various divisions newly set up between 1941 and 1942—of which there were at least 20 or 25—could likewise have been moved from the zone of interior, eastward behind the front. Here they could have had plenty of room and opportunity for further training in accordance with the physical conditions of the East.

Railroads and supply facilities could have been restored and put

into working condition by the time the operations were to begin.

Our aim would have been to weaken the enemy by a strategic conduct of battle and to conserve our own forces. Areas and objectives would have been of no importance. As there was then probably no certainty in 1942 of the enemy's intentions, all that could be effected was a large-scale, strategic assembly.

Two large groups should have been formed from the bulk of the motorized divisions, the newly organized divisions, and possibly a number of divisions which could be spared from the front. These groups were:

Group 1—generally in the area Kiev — Vinnitsa — Dnepropetrovsk — west of the great Dnepr bend.

Group 2—generally in the area Vilnyus — Minsk — Mogilev — Polotsk — west of the Upper Dnepr and the Drina.

The Plan.

If the Soviets had attacked, there would have been plenty of time to assemble these groups in such a way that they could have been used—all according to the development of the situation—to go over on the counter-offensive and to hit the Soviets at whatever spot they were strategically the most sensitive.

However, if the Soviets had refrained from attacking we would have had to assume the offensive in June.

To plan the operation theoretically at the time was pointless, since it depended entirely on the situation and the information which we would be able to obtain. It was, however, probable that the Soviets —should we have taken the offensive—could have advanced strong forces along the line Smolensk—Orsha—Minsk, as this region offered the best road and rail facilities.

Also possible was a further attack with its focal point in the south, into the Ukraine, on the line Kiev—Lemberg.

Both groups could have been so assembled that they could strike the Soviets either in their own move or could come into play on a front of our choosing, which could have been decided after our initial tactical break-through.

If the campaign of 1942 had had, as its consequence, a useful political achievement—the cessation of hostilities—then the ultimate would have been attained.

However, if the military successes once again had been inapplicable politically, then 1942-43 would necessarily have seen a repetition of the events of 1941-42.

In 1942 we continued to attack long-range objectives with progressively weakening forces. These objectives could not have been reached, and more important, could not even have been held during the winter of 1942-43 without suitable positions and supplies.

That the German forces even as late as 1942 were still capable of action—despite their heavy losses in the winter of 1941-42—was shown by the surprisingly rapid initial successes in their drive toward the Caucasus, almost up to the mouth of the Volga, and on the Don. All of this was accomplished in June, July, and August. On the attack, the German forces of 1942 were still astonishingly good. However, they

were weak when it came to inflexible defence in lines without any depth; and without any shelter against the winter.

When it became obvious that our forces were bleeding to death in the western Caucasus, that it was impossible to hold on to the lower Volga east of the Calmu steppes, that Stalingrad could not be expected to be taken, and that the long course of the Don could not be held by even many Hungarian, Italian, and Rumanian divisions without the support of German units, the only thing that was left for us to do was to withdraw strategically back to a closed line in the West.

Thus, as history has shown, the winter of 1942-43, and particularly Stalingrad, was a heavy blow to the German forces in the East and one from which they were never to recover completely.

I, personally, did not experience the years from 1943 to 1945 on the Eastern front.

The German forces in the East were still powerful enough to hold out for another two years, even though they were fighting withdrawing actions—an unsurpassed performance. They still felt tactically superior to the enemy even though they were no longer a strong instrument of offensive strategy after 1943.

It may be said that these ideas are based on hindsight, but that is not true. In 1941-42, similar ideas were much discussed by the staffs of our corps, armies, and army groups.

Still, in December, 1941, before Moscow, Army Group Centre issued an order to the Fourth Army, ordering it not to allow itself to be encircled by enemy forces crossing the Oka (near Aleksin) and Tarusa, but to withdraw, by short marches, behind the Ugra.

The orders had been issued, the heavy artillery had been moved westward, the new Ugra positions had been reconnoitred, and the roads to be used by the corps had been cleared of snow when the *Fuhrer's* order was received stating that "Fourth Army will not move back a single step."

Thus it came about that these courageous divisions fought for every foot of the ground—and by so doing the entire army was squeezed in like a horseshoe. The Roslavl- Yukhnov- Maloyaroslavets road was the only route of supply left for the Fourth Army.

The Fourth Army was not annihilated at the time because the Soviets had executed an encirclement without sufficient impetus or energy. It eventually came to a standstill.

This was the beginning of our future *leadership.* If the Fourth Army had been allowed to withdraw behind the Ugra, it could have saved many of its men and almost all of its equipment, and the front could have been straightened considerably. The ground which was lost was worthless, anyway.

After Field Marshal von Brauchitsch was dismissed, we were required to hold many unnatural positions, which caused heavy losses—apart from the lengthening of the front.

The same things were also to happen in other theatres of war. On the Western front in 1944 such

pockets as Falaise, Avranches, Caen, St. Lo, the one west of the Rhine, the one after the failure of the Ardennes, the one east of the Rhine, and in the West Wall occurred only because of the "stay put" order.

It was not the German military leaders who failed after 1942. The blame must be laid on the unnatural rigidity commanded by a dictatorial leadership. All of Europe was defended in this way.

The question will arise as to whether any German military leader ever verbally opposed this method. This happened even before 1942—often and by many officers—but in vain. Usually the officer would be dismissed, and a successor would be appointed. Top-ranking officers sometimes changed several times during a single year for this reason.

In 1941 we were surprised to see how the political leaders in Moscow had forced the same pockets on the Soviet military leaders—with perhaps even more drastic measures. This was revealed to us by captured Soviet officers. After 1941-42, we were to learn for ourselves what this was like.

Deductions.

Without free, independent strategic responsibility—uninfluenced by pressure and fear—no general is in a position to gain successes in the field.

All really great soldiers of international military history were inwardly free men, deriving pleasure from their responsibility. Either they were the top politicians or statesmen of their country or they required an understanding political leader, without such coercion as we have discussed. Strategy means mobility. Mobility prevents losses and brings successes. Inflexible holdings brings the exact opposite.

Conclusions.

The purpose of this article was to discuss those strategic withdrawals which are carried out voluntarily and for the purpose of introducing a counter-offensive.

After 1943 the German Army was no longer capable of a strategic withdrawal — its personnel and material strength were too low.

The withdrawals initiated by the Germans from 1943 onward were no longer entirely voluntary; they were forced upon us by the enemy. A tough, slow, brave but hopeless retreating battle best expresses our actions in all theatres of operations.

The close and uninterrupted connection between the leading politicians of previous times and the executive soldier was no longer in existence.

In 1943, in spite of Stalingrad, there was still plenty of room for operations behind the front. If the fighting was to be continued merely for the purpose of gaining time, there were still a number of natural lines to which we could have withdrawn.

The early fighting could not have been conducted in any other way than was previously described—tactically free and mobile. In this manner the fighting strength of our forces could have been preserved and maintained to as great an extent as possible. Fighting this way, the German forces in the East could have been able to hold out much longer—to fight for time.

The suggestion was repeatedly made, after the spring of 1943, that

construction of an East Wall be started immediately—with all forces available. The suggested line ran from Lake Peipus, through Vitebsk, Orsha, and along the Dnepr right up to the Black Sea.

I, personally, do not think much of these "lines," but they would not have done any harm and would have offered at least a temporary halt, corresponding to the purpose of the whole process of these battles.

But these precautionary measures were curtly rejected by the *Fuhrer* who would not permit even the thought of a withdrawal.

I think, however, that it was then too late anyway to construct fortifications that would have been strong enough to hold the enemy for any considerable period of time. I also *think the line* Tilsit—Kaunas—Grodno (Niemen)—Brest Litovsk—along the Bug to Lemberb-Stryy, joining up with the Carpathian range, would have been appropriate. Another choice might have been the line Tilsit—Angerapp—the Masurian Lakes — Narew — Warsaw — along the Vistula up to the north of Dunayec—the High Tatra. Both these lines are short; make use of favourable terrain (rivers, lakes, swamps) as well as of old, but still surprisingly resistant, Russo-Polish forts; and permit the release of considerable reserves behind the lines. To construct and improve these lines we had almost two years at our disposal, and the routes between them and the home country were short.

Admittedly they would not have afforded absolute protection indefinitely but they would have saved us a considerable amount of time. They would certainly have been defensible by 1944.

Independent of these and uninfluenced by them, the battles in the East could have been conducted slowly, but with mobility. By thus preserving our fighting strength, the Soviets could have been prevented from reaching these positions until 1944 at the earliest.

It must also be considered that on the Eastern front there was no enemy air superiority—as there was on the Western front—and that Italy did not decisively influence the course of events here. However, with the campaign on the Eastern front handled as it was, each new Soviet offensive cost the German Army considerable losses in strength because all units had to remain *where they were*. When the *Fuhrer* finally permitted a limited withdrawal of a sector of the front, it generally came too late as the encircling movement had already progressed too far. The "dash-backs" caused us as many casualties as they had cost the Soviets in their pockets of 1941. Thus the German strength dwindled with every backward step.

The afore-mentioned Soviet fortifications on the Narew and the Bug could at that time still have played a significant part. It is interesting to note how tough these old fortifications—modernized between 1815 and 1890—were. In 1915 the 420- and 350-mm. mortars of that time scarcely penetrated them at all. At that time the forts exacted a heavy toll of casualties.

In 1941, the strength of the old citadel of Brest Litovsk was astoundingly high. It was more than 100 years old, cleverly built into the tributaries of the Bug, and entirely covered irregularly with

trees and bushes. The mighty walls, covered by high overgrown earthworks, and the deep subterranean bunkers could not be destroyed even with the strongest of weapons.

The citadel was held for eight days against heavy aircraft and artillery bombardment. When it finally was captured each bunker had to be taken separately by engineer troops. Compared with the Maginot Line, the German West Wall, and the Atlantic Wall, this old core of the Russian fortification system was surprisingly resistant.

So many officers have elaborated on the West, and in such detail, that I do not feel I need to go into the matter here.

From the point of view of the German command in the West, the extensive coast lines of France, Belgium, and Holland would have been indefensible under the restriction imposed by the *stand fast* order. It would have been impossible to *hold* such a vast stretch by thin lines.

The German commander in the West, Field Marshal von Rundstedt, wanted, in the event of an invasion, to secure the coasts only by coastal divisions, permanently stationed along them, in order to hold up the enemy or slow his landing operations. All of Southern France was then to be given up, and all German troops located there were to have been moved northward into the area east of Paris. The panzer divisions also would have been assembled in this area.

Then a corresponding counter-offensive with strategic mobility against the enemy advancing eastward from the coast was planned to be carried out in accordance with situational developments.

Should this prove to be unsuccessful, or should the allied air superiority prevent all large-scale strategic movements on the German side, then there remained withdrawal—first on to the line Antwerp — Namur — Masd — Nancy — Epinal — Belfort, and finally on the West Wall. A coherent evacuation of the Western areas could thereby be effected—all further measures were a matter for the politicians. The Rhine was an ideological line—without any real value.

The external theatres of war—Norway, Italy, and the Balkans—were to be evacuated accordingly.

A liberal directive for the Western theatre was repeatedly requested. The final request was made through Field Marshals von Rundstedt and Rommel in the presence of the *Fuhrer*. The request was curtly rejected. Because of the discussion Von Rundstedt was relieved and Rommel fell into disfavour.

AUSTRALIAN ARMY JOURNAL

INDEX

1953

No. 44, JANUARY — No. 55, DECEMBER

PART I.

TITLE INDEX.

Title.	Page.	Issue.
Airborne Tactical Air Control	5	45 Feb
Alexander of Tunis—Book Review	46	44 Jan
All Men are Brothers—Even in War	39	50 Jul
American Military Status in Japan	41	54 Nov
AMF Gold Medal Essay—Subject 1953	42	44 Jan
AMF Gold Medal Essay—Subject 1954	28	54 Nov
Anti Fighter or Anti Bomber	36	44 Jan
Arms and Fighting	10	44 Jan
Army Bands and Bandmasters	35	51 Aug
Army of the French Union in Indo-China	11	51 Aug
Army Yesterday and Today	22	44 Jan
Ballistics	10	53 Oct
Battery Commander in Defence	5	44 Jan
Battle of Milne Bay	22	50 Jul
Bridge Demolitions	7	55 Dec
Britain's Foreign Policy in a World of 'Isms	28	28 May
British Borneo	14	51 Aug
Burmese Civil War	10	46 Mar
Chinese Communist Forces in Korea	5	47 Apr
Collective Security in Theory and Practice	5	51 Aug
Command and Control in Battle of Field Branch Artillery	8	52 Sep
Communism and the AMF	32	44 Jan
Completed Staff Work—The Commander's Part	10	48 May
Coronation of Our Queen	5	48 May
Counter Bombardment in the Fire Plan	36	54 Nov
Critical Years—Book Review	44	44 Jan
Dilemma of the West	17	44 Jan
Duntroon, the RMC of Australia—Book Review	47	46 Mar
Dynamic of Education in the Army	42	47 Apr
Economic Aid in SE Asia—Its Political Aspects	5	54 Nov
Functions of Military Security	39	46 Mar
German Armed Forces and Democracy	19	55 Dec
German Strategy in World War II	39	52 Sep
Guided Missiles—What Makes Them Fly	35	47 Apr
Guided Missiles—What Makes Them Go	32	48 May
Guided Missiles—What Guides Them	30	49 Jun
Heartland	20	53 Oct
History of the Military Forces of South Australia	25	51 Aug
Humanities in Cadet Colleges	41	48 May
Ideal of Service	5	55 Dec
India's Influence in SE Asia	14	48 May

Title.	Page.	Issue.
Internal Ballistics	22	54 Nov
Irregular Warfare	39	49 Jun
Japanese War in SE Asia	36	45 Feb
Korean Ambush	5	46 Mar
Korea—Decisive Battle of the World	9	50 Jul
Lessons from Korea	5	52 Sep
Malaya	23	49 Jun
Militant Character of Bolshevism	32	53 Oct
Mobility and Fire Power	40	51 Aug
Morale of the Individual Soldier	30	54 Nov
Nationalism and Communism in Indo-China	27	47 Apr
Operations in Darkness and Fog	36	53 Oct
Operating Principles of Automatic Weapons	11	55 Dec
Peoples' War	43	50 Jul
Phonetics at Work	30	52 Sep
Problems of Indonesia	17	50 Jul
Psychological Warfare	11	49 Jun
Rearmament of Japan	16	52 Sep
"Rice-Ism"	5	50 Jul
Road Denial	22	47 Apr
Security—Is It Worth the Bother?	32	45 Feb
Sherlock of the Sixth	5	59 Jun
South Korea's Army	18	54 Nov
Soviet Attack in Depth	22	48 May
Spearheads of Invasion—Book Review	40	54 Nov
Spoken English	15	50 Jul
Stars and the Night Sky—1	13	45 Feb
Stars and the Night Sky—2	20	46 Mar
Stars and the Night Sky—3	12	47 Apr
Strategic Function of SE Europe in World War II	44	59 Jun
Strategic Withdrawals	27	55 Dec
Successful Methods of Study	23	55 Dec
Syntax	17	53 Oct
Tactical Employment of Atomic Weapons	28	46 Feb
Tanks and Anti Tank Defence	21	51 Aug
Tank in Ground Warfare	46	45 Feb
Task Ahead (In SE Asia)	33	52 Sep
Thinking and Writing	45	47 Apr
To Benghazi—Book Review	40	48 May
Training of a Functional Rifleman	42	46 Mar
Von Rundstedt—Book Review	45	44 Jan
War in Korea—1	23	52 Sep
War in Korea—2	5	53 Oct
Zonal Defence	24	45 Feb

PART II.

SUBJECT INDEX.

Subject.	Page.	Issue.
Air.		
Anti Fighter or Anti Bomber	36	44 Jan
Airborne Tactical Air Control	5	45 Feb
Armies, Foreign.		
American Military Status in Japan	41	54 Nov
Army of French Union in Indo-China	11	51 Aug
Chinese Communist Forces in Korea	5	47 Mar
German Armed Forces and Democracy	19	55 Dec
Armour.		
Tank in Ground Warfare	46	45 Feb
Tanks and Anti Tank Defence	21	51 Aug
Artillery.		
Battery Commander in Defence	5	44 Jan
Command and Control in Battle of Field Branch Artillery	8	52 Sep
Counter Bombardment in the Fire Plan	36	54 Nov
Astronomy.		
Stars and the Night Sky—1	13	45 Feb
Stars and the Night Sky—2	20	46 Mar
Stars and the Night Sky—3	12	47 Apr
Atomic Weapons.		
Tactical Employment of Atomic Weapons	10	46 Mar
Australian Military Forces.		
AMF Gold Medal Essay—Subject 1953	42	44 Jan
AMF Gold Medal Essay—Subject 1954	28	54 Nov
Army Yesterday and Today	22	44 Jan
History of the Military Forces of South Australia	25	51 Aug
Ballistics.		
Ballistics	10	53 Oct
Internal Ballistics	22	54 Nov
Bands.		
Army Bands and Bandmasters	35	51 Aug
Battles.		
Battle of Milne Bay	22	50 Jul
Book Reviews.		
Alexander of Tunis	46	44 Jan
Critical Years	44	44 Jan
Duntroon—RMC of Australia	47	46 Mar
Spearheads of Invasion	40	54 Nov
To Benghazi	40	48 May
Von Rundstedt	45	44 Jan

Subject.	Page.	Issue.
Borneo.		
British Borneo	14	51 Aug
Burma.		
Burmese Civil War	10	46 Mar
Campaigns.		
New Guinea—Battle of Milne Bay	22	50 Jul
New Guinea Sherlock of the Sixth	5	49 Jun
Communism.		
Britain's Foreign Policy in a World of Changing 'Isms	28	48 May
Communism and the AMF	32	44 Jan
Militant Character of Bolshevism	32	53 Oct
Defence.		
Zonal Defence	24	45 Feb
Education.		
Dynamic of Education in the Army	22	47 Apr
Humanities in Cadet Colleges	41	48 May
Engineers.		
Road Denial	22	47 Apr
Bridge Demolitions	7	55 Dec
English.		
Phonetics at Work	30	52 Sep
Spoken English	15	50 Jul
Syntax	17	53 Oct
Europe.		
Strategic Function of SE Europe in World War II	44	49 Jun
Firepower.		
Mobility and Firepower	40	51 Aug
General.		
Coronation of Our Queen	5	48 May
Geneva Conventions.		
All Men Are Brothers—Even in War	39	50 Jul
Geopolitics.		
Heartland	20	53 Oct
Germany.		
German Strategy in World War II	39	52 Sep
Guerilla Warfare.		
Irregular Warfare	39	49 Jun
Peoples' War	43	50 Jul
Guided Missiles.		
Guided Missiles—What Makes Them Fly	35	47 Apr
Guided Missiles—What Makes Them Go	32	48 May
Guided Missiles—What Guides Them	30	49 Jun
India.		
India's Influence in SE Asia	14	48 May
Indo-China.		
Army of the French Union in Indo-China	11	51 Aug
Nationalism and Communism in Indo-China	27	47 Apr

Subject.	Page.	Issue.
Indonesia.		
Problems of Indonesia	17	50 Jul
Japan.		
American Military Status in Japan	41	54 Nov
Rearmament of Japan	16	52 Sep
Korea.		
Chinese Communist Forces in Korea	5	47 Apr
Collective Security in Theory and Practice	5	51 Aug
Korean Ambush	5	46 Mar
Korea—Decisive Battle of the World	9	50 Jul
Lessons from Korea	5	52 Sep
South Korea's Army	18	54 Nov
War in Korea—1	23	52 Sep
War in Korea—2	18	54 Nov
Leadership.		
Ideal of Service	5	55 Dec
Sherlock of the Sixth	5	49 Jun
Malaya.		
Malaya	23	49 Jun
Military Geography.		
Heartland	20	53 Oct
Military History.		
Battle of Milne Bay	22	50 Jul
Mobility.		
Mobility and Firepower	40	51 Aug
Morale.		
Ideal of Service	5	55 Dec
Morale of the Individual Soldier	30	54 Nov
New Guinea.		
Battle of Milne Bay	22	50 Jul
Sherlock of the Sixth	5	49 Jun
Operations.		
Operations in Darkness and Fog	36	53 Oct
Psychological Warfare.		
Psychological Warfare	11	49 Jun
Public Speaking.		
Spoken English	15	50 Jul
Russia.		
Militant Character of Bolshevism	32	53 Oct
Soviet Attack in Depth	22	48 May
Security.		
Collective Security in Theory and Practice	5	51 Aug
Communism and the AMF	32	44 Jan
Functions of Military Security	39	46 Mar
Security—Is It Worth the Bother?	32	45 Feb

Subject.	Page.	Issue.	
South East Asia.			
Army of the French Union in Indo-China	11	51	Aug
British Borneo	14	51	Aug
Burmese Civil War	10	46	Mar
Dilemma of the West	17	45	Jan
Economic Aid in SE Asia—Its Political Aspects	5	54	Nov
India's Influence in SE Asia	14	48	May
Japanese War in SE Asia	36	45	Feb
Malaya	23	49	Jun
Nationalism and Communism in Indo-China	27	47	Apr.
Problems of Indonesia	17	50	Jul
"Rice-Ism"	5	50	Jul
Task Ahead	53	52	Sep
Staff Duties.			
Completed Staff Work—The Commander's Part	10	48	May
Thinking and Writing	45	47	Apr
Strategy.			
German Strategy in World War II	39	52	Sep
Heartland	20	53	Oct
Irregular Warfare	39	49	Jun
Strategic Function of SE Europe in World War II	44	49	Jun
Strategic Withdrawals	27	55	Dec
Study.			
Successful Methods of Study	25	55	Dec
Tactics.			
Command and Control in Battle of Field Branch Artillery	8	52	Sep
Korean Ambush	5	46	Mar
Operations in Darkness and Fog	22	48	May
Soviet Attack in Depth	36	53	Oct
Tactical Employment of Atomic Weapons	28	46	Mar
Zonal Defence	24	45	Feb
Training.			
Training of a Functional Rifleman	42	46	Mar
United Nations.			
Collective Security in Theory and Practice	5	51	Aug
Weapons.			
Arms and Fighting	10	44	Jan
Operating Principles of Automatic Weapons	11	55	Dec