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The Cover

Canadian soldiers in a liquid sea of mud during the attack on Passchendaele Ridge in the autumn of 1917.

(See article on page one)

The object of the Canadian Army Journal, which is published by the Directorate of Military Training under authority of the Chief of the General Staff, is to provide officers of the Active, Reserve and Supplementary Reserve Forces with information designed to keep them abreast of current military trends and topics, and to stimulate interest in current military affairs.

THE DEVELOPMENT OF THE CANADIAN ARMY

By
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ARMY HEADQUARTERS, OTTAWA.

III: The Early Twentieth Century, 1902-1918

Preparing for Armageddon

The period between the South African War and the outbreak of the First World War in 1914 was a time of continued reform and expansion. The situation in Europe became steadily more strained, and it was more and more evident that there was danger of Britain's being drawn into conflict with Germany. This possibility is the explanation of many developments in Canada.

The "Dundonald incident" of 1904, in which the Canadian Government dismissed the General Officer Commanding, coincided in time with important developments in military administration in the United Kingdom resulting from the South African War. A committee headed by Lord Esher recommended the abolition of the office of Commander-in-Chief and the institution of an Army Council presided over by the Secretary of State for War and comprising both civil and military members. The First Military Member would be the Chief of the General Staff, who would replace the Commander-in-Chief as the government's senior military adviser.

These recommendations were acted on, and were copied in Canada. A new Militia Act was passed in 1904. This provided, "The Governor in Council may appoint a Militia Council to advise the Minister on all matters relating to the Militia which are referred to the Council by the Minister. The composition, procedure and powers of the Council shall be as prescribed." The composition of the Council (the Minister as President; four Military Members—Chief of the General Staff, Adjutant General, Quartermaster General and Master General of the Ordnance; the Deputy Minister as Civilian Member and the Accountant of the Department of Militia and Defence as Financial Member; and a civilian Secretary) was prescribed by an order in council

later in 1904. Although the new act continued to permit the appointment of a major general to be "charged with the military command of the Militia", Lord Dundonald was the last G.O.C. Hereafter, as in the United Kingdom, the senior military adviser to the government was the Chief of the General Staff. The first C.G.S. to be appointed was Major-General Sir Percy Lake; the first Canadian to hold the appointment was Brigadier-General W. D. (later General Sir William) Otter, appointed in 1908.

The thirty years during which British officers acted as commanders of the Militia had been a period of transition. It is hard to see how any other system could have worked better in the circumstances of the time, but the arrangement could not have been perpetuated. The position of the British G.Os.C. had always been difficult, and their difficulties had been increased by their inevitable lack of acquaintance with Canadian conditions. And the new system of administration proved a better one. A careful student of the history of the Army writes of the situation after 1904, "It is a fact that disputes between the Minister and the principal soldier became fewer, and of more limited scope. It is a further fact that after the change the soldiers had more of their own way than before." This was the case even though after 1904 "the civilian Minister became the practical Commanding Officer of the Militia".*

The Militia Act of 1904 fixed the limit of strength of the Permanent Force at 2000 men. Shortly, however, it had to be raised again. The Royal Navy was concentrating its forces increasingly in home waters to meet the German threat. This led to the decision to abandon Halifax and Esquimalt as Imperial naval bases, and this in turn to the withdrawal of the British garrisons. Early in 1906 the last British troops left Canada and the two fortresses were transferred to the Canadian Government. An amendment to the Militia Act raised the authorized strength of the Permanent Force to 5000, and steps were taken to recruit additional men to replace the British garrisons of these bases. By 1914 the actual strength of the force had risen to 3000 all ranks.

During these years of preparation preceding 1914 the strength, armament and efficiency of the Non-Permanent Active Militia were all improved. The force was popular and received considerable encouragement from the government, both during Sir Frederick Borden's tenure as Minister of Militia and, after the change of government in 1911, under

*Colonel C. F. Hamilton, "*The Canadian Militia: The Change in Organization*" (Canadian Defence Quarterly, Vol. VIII, October 1930).

Sir Sam Hughes. The number of men trained increased from 44,000 all ranks in 1909–10 to 57,000 in 1913–14. During the same period Militia expenditure rose from less than $6,000,000 to nearly $11,000,000. However, the twelve days' annual drill which was permitted did not allow much more than the teaching of the simplest rudiments. The result was that when the First World War broke out Canada had available no force capable of playing an immediate active part; she had, however, a foundation upon which an important structure could be built.

A series of Imperial Conferences had made improved arrangements for military co-operation within the Empire. The Colonial Conference of 1907 and the Defence Conference of 1909 witnessed considerable advances. Several of the Dominions, and particularly Canada, were doubtful of proposals that they should earmark definite contingents for use in a future crisis; but there was agreement upon maintaining general uniformity throughout the Empire in matters of war organization, armament and equipment, training doctrine, etc. This was very sound policy in the circumstances of the day, and it paid large dividends in 1914. Approval was given also to the principle of an Imperial General Staff, branches of which would exist in all the self-governing nations of the Empire. Officers throughout the Empire performing General Staff duties were to be members of this one body, while however remaining responsible to and under the control of their own governments. This arrangement, though it did not become permanent, is commemorated by the title still held by the senior soldier in Great Britain: Chief of the Imperial General Staff.

In one respect Canada had already strayed from the principle of uniformity of armament. Her forces had adopted the Ross rifle in 1902. The chief reason for adopting it, and the best one, was that it offered the prospect of rifles for the Militia being manufactured in Canada. The possibility of having the British Lee-Enfield so manufactured was investigated but the company concerned refused the government's overtures and in consequence a contract was made for production in Canada of the Ross. The latter proved an excellent target weapon but in 1915 it showed itself inferior to the new short Lee-Enfield under service conditions. The Canadian forces overseas were re-armed with the Lee-Enfield in 1916.*

The closer links with the British forces evident in this period appear

*The complicated story of the Ross rifle is told in detail in Appendix 111 to Colonel A. F. Duguid, Official History of the Canadian Forces in the Great War 1914–1919, *General Series, Vol. I* (Ottawa, 1938).

in visits to Canada by two eminent British soldiers, Sir John French (1910) and Sir Ian Hamilton (1913). These officers held the appointment of Inspector General of Overseas Forces and visited Canada by invitation. One result of Sir John French's report was the reorganization of the Militia in Eastern Canada on a divisional basis (six divisions and four mounted brigades), on the principle of providing in peacetime an organization that could be used in war. The Divisions replaced the six eastern Military Districts; in the west the Districts continued to exist and the highest formation was the brigade. It may be noted that in 1905 a move in the direction of higher organization had been taken when the Districts in Eastern Canada were grouped into four "Commands" for training and administrative purposes. These were now abolished.

On the eve of the outbreak of war in August 1914 the Non-Permanent Active Militia was at the greatest strength Canada's citizen force has ever possessed in a time of peace. Fully 59,000 troops carried out training that year, and "had the war not broken out, the number would have reached 64,000". Over 34,000 trained in camps. At Petawawa, which had been acquired as a central training camp in 1905, at least 8000 men were assembled for training under conditions said to have approximated more closely to active service than in any manoeuvres since the Fenian troubles.

Until the twentieth century the defence forces of Canada had been, in the main, land forces only, and such naval militia as had existed at various times was administered by the Militia Department. There was, of course, no air force, for heavier-than-air flying began only in 1903. However, some contribution by Canada to naval defence became a matter of urgent discussion early in the new century, and in 1910 Parliament passed the Naval Service Act which was the origin of the Royal Canadian Navy. The Navy was controlled by a Minister of the Naval Service who was also Minister of Marine and Fisheries; this arrangement lasted until 1922. Two old cruisers were purchased from the Admiralty as training ships, but political controversy turning on the question of a national fleet versus a contribution to the Royal Navy militated against any large progress, and the force was still in its infancy when war came. The first aeroplane flight in Canada took place in 1909; in the same year demonstrations were given at Petawawa for the Militia Council; however, no Canadian military flying service was organized until after war broke out.*

**In the United Kingdom the Royal Flying Corps was organized in 1912, its nucleus being the Air Battalion of the Royal Engineers.*

The First World War

The First World War, 1914–18, was in many respects the most important episode in Canadian history. That it had the effect of greatly enhancing Canada's national status was very largely due to the size of the forces the country raised and the importance of their contribution in the field.

Before the outbreak of war a mobilization scheme was in existence. In addition to plans for the general mobilization of the Militia, there was a plan for providing one division and one mounted brigade for service abroad. However, on 31 July 1914, on Sir Sam Hughes' instructions, orders were sent out voiding this scheme and enjoining consideration of plans on a new basis. In fact, the First Canadian Contingent, which was offered by the Canadian Government even before Britain's declaration of war, was organized by the rather peculiar procedure of direct communication between Militia Headquarters in Ottawa and the 226 individual units of the Militia, bypassing the Divisions and Districts. This arrangement might have led to chaos, but the abounding energy of the Minister of Militia and the enthusiasm of the units and the country at large produced a rapid and valuable result even by these means. The British Government had suggested a force of one division. By 18 August volunteers for overseas service were arriving at the designated concentration centre at Valcartier, and by 8 September over 32,000 men had been collected there. The 1st Canadian Division, sailing in an impressive convoy of 31 transports, left Gaspé Basin on 3 October and entered Plymouth Sound eleven days later.

The units of the Canadian Expeditionary Force were new units raised for the occasion, although after some discussion the point was satisfactorily established that they were units of the Canadian Militia. The infantry units of the C.E.F. were, in general, numbered battalions not wearing the badges of pre-war militia regiments, though there were a few exceptions to this rule, notably in the case of the one Permanent Force infantry unit, The Royal Canadian Regiment. The procedure followed in 1914 was that individual militia regiments were called upon to provide volunteers for the C.E.F. units being raised in their areas. A good many of the men enlisted into the new units came from the public and had had no training. The vast majority of the officers, however, had held commissions in the Non-Permanent Active Militia.

The immature state of Canada and Canada's military organization in 1914 was reflected in the fact that an officer of the British regular army

(Lieutenant-General E. A. H. Alderson) was appointed to command the 1st Canadian Division. When the Canadian Corps was formed in France in September 1915, Alderson became its commander; and only in June 1917 was a Canadian, Lieutenant-General Sir Arthur Currie, a pre-war officer of the N.P.A.M. who had been given a brigade of the 1st Division in 1914, appointed to command the Corps. And all through the war virtually every first-grade staff officer in the Corps was a British regular.

The one division raised in 1914, was the nucleus of a formidable force. When the Canadian Corps was first formed it had a strength of only two divisions, but in August 1916 it reached its full strength of four divisions, each of three brigades of four battalions. In 1918 a proposal was made for reorganizing the Corps. At this time the British Army, faced with a serious crisis in reinforcements, reduced its infantry brigades from four battalions to three. The suggestion was that Canada should follow suit and convert the existing Corps of four divisions into an Army of two corps of three divisions each on the smaller establishment. General Currie successfully opposed this proposal. The Canadian brigades continued to consist of four battalions and the Corps organization was maintained. The result was that the Canadian Corps was far stronger, in the final stages of the war, than any comparable British formation; it has been called "the most powerful self-contained striking force on any battle-front". The 5th Canadian Division, which had been formed in England, was broken up and used for reinforcements, except that its divisional artillery was brought to France and used to increase the artillery resources of the Canadian Corps.

In the beginning, and for the greater part of the war, all Canadian soldiers were volunteers, and the Corps was kept up to strength by voluntary enlistment. But in 1917 declining recruiting made compulsory service necessary, and Parliament passed the Military Service Act to provide for it. The measure excited much opposition, particularly in Quebec. Of the men actually sent overseas, only about eleven per cent were draftees, though the proportion would have increased had the war been prolonged. There was no reduction in the establishment of the Corps, and—unlike the five-division Australian Corps, whose strength was greatly reduced and which was withdrawn from the line, on its government's insistence, early in October 1918—it remained in action to the end.

The Corps in Action

Of the Canadians' battles on the Western Front there is no need to speak at length here. The 1st Division entered the line in France in February 1915, and in the following April, in the Second Battle of Ypres, it stood up to the first German gas attack. The withdrawal of troops on its left exposed its flank, but it hung on. The Commander-in-Chief of the British Expeditionary Force, Sir John French, reported later, "In spite of the danger to which they were exposed the Canadians held their ground with a magnificent display of tenacity and courage; and it is not too much to say that the bearing and conduct of these splendid troops averted a disaster which might have been attended with the most serious consequences". Such was Canada's first appearance on European battlefields. It was one of few important defensive actions the Canadians fought. Their normal role was that of assault troops, which in the trench warfare of the Western Front usually involved heavy losses.

The Canadians carried an increasing share of the battle burden on the British front as the war progressed. In April 1917 the Corps gave an impressive demonstration of its power and efficiency in the capture of Vimy Ridge; and in 1918, in the final epic "Hundred Days" that began with the great triumph in front of Amiens on 8 August and ended with the German surrender on 11 November, General Currie's Corps served to a large extent as the spearhead of the victorious British armies.

As the months passed a Canadian national spirit moved more and more strongly in the Canadian Corps, and it was reflected in the actions and policy of the Corps Commander, who, like his country, grew steadily in stature under the stress of responsibility. It is true that, throughout, the Corps functioned as part of the British armies in France and was always under the operational command of a British Army Commander.* This was essential and was never questioned; nevertheless, in 1917–18 a growing autonomy was evident even in operational matters. It appears in the facts, attested by Sir Arthur Currie's biographer, concerning the attack on the Passchendaele Ridge in the autumn of 1917. This assault across a sea of liquid mud was a particularly formidable job; even the Australians and New Zealanders had failed to take the Ridge. Currie was asked to detach two divisions to attempt the operation. He replied that he would not accept the task

*On the other hand, "in matters of organization and administration, the Canadian Government . . . retained full responsibility in respect to its own Forces", and in July 1918 a "Canadian Section" was formed at G.H.Q. British Armies in France to deal with these matters.

except on the condition that the Corps would go as a whole. It is said that he also declined to serve under the Fifth Army. He was supported by the Commander-in-Chief, Sir Douglas Haig, who also saw to it that he was given the time and the resources which he required for mounting the attack. The result was that the carefully-prepared offensive succeeded. The Ridge was taken by a succession of operations which followed the timetable almost exactly; though the cost was staggering.

Finally, in the spring of 1918, in the crisis occasioned by the last great German offensive, when Currie found that divisions were being taken from him to such an extent that the Canadian Corps was being broken up, he asserted himself effectively. As a result of his representations the Corps was reunited, and all four Canadian divisions remained under his command during the heavy fighting down to the Armistice. The record of those battles gives strong support to the view that Canadians fight most effectively as a united national force. Currie himself wrote after the war that the Canadian Corps, "while technically an army corps of the British Army, differed from other army corps in that it was an integral tactical unit, moving and fighting as a whole".

The Canadian effort in this war was enormous by any standard, and the cost in blood was great. In all, it is recorded, 619,636 men served in the Canadian Expeditionary Force; 424,589 all ranks went overseas; and 60,661 sacrificed their lives. In such fires as this are nations forged.

In the First World War Canada had no air force of her own, though Sir Sam Hughes did authorize a tiny nucleus in 1914 and Canadian squadrons were being organized at the end. But about 24,000 Canadians, many of them first enlisted in the Canadian Expeditionary Force, served in the Royal Flying Corps, the Royal Naval Air Service and (after its formation on 1 April 1918) the Royal Air Force; and more than 1500 of these lost their lives. At least a quarter of all the officers in the Imperial air forces were Canadians, and the individual quality of the country's fighting airmen was the very highest. The Royal Canadian Navy started the war at a disadvantage, with a very small existing force overshadowed by political wrangles. In 1914, when an informal inquiry was made to the British Admiralty as to whether it would recommend an expansion of Canadian naval forces, the reply favoured concentration on the army. Consequently, Canada's sea forces remained comparatively small. Nevertheless, at the Armistice they numbered over 5000 men. A large proportion served in the Atlantic Coast patrols, a force of small craft, mainly trawlers and

drifters, which guarded Canadian ports and waters against the German submarines. At the end, the Royal Canadian Navy was operating 134 vessels, not including motor launches.

Throughout the war, however, Canada's national effort had centred heavily upon her land forces and on the Western Front. Amid the blood and fire of that grim arena was written a new chapter of Canadian history, proud, sorrowful and exalted.

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A Depressing Spectacle

To undertake the siege of a first-rate fortress in the thirteenth century meant that the main field army of the besieger might be tied down to this single operation for the whole campaigning season; meanwhile the enemy would have a free hand in most other regions of the theatre of war. Hence there was a great temptation to avoid decisive operations, and to work by "propagandic" or psychological methods, *i.e.* by wasting the territory of the enemy so as to drive him to despair and surrender, or by intriguing with the discontented minority which existed in almost every city, in order to bring about a revolutionary rising against its government. If the local Ghibellines (generally the minority faction during the Lombard War in Italy) were not strong enough for an armed civic insurrection, they might at least be numerous and unpatriotic enough to betray a gate or a tower at some midnight *escalade*. The record of the whole war, turning so much on treachery and so little on honest fighting, is very depressing.—*Sir Charles Oman.*

LONG RANGE LAND MEASUREMENTS

By
Major L. M. Sebert, Royal Canadian Engineers*

Since the end of the Second World War much thought, both civil and military, has been given to the development of techniques for determining the distance and direction between widely separated points on the earth's surface. Many of these techniques have a definite application to military operations. Some of the more obvious fields in which distance measurements can be used, to list only a few, are:

(a) The rapid survey of the artillery gun positions of a force operating in inadequately mapped areas such as the Northwest Territories.

(b) The establishment of ground control for the mapping of difficult terrain, such as that of Northern Canada.

(c) The establishment of the geographical position of any post (such as a flash-spotting, sound-ranging, or missile guiding station) the value of which is entirely dependent on the accuracy of the determination of its position.

As mentioned above this list is by no means exhaustive. Anyone who considers the techniques of future warfare could easily make numerous additions. The purpose of this paper is not to complete the list but to outline three different systems of long-range land measurement and, in a general way, indicate some of the operational possibilities of each.

Flare Triangulation

Of the three new systems of surveying covered in this paper, Flare Triangulation most closely resembles the traditional methods of survey. For this reason it will be described first.

In surveying, an unknown station can be located by taking bearings to it from two fixed stations. This is known as intersection. An unknown station can also be located by setting up an angle reading instrument at the unknown station and reading the horizontal angles to *three* or more

*The author, who is on the strength of the Army Survey Establishment, Army Headquarters, Ottawa, is at present attached to the United States Army and is serving with the Army Map Service, Washington, D.C.—Editor.

fixed stations. This is called resection.

With the above principles of intersection and resection in mind, Lt. Col. W. E. Browne, O.B.E., of the Royal Engineers, developed a survey system, using, as aerial stations, parachute flares dropped from an aircraft. While a flare is burning in the air its position at a given instant can be determined if bearings are taken on it from two known stations at precisely that instant. If three flares are intersected as described above and at the moment of intersection a bearing on each flare is taken from an unknown station, that station can be located by resection. In other words, if you have two known stations and the position is required of a third, the position can be obtained by dropping flares between the known and unknown stations and taking simultaneous observations from all three stations on each of the flares

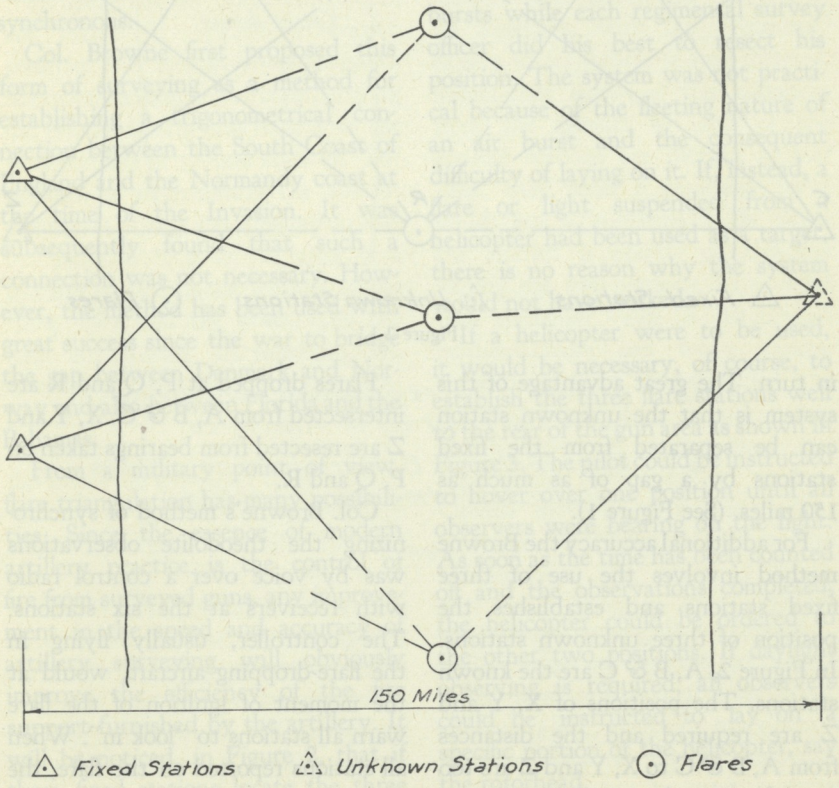

Figure 1

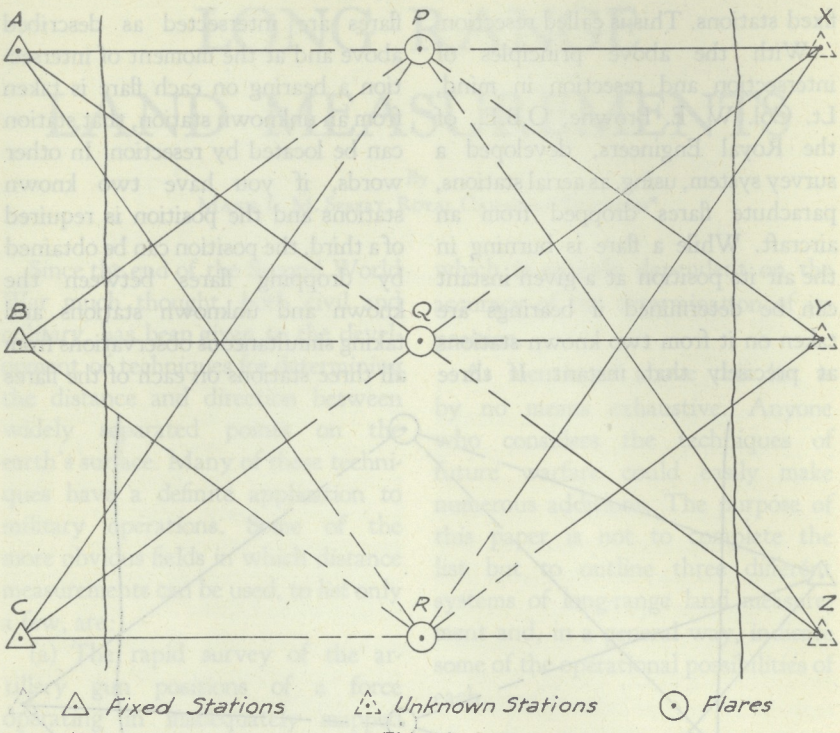

Figure 2

in turn. The great advantage of this system is that the unknown station can be separated from the fixed stations by a gap of as much as 150 miles. (See Figure 1).

For additional accuracy the Browne method involves the use of three fixed stations and establishes the position of three unknown stations. In Figure 2, A, B & C are the known stations. The positions of X, Y and Z are required and the distances from A, B & C to X, Y and Z are too great for normal triangulation.

Flares dropped at P, Q and R are intersected from A, B & C. X, Y and Z are resected from bearings taken on P, Q and R.

Col. Browne's method of synchronizing the theodolite observations was by voice over a control radio with receivers at the six stations. The controller, usually flying in the flare-dropping aircraft, would at the moment of ignition of the flare warn all stations to "look in". When all stations reported on the flare, the seconds would be counted off—

five, four, three, two, one, MARK. At the sound MARK all observers would read the horizontal circle of their instruments. A later refinement was introduced by the U.S. Army Map Service when they developed a theodolite with a camera mounted to record the readings of the horizontal circle. The shutter of the camera could be actuated by a radio signal sent from the flare-dropping aircraft. This enables set of readings to be taken on the flare that are exactly synchronous.

Col. Browne first proposed this form of surveying as a method for establishing a trigonometrical connection between the South Coast of England and the Normandy coast at the time of the Invasion. It was subsequently found that such a connection was not necessary. However, the method has been used with great success since the war to bridge the gap between Denmark and Norway and also between Florida and the Bahamas.

From a military point of view, flare triangulation has many possibilities. Since the essence of modern artillery practice is the control of fire from surveyed guns, any improvement in the speed and accuracy of artillery surveying will obviously improve the efficiency of the fire support furnished by the artillery. It will be noticed, in Figure 2, that if three fixed stations locate the three flares, the number of unknown positions that can be located is limited only by the number of theodolites available with which to make the resection. In short, if sufficient instruments are available, it is quite possible to survey all gun positions of a division or corps simultaneously.

In 1940 a system similar to this was tried by the RCA in England. Air bursts were fired ahead of the divisional artillery. The Artillery Survey Regiment intersected the bursts while each regimental survey officer did his best to resect his position. The system was not practical because of the fleeting nature of an air burst and the consequent difficulty of laying on it. If, instead, a flare or light suspended from a helicopter had been used as a target, there is no reason why the system would not have worked.

If a helicopter were to be used, it would be necessary, of course, to establish the three flare stations well to the rear of the gun area as shown in Figure 3. The pilot could be instructed to hover over one position until all observers were bearing on the light. As soon as the time has been counted off and the observations completed, the helicopter could be ordered to the other two positions. If daylight observing is required, all observers could be instructed to lay on a specific portion of the helicopter, say the rotorhead.

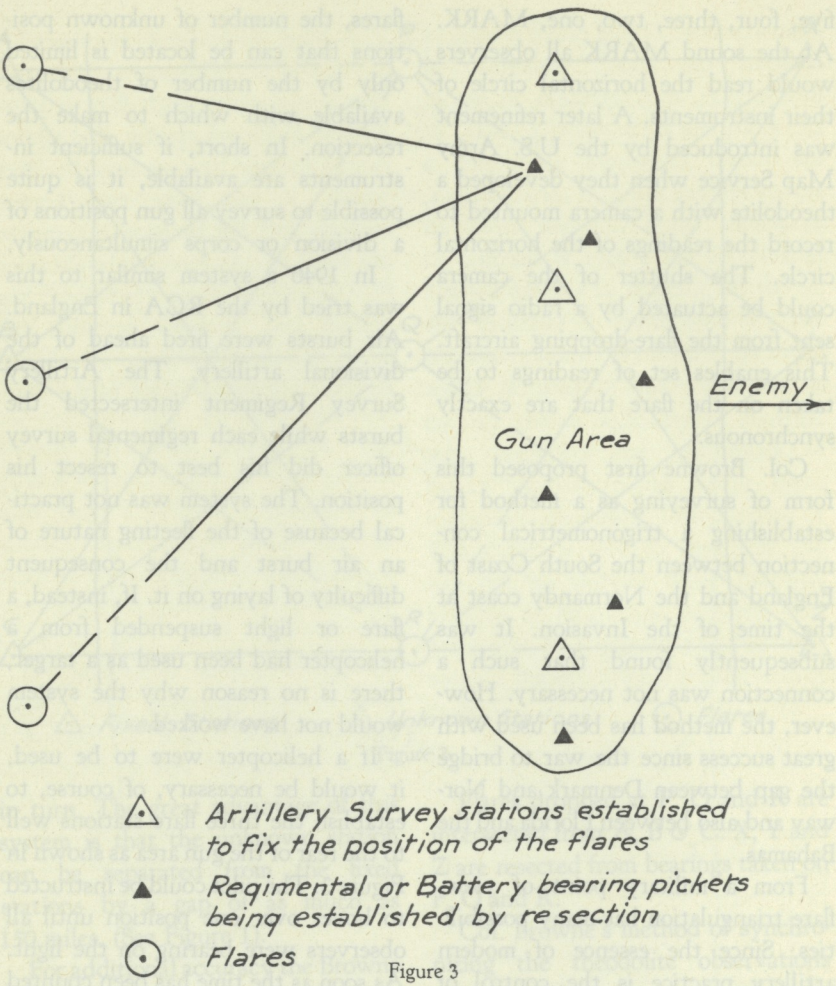

Figure 3

Shoran

Shoran, as the name implies, was developed as a short range aid to navigation. It was first used operationally in Italy in 1944 for the pinpoint bombing of tactical targets. It is a form of radar but not of the type normally employed in aircraft detection, which, known as "non-co-operative" radar, relies on reflection for the return of the radar signal to the transmitter. In the more reliable "co-operative" radar the signal is directed towards a

"transponder" which receives it, and then transmits the return on another frequency. In Shoran the transmitter is airborne and transmits simultaneously on two different frequencies to two "transponders". The time of the passage of the signals from the instant they leave the transmitter until they return is measured by a cathode ray tube in the aircraft but is recorded in units of distance rather than those of time.

In operation the two transponders are placed at points of known position. It is then possible to measure the distance from the aircraft carrying the Shoran timing unit to each of the transponders or ground stations. The problem of determining the aircraft position is purely a mathematical one, for the aircraft is at the apex of a triangle of which the lengths of the three sides and the position of the base are known. In bombing, the distances from the target to the ground stations were computed before the mission was carried out, and the navigation to the target could then be carried out from the Shoran readings alone. This made it feasible to carry out pinpoint bombing even with overcast. In photographic reconnaissance work, the aircraft may be directed to the target and its exact position known at the time the photographs are taken. To ensure that accurate Shoran readings are kept, a photographic recorder synchronized electrically with the aircraft camera automatically records the values on the Shoran dials.

The possibilities of Shoran for the precise measurement of distances were recognized in its early stages and detailed investigations have been made with very favourable results. The procedure used is as follows:— Transponder or ground stations are set at the extremities of the line whose length is required. The Shoran aircraft then flies across this line at its midpoint, with the "recorder" camera set at a three-second interval. When the sums of the distances from the aircraft to each of the ground stations are plotted against time, they form a parabolic curve which has a minimum value when the aircraft is exactly on the line joining the two stations. In practice this minimum value is determined mathematically and when various corrections have been applied the true distance between the two points is established. A project using this system was carried out in western Canada in 1949 with results that indicated the average precision in measurement was about 1/58,000, or 1 foot in 11 miles. This method is now being employed by the Geodetic Survey and the RCAF in a joint project to establish points of precise latitude and longitude at intervals of approximately 150 miles in northern Canada.

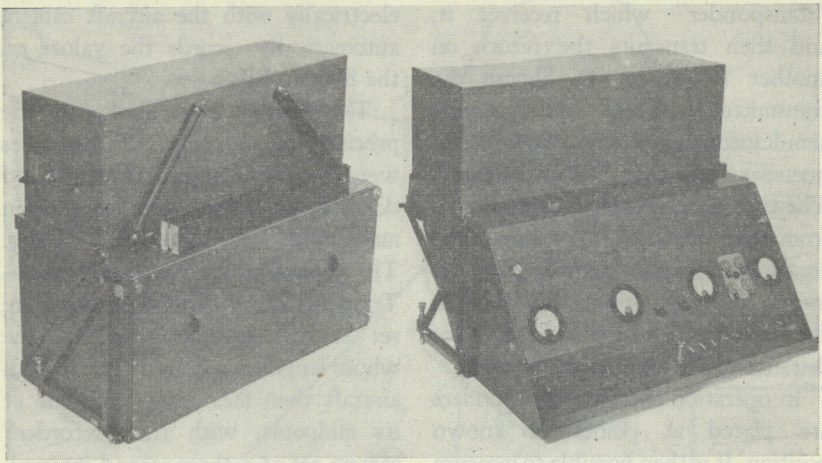

Figure 4
Geodimeter: Left, folded together for transport; right, front view showing indicator dials and controls.

Aircraft carrying out survey photography may be positioned in the same manner as those on bombing or reconnaissance missions. The "recorder" is synchronized electrically with the survey camera, so that the distance from the aircraft to the ground stations is known for each photograph. This reduces the requirement for the normal field survey to that of determining elevations and makes possible more rapid mapping of many areas previously considered difficult of access. Shoran is now being employed by the Army Survey Establishment for mapping at a scale of 1/250,000 in northern Canada.

The limitations of Shoran are similar to other precise high-frequency radar techniques using the pulse system. At present it is considered that one tenth of a micro second (one ten-millionth of a second) is the best that any electronic equipment can measure. Applying this value to the Shoran system would mean that no length could be measured consistently closer than 15 metres. In geodetic work where readings are repeated (at least 500 readings are used to determine a distance), this figure has been reduced to about 15 feet. This gives the high precision of 1/60,000 in a line 170 miles long, but the unacceptable value of 1/3,500 for a line 10 miles in length. Shoran then is limited to measurements of considerable length and other survey methods are still required for the

precise determination of shorter distances.

Measurement of Distance by the Speed of Light

Several instruments are being developed to measure a given distance by timing the passage of a pulse of light over the distance. One which was designed by Dr. Erik Bergstrand, of the Swedish Geographical Survey, appears to be the most efficient of those employing this method. The efficiency of Dr. Bergstrand's Geodimeter, as the device is called, can be best illustrated by the statement that it has measured a line approximately 20 miles long with an error of less than 6 inches. (See Figure 4).

Figure 5 will assist in explaining the workings of the Geodimeter.

Cr-Os is a crystal controlled oscillator which is wired to send a series of high frequency pulses to both L and P.

L is a light source which sends out a series of short pulses of light as controlled by Cr-Os. The light is focused on the mirror.

P is a photo-electric cell which is affected in two ways:—
(a) By the series of pulses from Cr-Os which cause a fluctuation in the sensitivity of the cell; and
(b) By pulses of light returning from the mirror.

D is the distance to be measured and may vary from a few feet to about 20 miles.

d is the distance from one "in phase" point to the next. This will be explained below.

△ indicate the ends of the line being measured.

As mentioned above, the cell P is affected in two ways but it is important to note that the two effects start at the same time. Two pulses start from Cr-Os at identical

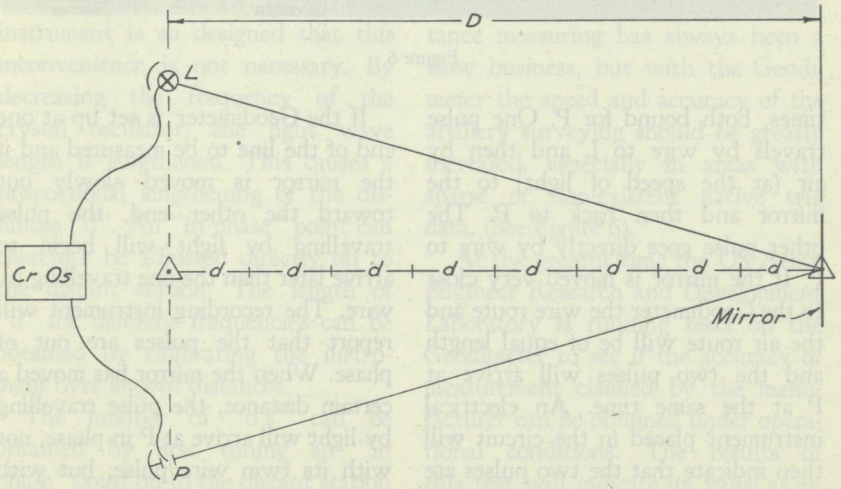

Figure 5

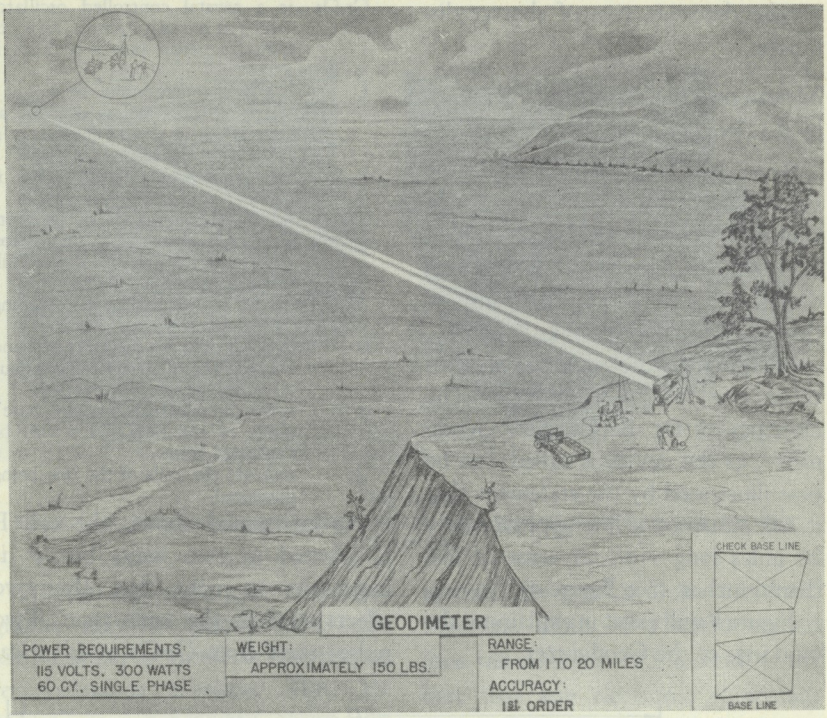

Figure 6

times, both bound for P. One pulse travels by wire to L and then by air (at the speed of light) to the mirror and then back to P. The other pulse goes directly by wire to P. If the mirror is moved very close to the Geodimeter the wire route and the air route will be of equal length and the two pulses will arrive at P at the same time. An electrical instrument placed in the circuit will then indicate that the two pulses are in phase.

If the Geodimeter is set up at one end of the line to be measured and if the mirror is moved slowly out toward the other end, the pulse travelling by light will begin to arrive later than the one travelling by wire. The recording instrument will report that the pulses are out of phase. When the mirror has moved a certain distance, the pulse travelling by light will arrive at P in phase, not with its twin wire pulse, but with the next wire pulse behind. Here

the recording instrument will again report the system in phase. At this point the mirror has been moved out the first distance "d" shown in Figure 5.

As the mirror is moved away to the distant station, a certain number of "in phase" points will be passed. It can be seen that the measurement D can be made if we know:—

(a) The distance the mirror must move from one "in phase" point to the next, i.e. the quantity "d".

(b) The number of "in phase" points along D, i.e. the number of "d's".

(c) The small distance from the last "in phase" point to the end of the measured line.

Moving the mirror as described above would be very difficult in actual practice, and Dr. Bergstrand's instrument is so designed that this inconvenience is not necessary. By decreasing the frequency of the crystal oscillator, the light wave length is lengthened. This causes a proportional lengthening of the distances "d". An "in phase" point can therefore be adjusted directly on to the distant station. The length of "d" for different frequencies can be obtained by calibrating the instrument over known distances.

The number of "d's" can be obtained by first tuning an "in phase" point on to the distant station as described above, and then lowering the frequency until the next "in phase" point is tuned onto the station. If x is the number of "d's" in the original measurement, we can solve for x in the equation:—

$$\frac{x}{x-1} = \frac{\text{Longer wave length}}{\text{Shorter wave length}}$$

Both wave lengths are of course known quantities.

The above explanation of the workings of the Geodimeter is a rather inaccurate over-simplification. Anyone interested in a more precise description should consult the English reprint of a paper by E. Bergstrand in the Swedish Arkiv for Fysik, Vol. 2, No. 15, 1950, which is obtainable from Messrs. H. K. Lewis & Co. Ltd., London.

The military potentialities of this machine are interesting. Precise distance measuring has always been a slow business, but with the Geodimeter the speed and accuracy of the artillery surveying should be greatly increased, especially in areas with sparse or non-existent native trig data. (See Figure 6).

At the present time the US Army Engineer Research and Development Laboratory is running tests on the Geodimeter to see if the accuracy of measurement claimed by the manufacturer can be obtained under operational conditions. The results of this test will indicate its value as an aid to military operations.

THE MILITARY MAN IN A DEMOCRACY

AN EDITORIAL REPRINTED BY COURTESY OF
THE SATURDAY REVIEW (U.S.)*

An education has failed if it has not put into the mind of the student the incontrovertible fact that he knows very little, for a man who thinks he knows has ceased to learn. What a good education must put in a man's mind is the imperative urge to go on learning — learning not just the techniques of his job but the broader and thoughtful things that make a man really capable of the grand decisions. Your education will fail if it has not given you an insatiable urge to learn the broad things of this majestic civilization of ours—what is in the books of the past, in the newspapers of today, in art and music, and in philosophical thought. I have had the privilege of knowing many of the important military leaders of World War II and it is no coincidence that the men who have had the great battle records are men of deep interest in culture.

There may seem to be no connection between the two talents, but I assure you that there is and that the military leaders of World War II are case studies which prove the point. They prove, I think, that the commander who fails to see why a study of politics is indispensable to a study of war, or why an officer should know something about the origin and development and basic assumptions of his own society and of other societies, will also fail to grasp the importance of his own job of military leadership.

It is not enough, though, to drive on just with your intellectual education. You have been told for four years now, rightly, that you must be leaders. And the first requirement for leadership is character. This is again something that, though you may have it now, you must fight to keep and build in the years to come.

This is a time when the development in the striking power of weapons and, correspondingly, the changes in strategy and tactics are jumping forward by mutations, by leaps, and by bounds. It is your responsibility to see to it that our strategy and tactics keep pace with the dazzling development of science as applied to the development of weapons.

Let us look for a moment at the nature of this foreign policy of ours

*This is a condensation of an address by Thomas K. Finletter, Secretary of the U.S. Air Force, at the West Point Military Academy commencement exercises this summer.—Editor.

and at the high military content of it; for you must understand clearly what we are trying to do if you are to play your part in doing it.

The fundamental purpose of our foreign policy is to establish a world in which war will not exist—in which war and armaments, the things without which war is not possible, are controlled.

This keystone of our foreign policy, in a sense, has been forced upon us. In the past, the nature of armaments was such that war was a bearable institution. It is true that war often was the method whereby one nation blotted out another; and usually the concentration on war led to the eventual destruction of the victor as well as the vanquished. But within recent history—say within the last 500 years—wars have not necessarily meant the destruction of the nations which participated in them. Indeed, some nations have regarded war as a mere extension of foreign policy. They have said that war was the way to accomplish their destiny.

And then, too, we passed through a phase, largely during the colonial periods of the great powers and during the rules of the family dynasties in Europe, when war was a device for the expansion of the power of a vigorous nation. It is within the memory of all of us that well-meaning men have spoken of good wars and bad wars.

I submit that all this is no longer tenable. The advances in science, and particularly the advances during the period from 1939 to date, have been at such a fantastically rapid rate that the great powers now have weapons so devastating in their nature that it is highly likely that both sides will destroy themselves, or at least the essence of their civilization, if they should ever go into all-out conflict.

Necessity, therefore, has made it imperative that the prime objective of the foreign policy of this country be the doing-away of the institution of war as such. But more than this, such is the wish of the American people. The American nation was founded and built by people who wanted to get away from tyranny and from the constant bickerings of rival states and, protected by the peculiarly happy geographical location of this country, we have been able to do so from the birth of the nation until the beginning of World War I—with the unhappy exception of the Civil War among our own people.

So that when the United States was unwillingly driven into the two great World Wars of this century, and reluctantly took up the role of world leadership, she did so with the firm determination to create a world of peace.

It was a real American who insisted at the end of World War I that the nations should bind themselves together in an international organization

to see to it that this dreadful thing should not happen again. It was under American leadership at the end of World War II that the successor to this international organization—again with the same high ideals—was set up.

Unfortunately, the great powers of the world did not see eye-to-eye on this problem of peace. Now we are facing a time when the building up of American and free world military powers is an indispensable element of over policy. But still the keystone remains. It is still our prime purpose to create that world of peace which we sought at the end of World Wars I and II.

Our military force is being built on the hope that it will never be used. Indeed, if it has to be used, it will have proven to be a failure. We often hear the phrase "deterrent force". These are cold words and do not represent the intensity of the ideal which is behind them. What we are trying to do is to have in being at all times a force so strong and capable of such immediate application of power that an enemy seeking war would look at it and say, "This is not a good thing to take on. It will hit us too hard if we take it on, and we wouldn't be able to destroy it anyhow. I guess we had better not try it." And back of this force is the ideal that if we keep it long enough and steadily enough, the world—even the most unlikely parts of it—will see there is no go in trying to conquer by force and will come around to sanity and to an enforced foolproof system of disarmament.

The idea of having such a force is, as far as I know, unique in history. The nations in the past which believed that their military force should be used as an extension of their foreign policy—which is a euphemistic way of saying that it was a good thing to take other people's land and property and lives by force—created powerful military establishments and they created them in time of peace; but they built their forces for the offence. They intended to use their force whenever they chose to use it to destroy and rob their neighbors.

Peacefully inclined peoples—that is, peoples whose civilization had advanced to the point where they had an understanding of what was decent and good in life—also had their armed forces. But they built them in a halfhearted way. They foresaw no Der Tag on which these forces would be used for the glorification of themselves. They therefore went about their military business with reluctance and inadequately. They built forces not strong enough to defeat an enemy, but merely forces which they hoped would be strong enough to buy time under which they could mobilize.

The free nations were able to do this in the past—or at least to try

to do it—because of the nature of the weapons which existed at the time. The French, in the early part of this century, and the British with their Navy, did manage to create forces which were able to hold the German attack of 1914 and to give the French and British nations, and eventually the United States, time to mobilize their superior industrial potential.

In 1939 this formula didn't work very well. The Germans swept over all of France and were prevented from conquering Britain only by a magnificent last-ditch air battle by the British. The weapons of 1940 made obsolete this old technique of building only a delaying force back of which we would mobilize. The weapons of 1952 make any such strategy the same as national suicide. We of the free world therefore have built a new strategic concept—a concept of the deterrent force—a force which must be constantly alert, constantly ready to accept a time not of our own choosing on which to act, and constantly ready to inflict a blow so terrible that those who think about it will reach the decision I have mentioned above—namely, that it would be a very poor idea to attack us.

Perhaps these generalities may seem to you to be mere philosophy; but I have missed my whole point if I am not making clear that the nature of this general policy will have the most serious effects upon the plans which you will later be called upon to make in the preparation of your Military Establishment; for you cannot build a Military Establishment with wisdom until you have debated fully and have understood the fundamental purpose of what you are doing.

It will not be possible for you to be oblivious of the political scene. I am not suggesting that you should intervene in political decisions. For there is a Constitutional division of labour in the American system which is based on deep and wise concepts which have prevailed in free countries since the birth of freedom. But I am saying that for all the division of labour as between military, political, and economic matters, there must be an understanding and a breadth of comprehension by each of the specialists as to the roles of the other. For this is, after all, a partnership of effort in America, and as full an understanding as possible by the political men of the economic and military considerations is necessary, as it is the other way around.

This is a subtle point. It means that the military leader must have as full an understanding as possible of politics and economics and of the complicated problems of history and of national aspirations that form a part of them. It means also that there must be self-denial by each of the specialists with respect to the

primary responsibilities of the other.

The people of this country will, I believe, support the kind of military force that I have been talking of and they will support it for a very long time, provided they believe that this force is being wisely and economically built and is properly constructed with respect to the task which it is supposed to fulfil.

The military leaders of the present and of the time to come must not interfere with the other fellow's business, but they must understand his business and see to it that he understands theirs. These generalities may sound easy, but they are not, for stated in other terms what they mean is that the graduates of our great academies are going to have to be the best the country can produce. They will have to be men of the widest type of culture and, applied specifically to the next few years of your work, they will have to be men who are constantly striving to prepare themselves for these great responsibilities.

Up, Guards, and at 'em

Sir William Robertson's autobiography, *From Private to Field-Marshal* (London, 1921) describes one of the annual visits paid by King Edward VII to Aldershot as follows:

His custom was to arrive at 11:30 a.m. and leave about 4 o'clock the same day. As he did not ride, and as it was necessary that he should see as many of the troops as possible, the "scheme" had to be so arranged as to bring the troops near to places where his motor could be taken, and whence he could observe the operations. It was not an easy matter to achieve this and at the same time ensure that the various movements were properly connected and did not develop into unreal situations. One year the operations terminated with an infantry assault on the enemy's position, on the crest of which His Majesty had just arrived. Two battalions of the Guards made the assault at this point, and shortly afterwards, the "cease fire" having sounded, Grierson, the commander of the attacking side, arrived breathless near where the King stood. "Well, General," asked the King, "did you succeed in defeating the enemy?" "Sir," said, Grierson, with his usual diplomacy, "I threw into the assault all the troops at my disposal, including Your Majesty's Guards, and if they could not take the position no troops in Europe could!" "Very good, very good," answered the King, with a broad smile on his face.

WEAPONS and TACTICS

By
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The views expressed in this article are the author's, and are not necessarily those of Army Headquarters.—Editor.

The remark is often heard that man's knowledge in the Physical Sciences has out-stripped his knowledge in the Social Sciences. Some would prefix "dangerously" to the word "outstripped". We have an excellent example of this situation in the military sphere. Our ability to predict the performance of a weapon in terms of physical quantities, for example the range of a gun, from the mock-ups or drawings is far greater than our ability to predict the effect that the weapon will have on our tactics.

This suggests that we lack an understanding of the interrelation between weapons and tactics. In this article I propose to attack this problem and to give an illustration of the use of the proposed solution.

When dealing with such a question as this inter-relationship it is wise to consider the methods which have proved successful in similar tasks. This fact, coupled with our opening remarks, leads us to ask: what characterizes a science such as Physics as opposed to, let us say, Economics. We require only a brief survey of these fields to conclude that the distinguishing characteristic of Physics is the predominant use of mathematics. The British physicist, Lord Kelvin, is frequently quoted as saying "If you can measure your subject, then you are beginning to know something about it." We can generalize this by stating that the greater the use of mathematics in stating the facts of your subject the firmer is your command of the subject. (It is of interest to note that scientists implicitly recognize a hierarchy of sciences from the more mathematical ones downward. It is not uncommon for a Physicist to change his field to Chemistry or Biology, or for a Chemist to undertake work in Biology, but it is a very rare bird who moves in the opposite direction).

By implication then, our path should be towards obtaining some

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sort of a mathematical model for our field. In order to do this we must carry out two processes:

1. From the facts relating to the interplay of weapons and tactics, we must extract those factors which are fundamental.

2. Having decided on these, we must determine the correct relation that exists between them.

Happily, we can get another assist from the work in related fields. I did not intend, in comparing Physics and Economics, to give the impression that Economics is devoid of Mathematics. My choice of Economics, for a comparison, was made because Economics, like warfare, has only comparatively recently begun to use the mathematical method. Moreover, a closer affinity exists between the two subjects than is perhaps realized. This has been demonstrated by results which the mathematical method has recently achieved in this subject. Drs. von Neumann and Morganstern of the Institute of Advanced Studies, Princeton, N.J., have written a book called "The Theory of Games and Economic Behavior". In this work they have applied a mathematical theory, which von Neumann has been developing for the past 20 years to the study of Economics.

They define a strategical game as one in which the players do not have complete information about their opponents' moves. Thus poker is a strategic game, and in fact is the classical example, while chess with all the moves exhibited on a board is a non-strategic type of game. (One criterion is whether or not you could construct a machine that could not be beaten at the game). War and Business have common ground in the fact that they are both strategic enterprises.*

The fundamental role played by Information, in this Theory of Strategy, is suggestive of its importance in all phases of War.

For our mathematical model of the relationship between weapons and tactics I shall choose Information as one of the fundamental quantities. To it I shall add two others in whose justification, at this point, I feel little need be said. These two additional factors are the Physical Effect of Weapons, and the conditions which must be satisfied before a weapon can be used. The Physical Effect of a Weapon is the effect of the explosive in a shell or the effect of the bullet from a rifle.

** If I may digress into the subject of nomenclature for a moment, I would like to put forward the thought that once we have agreed that War as an operation can be described by the word strategic, we then use either it or tactics to describe our moves. We would then consider National Tactics, Theatre Tactics, Army Tactics, etc. The use of both words creates an artificial barrier between levels of operations. The manœuvres at any level are fundamentally the same, the only difference being in the size of the units involved.*

The conditions which must be fulfilled before we can use a weapon include, for example, the placing of a gun within range of a target.

For dialectical purposes and for reasons of space, I will reverse the usual procedure in evolving a formula by now stating my conclusion and then giving some of the facts which led me to it.

I feel that our tactics, at a battalion or brigade level, are always attempting to maximize the effective performance of our weapons. By this I mean the physical force actually felt by the enemy. Further this physical force is expressed by the formula:

$$\text{Effective Performance—E.P.)} = \frac{\text{(Information about the enemy)} \times \text{(Physical effect of the weapons)}}{\text{(Conditions required to be satisfied by the weapons).}}$$

I mean by this that in our tactics we attempt to exert as great a physical influence on the enemy as we can by increasing our information about the enemy and improving the effect of our weapons while making easier, or in effect lessening, the restrictions on the circumstances under which we can use our weapons.

Conversely, we attempt to keep the "E.P." of our enemy to a minimum by:

1. Denying him information;

2. Decreasing the effects of his weapons, e.g. by digging in, using minefields against his tanks and infantry, etc.; or

3. Placing him in a position where he cannot make full or efficient use of his equipment.

In defence, our tactical doctrine is to seize and hold the dominant ground, for high ground enables us to maximize the "E.P.": we can more easily observe the enemy and at the same time our occupancy prevents him from obtaining information about us. It gives certain advantages in the use of our small arms. That is, in attacking high ground the enemy is more exposed to our fire than if he were attacking us on level ground. By having to expose himself he satisfies the requirements imposed on us by the flat trajectory of our weapons.

In the attack, we lay down smoke to prevent the enemy from getting information, or we attempt to achieve the same effect with our fire section which, by means of its fire, will keep the enemy's head down. In choosing routes of advance we use every possible fold of ground which will deny the enemy both information and the use of his flat trajectory weapons. We can further decrease his effective performance by using AFVs (assuming that his anti-tank armament is weak). This comes under the heading of not allowing

him to satisfy the requirements of his weapons, for it goes without saying that the efficient use of small arms fire requires the absence of armour.

Our interest in this formula is purely a pragmatic one, and the formula must stand or fall on the basis of its success or failure in describing, to the reader's satisfaction, the above situations, plus the other possible ones.

However, in anticipated defence I should like to make two points:

1. The familiar rule for falling bodies, $s = \frac{1}{2} g t^2$, while describing the event with sufficient accuracy for most practical needs, is incorrect if we wish to bring in the effects of air resistance. Similarly, the above formula should only be regarded as a first, though I think close, approximation to the truth.

2. The major weakness of the formula is that we have not stated units in which to measure the quantities. This can only be done after much more detailed study of engagements is carried out and might properly fall within the province of CAORE. This lack of units does not prevent us from using the formula in a qualitative manner, as I have done above and will do in the illustration below, to establish general results.

Let us imagine that in 1960 the following equipment is either in the hands of the troops or exists in prototype, and that we have intelligence that a similar situation prevails on the other side of the "fence":

1. *Heavy Mortar:* 15,000 yards range and a 50% zone of 200 yards by 100 yards at 5,000 yards.

2. *Field Gun:* 15,000 yards range with a 50% zone of 200 yards by 50 yards at 15,000 yards.

3. *Guided Missile No. 1:* 10,000 yards to 100,000 yards range with an average radial error of 200 yards at 50,000 yards.

4. *Guided Missile No. 2:* 25 miles to 500 miles range with an average radial error of 1,000 yards at 250 miles.

5. *Anti-missile Missile:* 50,000 yards slant range, equipped with homing device such as to ensure a kill 25% of the time.

6. *Ammunition:* All the above, including the mortar, to be provided with atomic warheads.

7. *Counter-Battery Radar*, equipped with trajectory computers.

8. *Production:* We will suppose that the production of atomic explosives is sufficient for both sides to be able to afford an expenditure of one mortar bomb or shell whenever a 30% chance exists of destroying a unit of company size.

Now let us fit this equipment into our formula and see what conclusions can be deduced. The effect of our weapons has increased by whole

orders of magnitude. Therefore, for a given amount of information and a given set of conditions the "E.P." will be greatly magnified. Further, the information term, due to the use of our radar, will increase whenever the enemy fires. These facts indicate that firing will be far less frequent but far more deadly.*

The vital fact, with respect to our tactics, that emerges is the increased importance of information. In mathematical terms, every unit of information is multiplied by a large coefficient, which is the effect of the weapons. The role played by information is analogous to the push-button control that exists on large coast defence guns. A small amount of pressure on the button controls a large power source and produces a large amount of force to move the gun. In our case, a small amount of information combined with the force of the weapon produces decisive effect on the enemy. Thus, whereas nowadays the fact that the enemy has located our battalion or company defensive area is not grounds for movement, it will become so in the future (under the supposition that the above weapons exist). The result will be a form of warfare analogous to that fought by the United States Army on the Western Plains during the 'seventies and 'eighties. (The study of these campaigns, conducted by a professional army which had been nurtured in the first "modern" war, against a skillful enemy, has been to my mind a neglected branch of Military History). There we had a very fluid form of warfare in which mobile and fairly self-contained columns operated against each other from areas of strength. Under the conditions which I have postulated we will still have areas of strength. However, they will be made so, not by concrete and steel emplacements, but rather by control of information. As our formula shows, if we succeed in denying this term we will have greatly reduced his effective performance. This control of information can be carried out by means of radar screens, signal monitoring and patrolling, all on a scale far beyond what we do today.

Small engagements will be at least as important as they are now. With the restriction on the expenditure of atomic ammunition that we have supposed, it would be inevitable for units of platoon size to be constantly probing to locate targets for this ammunition. The importance of these activities will lead in all probability to a greater emphasis on the role to be played by these smaller units.

In conclusion: I have envisaged these weapons as being in existence

The detection of radar by electronic devices will be a further consideration. However, with narrow beam sets and proper siting, its importance may be diminished.

THE PSYCHOLOGY OF THE RUSSIAN SOLDIER

DR. W. KRETSHCMER IN "ALLGEMEINE SCHWEIZERISCHE MILITARZEITSCHRIFT" (SWITZERLAND)*

To measure the military power of a country, it is not enough to know the strength of its economic and technical reserves, even though they are important in terms of modern warfare. Rather, the military power of a country must be based on a careful consideration of the ideas, emotions, and interests of the individuals of that country.

In order to make an objective study of the present-day Russian people, two points must be taken into consideration:

1. The Russians are a gifted, adaptable, culture-loving people, open to, and capable of, every emotion, and bound to the peoples of the West by a number of ties, among which Christianity is probably the most important.

2. The Russian people must not be regarded as one because of their system of government.

If one starts his study with these points in mind, it is possible to discover many interesting facts about the Russian people.

In spite of her increasing industrialization, the Soviet Union is still, to a large extent, an argricultural country. In fact, throughout the broad, sparsely settled agrarian districts, despite the decentralization of labour, the almost Middle-Ages-like way of life of the peasant class remains practically unchanged. It is only in the industrial areas and the

*This digest is reprinted from the Military Review (U.S.).—Editor.

WEAPONS AND TACTICS

(Continued from preceding page)

or at a late stage of development in 1960. When we consider the weapons that are in those phases today and extrapolate over a period of five years, the equipment mentioned becomes probable rather than possible. This means we should be laying the groundwork now in order to adopt tactics suitable to the use of this equipment. I suggest that the formula given above, or a refined version, offers a good start in that study.

larger cities that the new system has been able to break the majority of the people away from their family and religious traditions.

The peasant class is the prolific source of manpower for all vocations, as well as the Soviet Army, and the latter includes officers and enlisted personnel alike. All talented and active persons are absorbed by the many professional schools and, according to their talents and political "suitability", guided into the higher positions. They occupy the more important posts of the country, both from the technical and organizational standpoint, in the educational, industrial, and military fields.

Even though Soviet teachers and university authorities repeatedly assured me that students from the rural districts display great mental alertness, eagerness, and capacity for learning, their training is oversimplified by providing specialization in only one field instead of attempting to give them a well-rounded background.

This one-sided specialization also is furthered by the fact that a great deal of political control and bureaucratic entanglement prevent the various vocational groups from coming into contact with one another, for contact and exchange of ideas is permitted only within the same fields. The effects of this are almost negligible in the villages, but they increase proportionately according to the importance and the technology of the particular fields of endeavour.

As we have mentioned, the Russian peasantry, when not in contact with cities, industries, or the main routes of travel, occupies an almost Middle-Ages type of civilization. However, this is not always a disadvantage, as evidenced many times during the last war. In fact, this factor was one of the main reasons for the tenacity of the Russians and their demonstrated superiority in improvisation, fieldcraft, and adaptability to terrain and climatic conditions.

Improvisation a Common Trait

The Russian peasant is able, on the technical basis of a knife and an axe, to build houses, wagons, sleds, and other items in a completely self-sufficient manner. It follows, then, that under more modern living conditions, he is able to devise skillful technical improvisations. For this reason, it is easy to understand why the Soviet Union has suddenly imposed a modern technical civilization on the peasant class. This strange gap between the primitive peasant culture and the highly specialized industrialization permits us to visualize the great potential of the Soviet Union.

Natural Insight of the Peasant

There also is another factor which should be included in this discussion,

and that can be called "natural insight". The Russian peasant has a a definite ability in the handling of plants and animals, in travelling over and orienting himself in various types of terrain, and in processing and turning to profit the raw products of nature. Directly connected with this factor is the Russian's intuition with regard to mankind, especially in the case of the Russians living in isolated areas. Many Western Europeans have been put to shame by the knowledge of mankind possessed by the simple Russian peasant.

Organization of the Community

From this, we can see that the pure and simple human qualities, without reference to rank or talents, stand in the foreground. Functions in the village community follow naturally from the capabilities of the inhabitants, and require no special organization. It is a sort of natural communism which is based on the free recognition of the human individual. Obviously, it is bound up with the simple peasant social order. *As soon as it begins to follow technical, industrial, political, and military aims, it becomes a fearful compelling force.*

The manner of life of the primitive peasant is strongly intuitive and, therefore, irregular. Clocks are unknown, for the plants grow without clocks. The Western European immediately evaluates this attitude negatively, as a lack of orderliness, and forgets, in so doing, that this irrational inexactness is simply the basis of the prevailing harmonious living. Thus, it is understandable how the forced adaptation to a mechanical system of labor and military service is a principal source of discontentment of the present-day Russian.

Gaps in the Military Field

What consequences follow from these cultural bases of the Soviet's military situation? Are we to assume that the basic form of Soviet combat ability is based on a Middle-Ages type of warfare, that is, the sword and pike and the simply organized fighting force? There is no doubt that the Russian would have no difficulty in fighting in this manner. However, the modern form of armies has obtained a footing and prevails throughout the Soviet armed forces. Therefore, the same gap that exists between the primitive peasant civilization and extreme specialization is found also in the military field. However, we find here not only great possibilities for discovery and adaptation, but also factors of relative weakness which will be of special interest to the professional military of the Western powers.

Skilled Labor versus Production

We shall study the problem first from the standpoint of industry. No one has any doubts that economic and

industrial potentials are decisive factors in modern warfare. The complexity of combat means, especially in the field of air and naval warfare, requires specialized industries, scientific laboratories, factories, and machine tools. However, this specialized technological setup cannot function efficiently if any factor is lacking. War production is not only a question of material reserves; it is also a question of skilled labor. The precision mechanical industry is, therefore, an important psychological problem connected with the natural talent and upbringing of the individual. The Western peoples have solved this problem through centuries of skilled craftmanship. Can the Soviet Union, in about the space of a generation, catch up with this development? That is the decisive question. To what extent the lead of the Western nations in the precision mechanical industry has been cut down is unknown, because we do not have accurate data on which to base our comparison. However, it is certain that the Soviet Army was far below the other Western nations in the use of specialized weapons of war during World War II. Nevertheless, it must be borne in mind that this inferiority, under certain conditions, was compensated for by the fact that in many types of terrain, sleighs, horses, and other primitive means of mobility were more usable than modern vehicles. With the airplane, one is able, in principle, to fly anywhere, but it is impossible to travel everywhere in the Soviet Union with a motorized army.

A Problem to Solve

The serving and employment of modern combat means also are matters which involve the soldier himself and must be considered. In this connection, the Soviet Army has an interesting psychological problem to solve. As a result of his natural intuition, the Russian soldier is able to operate vehicles and weapons as long as he is in direct contact with their controls. That is, he has no difficulty in operating a motorcycle, or a small vehicle, airplane, or motorboat. However, as soon as this contact is broken, as in the case of large airplanes, ships, or tanks, and he is required to fly or travel with the help of instruments, this new psychological problem comes into evidence. To overcome this problem, the Soviets have constructed simple weapons for initial training, and then through progressive instruction have attempted to achieve a high standard of training. Incidentally, the Soviet's machine pistols and machine guns were simple but efficient weapons, and almost equal to our own more complex weapons.

Is Specialization Possible?

To what extent the Soviet Army will be able to specialize its forces cannot be stated with any degree of accuracy at this time. However, it probably will attempt to train a small number of troops and technical personnel to a degree equalling the Western nations. At the present time, it does not seem likely that the Soviet Union will be able to achieve specialization, throughout the entire Army, comparable with the Western nations, because of the cultural and social structure of the country.

Adaptability to Climate and Terrain

On the other hand, the natural insight of the Russian soldier gives him an advantage in other ways. He is able to adapt himself to terrain and climatic conditions. Thus, the Russian soldier easily does without the comforts of civilization, and can endure many physical discomforts. His physical vigour revealed itself clearly, during the last war, in his more rapid and definite recovery from wounds, as compared with the German soldier. As regards food and clothing, his requirements are amazingly small. Thus, the Russian soldier, on the average, is affected less by the terrain and weather than is the soldier of the Western nations.

Because he has an intimate understanding of nature, the Russian soldier easily constructs earthworks, digs trenches, improvises shelters, and camouflages positions. He is able to move over the terrain more skillfully and orient himself easier, than the soldier of the Western nations. He has unusual ability in detecting the presence of the enemy. When we were patrolling the lonely forests, in operations against partisans, it was always the Russian volunteers accompanying us who detected the enemy first and opened fire on him.

Fighting Qualities

How is the Russian as a fighter? To begin with, we must correct the erroneous impression that the Russian is chiefly a mass-action fighter. The Germans believed this during the last war, and any country that makes the same mistake may suffer the same fate. There is no doubt that the Russian, more than the western, is able to develop fighting fervour typical of the mass-action fighter. However, more important is the value of the Russian as an individual fighter.

It is obvious that this quality is developed least in the mass army, and most in a guerrilla force. The partisan constitutes the basic type of Russian soldier. To a far greater extent than an official soldier of the Soviet Army, he is the bearer of the national political concepts, which are, usually, directed against a regime which is felt to be foreign. Thus, there were partisans not only against

the Czarist regime, but also against the Bolsheviks and the Germans. As soon as the Russian soldier is able to free himself from the mechanism of the Army, he is a skillful, versatile, and intelligent fighter. The German Army paid a heavy price for learning this too late.

Soviet Combat Methods

The combat methods of the Soviet Army must be understood from the point of view of their political background and the command practices arising from it. Political supervision has been so pronounced that the officers (and the higher their rank the more this is true) practically become the puppets of the political forces of the Nation, have no initiative of their own, and, thus, sink to the state of blind tools of the supreme command.

During the last war, the various arms possessed a sharply vertical command structure, that is to say, they were exclusively under the orders of their own commanders and were not able, therefore, to subordinate themselves to one another. Obviously, with such a system, co-operation and co-ordination between the various arms was extremely difficult to achieve. In addition, whenever liaison between the various arms was interrupted, the command structure disintegrated, with a resultant influence on the morale of the fighting troops.

The last war brought us no end of proof that, in their hearts, the Russian people hold their Government in abhorrence. The Russian soldier fights with conviction only for the defence of his native soil against an invader, or for liberation from a political system that is strange to him.

All political and military orientation with regard to the Soviet Union must consider her greatest weaknesses. Obviously, these do not lie in the numbers of her soldiers nor in the strength of her industries, but exclusively in the internal political and ideological concepts of communism. Therefore, it seems much more important to obtain an accurate picture of the psychological situation and base an effective policy on it, rather than to count tanks and calculate the yearly output of factories.

Conclusion

The Russian soldier is no better and no worse than our own. His strength comes from the fact that he fights more fiercely when he is defending the fatherland. By attempting to understand the movitations of the Russian soldier, we will be in a better position to cope with him, in the event of a future war.

COMBINED OPERATIONS—PAST AND PRESENT

Rear Admiral H. E. Horan in "The Navy" (Great Britain)*

Combined operations in the last war played a highly important part in the strategy of the allies which brought about the final overthrow of the Axis powers.

There is nothing new in the use of combined operations. We find references to them in the Bible. The Greeks and Romans used them extensively, and it was a combined operation that started the conquest of England in A. D. 1066.

In the history of Britain perhaps the most interesting period to study from the point of view of amphibious expeditions was the latter half of the eighteenth and the beginning of the nineteenth century. Then, the government realized to the full the value of the command of the seas and used it to attack its enemies where they were the weakest. The continental strategists never seemed capable of seeing the value of this form of warfare or, if and when they did embark on it, of bringing the operations they undertook to a successful conclusion.

In World War I, the major combined operation undertaken was that against the Dardanelles. Here was a full-scale landing in the face of opposition. The technique employed was roughly the same as that used in the Crimea in 1855, despite the fact that the power of the defence had, in the intervening years, greatly increased owing to the efficiency of small-arms fire. At Cape Helles, where a cold-blooded frontal assault took place in broad daylight, a landing was effected only at extremely heavy cost. On the other hand, the landings carried out in the dark at other points on the peninsula were effected with comparatively small loss. This was because the principles of mobility and surprise were used to the full, which, of course, are always in the hands of the attackers when they hold the command of the seas in the area of operations.

Little Interest in Combined Operations

The period between the wars showed little interest being taken in the study of combined operations beyond a yearly paper exercise in which the three staff colleges took

*This digest is reprinted from the Military Review (U.S.).—Editor.

part. As the result of the deliberations during these yearly events, a manual was gradually built up which by 1938 had reached its second edition. However, owing to the lack of money for the armed forces, no definite steps were taken to provide the special craft or equipment which were considered necessary to make an opposed landing a practicable proposition. Despite this fact, a memorandum by the Director of the Royal Naval Staff College, written in 1937, pointed out that, to a maritime power like Great Britain, it was most important that the power conferred by the command of the sea should be taken account of in Imperial strategy. Shortly after this was written, the British China Squadron saw, to its surprise, that the Japanese had studied the matter and actually used special ships and craft in their operations against the Chinese. The ships were of about 10,000 tons and launched specially constructed assault craft over chutes fitted in the stern.

Studying the Problem

In 1938, the Chiefs of Staff set up the Inter-Services Training and Development Centre near Portsmouth, and this establishment proceeded to draw up specifications for ships and craft which would be required to carry out an assault in the face of modern beach defences. Shortage of money still prevented the building of prototypes so at the beginning of the war there were only about a dozen landing craft built.

After Dunkerque, the Prime Minister appointed Admiral of the Fleet Sir Roger Keyes as Director of Combined Operations. With his experience of the Dardanelles campaign and the growing interest shown by the Service Departments, developments in this form of warfare began to take place. Many of the designs of ships and craft, until now on paper, were proceeded with and thus when he relinquished his appointment, in October 1941, to Lord Louis Mountbatten, a small assault squadron was in being and training was being carried out energetically at the combined training establishments which had been set up in the United Kingdom and the Middle East.

Plans for the Invasion

Shortly after Lord Mountbatten's appointment, the question of the re-entry into the Continent came to the fore. As Chief of Combined Operations, it devolved on him and his organization at Combined Operations Headquarters to start from scratch and plan for the largest opposed landing ever undertaken in the history of the world. From the first, the Chief of Combined Operations decided that the first and most important part of his duty was to

ensure that the training of both the naval and army personnel destined for the assault should be of the highest order. The question of the technique for the assault also had to be developed. There was little to go on, so at first the operations undertaken were in the nature of raids. The better known of these were carried out at Vaagso (December 1941), Bruneval (February 1942), and St. Nazaire (March 1942), all of which were successful operations. The outstanding lessons were as follows:

Vaagso: The value of naval support fire and smoke in the assault.

Bruneval: The success of incorporating airborne troops.

St. Nazaire: How success attended an operation when the principles of mobility and surprise were exploited to the full.

These small-scale operations were followed by a much more ambitious operation against Dieppe (August 1942). Here, it was clearly proved that to make an assault on the German-occupied coast of France successful, the question of intense artillery fire for the assaulting troops was essential and further that tank obstacles on the beach must be dealt with.

As the study of the invasion of France at Combined Operations Headquarters progressed, it became perfectly clear that not only had the assault, with the subsequent "build-up," to be planned, but the whole south coast of England had to be prepared as a "springboard" from which the operations could be undertaken. The ports, little used owing to the activities of the *Luftwaffe*, had to be brought into operation again. To add to the facilities in the latter, special slipways, known as "hard", had to be designed and constructed so that the special ships and craft designed for beaching could be used to speed the "build-up". In all, more than 170 of these "hards" were laid down and used.

Logistics Problems

In the paper exercises that had taken place before the war, it was always axiomatic that the capture of a fully developed port within the first few days of landing was essential to keep the invading army supplied. This could not be guaranteed. So it was decided to build artificial harbours off the French coast (known as *mulberries*) where ships and craft could discharge across the beaches in any weather. This was accomplished by sinking specially constructed concrete caissons in deep water to form a breakwater. Actually, the harbour thus constructed off the British beach at Arromanches was roughly the size of that enclosed by the breakwaters at Dover.

In addition to the armoured landing

craft designed to take the infantry and small vehicles ashore, special designs of ships had to be prepared and the vessels constructed. The most noteworthy of these were the landing ship, tank (LST), and the landing ship, dock (LSD). The former could take a load of 25 large tanks and discharge them directly onto the beach. It is on record that without these ships the landings would never have been successful. The LSD was a brilliant piece of work. It could carry two fully-loaded landing craft, tank (LCT), and by trimming down could float them out, when they could proceed ashore under their own power.

It has been mentioned before that the outstanding lesson of Dieppe was the necessity for intense supporting fire for the assaulting troops. To provide this, two special types of craft were designed by Combined Operations Headquarters. They were the landing craft, rocket (LC(R)), and the landing craft, gun (LC(G)). LCT hulls were used for both designs. The LC(R) was capable of firing 1,100 30-pound high explosive rockets in rippling salvos in 16 seconds. The destructive effect of each rocket was approximately equivalent to that of a 9.2-inch shell.

The LC(G) carried two 4.7-inch guns and its role was to proceed close inshore and engage strong points which might be interfering with the advancing troops or tanks.

Finally, for the assault, it was necessary to have a ship which could accommodate the assault commanders and their staffs, and thus enable them to adjust their plans and transmit orders to the forces on shore. These ships known as landing ship, headquarters (AGC), were converted medium-size liners and had on board, in addition to the staffs, a complete communications organization of all three services.

Only the more important items that produced success in combined operations have been enumerated. When Lord Mountbatten took over in October 1941, little in the way of material was available, training and technique were elementary, and the serious consideration of the re-entry into the Continent had only recently begun. Yet, in June 1944, the re-entry into the Continent was successfully accomplished. Had the subject of combined operations been given, before the war, the thought that is its due from a maritime power, perhaps the war would have been shortened considerably. Now, not only have we all the hard-earned experience of the last war behind us, but there is also a special staff of officers of all three services working under the Chief of Amphibious Warfare.

TECHNICAL STAFF OFFICERS

By
BRIGADIER A. E. WRINCH, CBE, CD, DEPUTY QUARTERMASTER GENERAL (DESIGN AND DEVELOPMENT), ARMY HEADQUARTERS, OTTAWA

The following review was written by Brigadier Wrinch as a result of a survey made by the Committee on Careers for Technical Officers, of which he was Chairman. It should be emphasized that this review deals with only one phase of this army Committee's report.—Editor.

INTRODUCTION

The Technical Staff Officer, or TSO, has been considered to be a member of the under-privileged classes in the army for many years. This impression, fortunately, is quite wrong—the TSO today is doing very well and it is worthwhile for other officers to know about him: his qualifications, employment, and possibilities for advancement. It is quite possible that many more officers would choose to become TSOs if they knew a little more about these "strange people".

DEFINITION

A TSO may be defined as an officer who has user experience with, and an interest in, equipment; with technical and some staff training; who acts primarily as a liaison link between the user and designer of equipment. All four components of his experience and education are important—user experience, interest, technical training, and staff training—the four combined in one officer give us the ideal TSO. Of course, the other attributes that one looks for in an officer must also be present. Each component shall be examined in turn later in this paper to see how the prospective TSO should qualify, but let us first establish the types of employment that should be assigned to a TSO. In doing so we shall follow the normal stages through which a piece of equipment passes before being classified as standard.

EMPLOYMENT

The Idea

Someone has an idea for a piece of new equipment. He may be in any branch or unit of the service, or even outside the service in industry or elsewhere. Wherever he, is our friend thinks of a piece of new equipment that should be of value to the army. Alternatively, the idea may originate in the form of a statement of need for new equipment rather than the suggestion just mentioned. In any event, the idea must be evaluated from the point of view of need and practicability. At this

stage, an officer is required who knows, or can ascertain, the possibilities of developing and producing this new equipment. He must work with the user, appreciating his needs, so that between them they may produce a reasonable proposal. Here, then, is one role for a TSO. The Military Characteristics, or MCs, are written to set forth what the equipment is to do, under what conditions it is to operate, and to place any appropriate limitations on its design. The TSO acts as an advisor to the user at this stage; the two produce the MCs as a joint effort.

Design

After the MCs are approved, the project goes to the technical directorate concerned and thence to the design agency. During design a great deal of liaison will be required between the designer on the one hand, and research, production, inspection and/or the user on the other. This liaison is generally the responsibility of the TSO, as also is guiding the designer in his work and supervision of the writing of detailed specifications. A further role for a limited number of TSOs at this stage is employment with Defence Research Board where they serve in the main in advisory and liaison capacities to ensure that the soldier's needs are known and appreciated by the scientists.

Engineering Tests

Design should result in the fabrication of a lab model of the equipment, or possibly a prototype. This must be tested to determine its suitability from an engineering point of view. The supervision of these tests is the responsibility of the TSO who may possibly prepare and carry out the tests.

User and Troop Trials

Equipment which has passed engineering tests is turned over to the users for their opinion. The responsibility for these trials lies, of course, with the user. The equipment must do what he wants in a way acceptable to him. It must also be capable of being stored and maintained. Other TSOs enter the picture at this stage —TSOs who should be with the users, possibly at the corps directorate and in the corps school. They would play a leading part in preparing and assessing the trials. TSOs who had been active during design would resume the role of advisors and would assist at this time.

During production, particularly in the early stages, TSOs are fully employed assisting both the manufacturer and the inspection agency. Some TSOs are employed with the Department of Defence Production and Inspection Services for this purpose. At the same time, TSOs in the development directorates and establish-

ments carry out the service responsibility of design authority.

After adoption of new and complex equipment, it may be necessary for officers with technical training to assist during the introduction of the equipment to service use. It may also be of value to have technically-trained officers in formations where they can watch equipment that is in use and suggest modifications, alterations to procedures, etc. Here again are jobs for TSOs.

ABC standardization activities take place during the whole process just described. These involve continuous liaison with USA and UK, and, of course, with the other Canadian services. Much of this work devolves upon the TSOs who must be able to take their places at the international gatherings concerned.

It can easily be seen that the TSO must be a versatile fellow and very few officers will be found who are suitably qualified to cover the whole field. This must be realized and allowed for in planning TSOs' careers. Some will gravitate normally toward the user end of the scale while others will tend toward the design end. The user type should probably do one tour as a TSO to two or three as regimental or (ordinary) staff officers while with those who are more technically inclined, the ratio would normally be reversed.

For TSOs to be employed on the work that has been indicated, we should find them in many places. Included should be:

Army Headquarters; in DMT, DMI, DWD and corps and development directorates.

Development establishments; in a supervisory capacity rather than on detailed design.

Miscellaneous establishments; such as CAORE, AA Comd, CASC, CJATC, 25 COD, Fort Churchill, etc.

Corps schools.

Liaison duties in UK and USA.

Field formations.

In addition, TSOs must periodically serve with units and on other staff appointments in order that they may keep their user knowledge current and maintain touch with the needs of the users. This user aspect of their knowledge and experience is of the greatest importance.

Qualifications

So much for employment; now how do we propose to train the TSO? For a lead, we should go back to the definition and its four components: user experience, interest, technical training, and some staff training. Let us examine each in turn.

User Experience

This component requires that service with one of the user arms shall be a prerequisite qualification of the

TSO. Thus TSOs should be drawn in the main from RCAC, RCA, and RCIC while limited numbers should come from such corps as RCE, RC Sigs, RCASC, RCOC and RCEME. At the present time, the situation is just the reverse of the ideal, with the three principal user arms supplying a small percentage of TSOs and RCAC and RCIC supplying almost none. Surely these corps should take a more active interest in the equipment so vital to their existence in the field! Commanding Officers, particularly in RCAC and RCIC, should be on the lookout for potential technical staff officers among their subalterns and should encourage them to apply for the technical staff course.

Interest

Training generally should promote this important component: interest in equipment. There is still too much of a tendency to believe that equipment simply arrives and that it will either work or that some technical officer or warrant officer will come along and make it work. The interest should go a bit deeper; it should include a desire on the part of every user to know the real capabilities and limitations of his equipment, how it should be used for best results, how it should be cared for, and—a most important point—how it could be improved. This is not intended to suggest that every officer should carry a wrench and pair of pliers or be ready at all times to do a major overhaul or modification; it is intended to stress the fact that officers of all corps should know their equipment.

Technical Training

We should first dispel a mistaken belief: TSOs are not highly technical specialists. They are Technical Staff Officers in the true meaning of the phrase and as such are analogous to General, A, and Q staff officers. The specialists are an entirely separate group beyond the scope of this paper. The technical training required of a TSO can be obtained in any one of a number of ways; the alternatives include:

Graduation from the Military College of Science—and remember that only two years in an engineering or science course at service college or university are required as an academic standard for entrance.

Graduation from a technical army course in UK or USA,

Graduation from a technical course at a university or service college; or

Successful private study in the technical field.

There are so many possibilities in this regard that it is impossible, and undesirable, to lay down hard and fast rules. DGAP considers each case on its merits and posts officers to

TSO appointments on the basis of their suitability for the employment.

Staff Training

TSOs are staff officers in the technical field. As such they should be staff trained. Limited staff training, adequate for the work, is included in the course at the Military College of Science. Thus TSOs should have attended either the Military College of Science, the Staff College, or, in some selected cases, both.

CAREER POSSIBILITIES

We have seen that TSOs are, or should be, employed in wide-spread fields both within the army and in other agencies of government. Thus large numbers—in excess of 300—are required. A comparison of the TSO rank structure with that applying to other staff officers shows that the two are about equal. However, one must remember that a well-trained TSO can serve equally well in many appointments outside of the technical field while the non-technical staff officer can not serve as well in the technical field. It is obvious, therefore, that the possibilities of being assured of a good career are improved, on the average, if an officer is capable of serving effectively as a TSO. Furthermore, the need for the TSO to keep up his user knowledge on the staff and/or regimentally ensures that he must be available for those other types of employment.

Officers would be well advised to keep these few thoughts in mind. They should remember particularly that:

The "T" stands for "technical" — in the broadest sense; not restrictive in his employment.

The "S" stands for "staff" — again in the broadest sense; any part of the staff.

The "O" stands for "opportunity" — better than in any other appointment!

It's an Old Army Custom

Most older Army men will remember when the exchange of salutes between men in uniform was normally accompanied by an exchange of greetings. The salute is itself a form of greeting between members of the profession of arms. Accompanying the salute with a verbal salutation strengthens and personalizes the salute, makes it less formal, and tends to promote pride of service.

One of the most effective ways to revive this custom, which has fallen into considerable disuse in the service, is for all officers to take the lead in practising it. The senior should not be reluctant to speak first. He can thus set the pace for the revival of a practice which will go far to raise esprit de corps.—*Officers' Call (U.S.).*

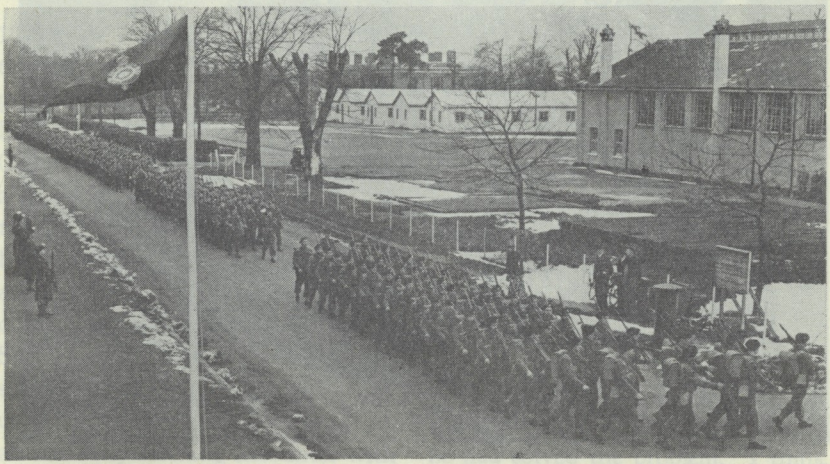
THE TOWER OF LONDON REGIMENT

A Release by the United Kingdom Information Office, Ottawa

The 1st Battalion, The Royal Fusiliers, sailed for Korea in June, less than three months after they returned to England from Germany after more than 30 years' continuous service overseas.

This is not a record and it is not suggested that the individual soldiers have themselves been 30 years away from home. But it is an indication of the world-wide commitments of the British Army which are no post-war development. These wide responsibilities are traditional and have long been accepted as an essential part of the life of all ranks of the Army.

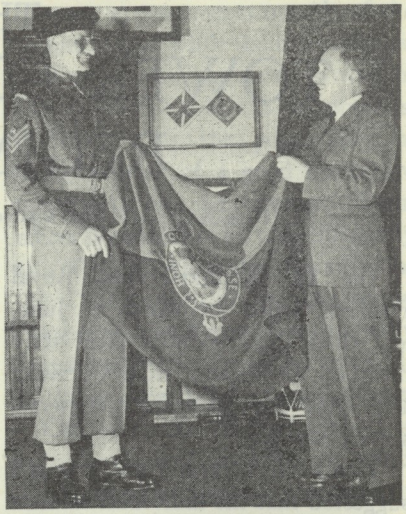
The Royal Fusiliers quickly give the impression that soldiering is a family affair. Major P. E. W. Rolfe, M.B.E., Quartermaster of the Depot of the Regiment, which is in the Tower of London, has a son who is now a recruit in the Regiment.



The 1st Battalion, The Royal Fusiliers, march to barracks in England on their return from Germany after 30 years overseas.

Young Rolfe sailed to Korea in June. Sgt. S. C. Perrior is a son of the eldest of eight sons in the Regiment and his grandfather joined in 1862. Second-Lieutenants David and John Connington joined the Royal Fusiliers as National Service men. Both were Commissioned and both have now decided to stay on in the Army as regular soldiers and both are with the First Battalion.

There are a number of meanings to the term "old soldier", but the very best of those meanings could be applied to the First Battalion's Colour-



Top: Colour Sergeant Finch hands over to Major Charles Cutting, MBE, the flag of the Royal Fusiliers which he and some other Royal Fusiliers took to Korea when they were sent as reinforcements to the Glosters. A veteran of the Fusiliers, Major Cutting is curator of the Regimental Museum. *Bottom:* Sgt. S. C. Perrior, 1st Royal Fusiliers, greeted by Yeoman Warder A. Whyte. The two were friends when Sgt. Perrior was at the Royal Fusilier depot in the Tower of London.

Sergeant Finch. He was sent to Korea as a reinforcement to the British battalions there and he took with him one of the flags of his beloved Royal Fusiliers. He took the flag without prior consultation with its legal custodian. When he found himself posted to the Gloucestershire Regiment with about 100 other Royal Fusiliers, they fought with the rest in the gallant action in 1951 which led to world fame. And as they fought as a company of a Gloucestershire battalion, they carried their own Royal Fusilier flag back and forth across the 38th Parallel just to keep in mind their parent Regiment. Now, Colour-Sergeant Finch has volunteered to go to Korea again with his own First Battalion and he will have no need of a personal flag.

When the battalion joins the Commonwealth Division they may find old friends there. Affiliated regiments are the 6th Infantry Battalion, the Royal Melbourne Regiment and the Canadian Fusiliers (Machine Guns) of London, Ontario.

Similar tie-ups are usual throughout the Commonwealth forces. The Royal Fusiliers were raised in the Tower of London in 1685 by George Legge, Earl of Dartmouth. One of his successors, Major D. A. K. Legge, is still with the 1st Battalion.

Sterling Qualities

In *The Wooden Horse* (London, 1949) Eric Williams vividly described the only successful escape of British prisoners from Stalag Luft III. The British film currently showing in Canada is almost as enthralling, although it devotes considerably less time to the adventures faced by Peter and John after they had escaped through their tunnel. It concludes with them safe in neutral Sweden, whereas the book provided something of an anti-climax by describing their return to England by air and early morning encounter with a disinterested major whose sleep had been curtailed.

"You should have been given English money before you left Sweden," the major said.

"We've only got Swedish money."

"We've no machinery for giving you English money here." The major was getting flustered again.

There was a short silence. The intelligence captain spoke.

"Do you have a cheque book?"

"Don't be bloody silly — we've just come from a prison camp!"

The captain turned to the major; he had solved the problem. "I think we can trust them, sir. After all, they *are* officers."

SOLDIERING IN THE SIXTIES

By
CAPTAIN F. L. JONES (RETIRED), LATE THE IRISH REGIMENT OF CANADA*

The Standing Orders of the Royal Canadian Rifles, issued in Montreal in 1861, gives an interesting insight into the conditions of service in a British unit stationed in Canada one hundred years ago. Based on the Queen's Regulations and Customs of the Service, the Standing Orders of the Regiment were drawn up for the "guidance of officers and all concerned, and for facilitating, especially at outposts, of a uniform mode of carrying on the duty."

The Royal Canadian Rifles were raised in 1840 for garrison duty in Canada. It was the intention of the Imperial authorities in London that the Regiment would remain permanently in the "Colony" or the 'North American Station", as Canada is termed in the Orders. The Regiment was composed of old soldiers who volunteered into it from other units. The War Office felt that old soldiers could resist the temptation to desert across the border into the U.S.A. better than young men. This temptation must have been particularly strong during the American Civil War when a bounty of $300 was offered for every recruit in the Union Armies.

Garrisons were formed at Kingston, Montreal and Quebec. In 1857, a detachment of 100 all ranks was sent to Fort Garry and remained there until 1861 at the request of the Hudson's Bay Company. The cost of this expedition and the expense of maintaining the troops in the Far West was borne by the Company who re-imbursed the Treasury in London for their services. After Confederation, the Canadian Government assumed the responsibility for the defence of the newly-created Dominion and the Royal Canadian Rifles were disbanded in 1870 after a short-lived existence of thirty years.

The Royal Canadian Rifles were dressed in the familiar dark green of a rifle regiment, with black leather accoutrements. The Regiment was armed with the muzzle-loading, per-

**In a letter to the Editor about this article, Captain Jones (now a resident of Hamilton, Ontario) writes: "When my unit was stationed near Tunbridge Wells [England] in 1943, I found a neatly-bound volume entitled 'Standing Orders of the Royal Canadian Rifles'. It cost me a shilling. Perhaps these extracts from the 'Orders' will interest your readers."—Editor.*

cussion cap Enfield rifle, calibre .57, described in the Orders as a valuable and delicate arm. The section devoted to "The Rifle and How to Take Care of It" should warm the hearts of present-day officers and NCO's engaged in small arms training. Here are some extracts:

"(a) All regiments being supplied with the rifle musket, pattern 1853, it becomes of the greatest importance to impress upon the soldier the necessity of preserving his arms at all times in the highest condition.

"(b) The value of the present arm over the smooth bored percussion musket can hardly be over-rated, but as the value depends upon the straightness and truth of the bore, unless every care be taken to make the young soldiers regard it as a valuable and delicate arm, the results will not come up to the real power of the weapon.

"(c) The soldier is on no account whatever to use his musket for carrying any weight, or for any purpose for which it is not intended as the barrel is bent very easily. Though injury be slight, it may be sufficient to destroy the accuracy of its shooting.

"(d) Great care should be taken in skirmishing not to run the muzzle of the barrel into the ground, and a soldier accidentally doing so, should immediately fall out. If the piece be fired, the obstruction in the muzzle is likely to burst the barrel."

The Standing Orders lay down with great exactitude the duties of officers and NCO's. Most of it has a familiar ring and one is struck by how little change has taken place in the everyday duties of the various grades. The Regimental Orderly Sergeant, however, had one harrowing duty to perform which he would not be called upon to do today. It was his responsibility to see that "the urine tubs belonging to the single men's rooms are taken to the places appointed for them, and partly filled with clean water, within one hour from Rouse sounding. In frosty weather the putting of water in these tubs may be dispensed with."

We are back in the mid-Victorian period with a vengeance—the days of the lash, the "black hole" and those grim barracks at Aldershot which Canadians knew so well during the Second World War. The presence of these tubs in the barrack rooms was a source of great annoyance to the men, especially when they were upset by a comrade who had lingered too long in the canteen.

The Rifles—being an old soldier corps—had a high proportion of married men on strength. By a General Order dated Montreal, 8th April, 1861, the "well conducted wives of Soldiers of this Regiment who have been married with leave, together with their families, receive free rations." Married quarters were pro-

vided in barracks and the arrangement of "Married Men's Rooms", as they are officially referred to, is the subject of some strict injunctions:

"(a) Women are only allowed in Barracks as an indulgence under certain regulations, not as a matter of right.

"(b) Married men and their families must never be quartered in the same room with single men, except in cases of absolute necessity.

"(c) The NCO in charge of a married room will tell off a woman daily as orderly woman for the room, all taking it in turn without reference to the rank of the husband.

"(d) Each woman is to have her berth scrubbed out with water and soap every morning, summer and winter, Sundays excepted, by 9:30 a.m.

"(e) When an orderly woman of a room is reported for neglect of duty, her husband will be deprived of the benefit of a working pass, until he teaches her how to perform it."

The subject of barrack rooms cannot be passed without making reference to a paragraph of the Standing Orders which deals with some home truths as applicable today as when they were written. It is worth quoting in full: "The part of a Non Commissioned Officer in charge of a room is of not a little importance in the interior economy of a regiment. Some Non Commissioned Officers, from misdirected zeal, make the soldier feel needlessly uncomfortable, others from a want of attention and authority allow the barrack room under their charge to become a bedlam. Either of these by want of judgement drive the soldier from the barracks to the public house. It is quite possible to steer the middle course. The first step towards it, is for the Non Commissioned Officer to keep a watch over his temper, and never allow himself to be betrayed into the use of intemperate language and unnecessary fault finding. It it becomes necessary to check irregularity it should be done with firmness in a tone which must be obeyed, but at the same time does not give offence through haughtiness. Soldiers in their barrack room must have a little latitude of conversation. It is their home, and they should always have cause to feel that it is. Their arguments one with another should not be interfered with by the Non Commissioned Officer unless improper, or that there is a likelihood of a quarrel, when he should try to conciliate both parties. Their remarks on the passing events of the day, either public or regimental, should be tolerated in a reasonable manner. It is better the soldier should speak out his thoughts and views under proper restraint in his barrack room than that he should be driven to low haunts in the town for that purpose

where he will probably be inflamed by liquor, and where there will not be the wholesome counteraction of better arguments in a better or good humoured spirit."

The improved status of the soldier in the community is nowhere more graphically borne out than in respect to his pay. The pay of a private soldier in 1861 was one shilling per day. His seven shillings per week were subject to "stoppages" — a word which has an ominous ring about it. For messing, washing, necessaries, articles for cleaning his clothing, etc., the sum of six shillings, five pence was deducted. This left the soldier the princely sum of seven pence per week to fritter away in any manner he liked.

However, one is happy to note that the veiled deities who presided at the Horse Guards were not insensible that long service merited some reward. After a reassuring nod from the Treasury Bench, it was solemnly decreed that on the completion of twenty-five years' service, the pay of a private soldier would be raised to one shilling, one penny per day. So our soldier in the Royal Canadian Rifles engaged in humdrum garrison duties in Canada did have something to look forward to.

To augment their pay, the soldiers of the Regiment were allowed "to employ their leisure time in agricultural labour or handicraft". These working passes were a privilege and were hedged about with restrictions. The regulations wisely forbade any man "to work about any house or premises where liquor is sold by retail". No doubt the Commanding Officer had good reason to fear that nothing good could come of having his men working near a bar. In a section devoted to the framing of charges, no less than twelve offences relating to drunkenness are carefully set down.

That the Rifles was a veteran corps is reflected in the prices to be paid for medals "wilfully made away with, or lost through neglect". The medals listed are the Crimea medal, China Medal, Kaffir War Medal, Indian Mutiny Medal and the Victoria Cross. It is curious to see the Victoria Cross (replacement value £1.4.0) lumped in with campaign medals, but it must be remembered that the V.C. was a "new" decoration instituted at the time of the Crimea. Sir John Fortescue in his "History of the British Army" remarks that the Victoria Cross was not held in very high esteem by members of the old long-service Army when it was first introduced. This casual placing of the V.C. among general issue medals seems to bear this out.

After the passage of a hundred years it is difficult to recapture the "feel" or "tone" of a unit. There is,

however, one very revealing section in the Standing Orders. It deals with "Saluting and General Respect to Superiors" and in it the Commanding Officer really lets himself go. His men and their wives had been brought into contact with the rude, jostling democracy of the New World. There was no place here for "God bless the Squire and his relations and keep us in our proper stations" attitude to which they were accustomed. This became a matter of some concern to the C.O. Perhaps the proximity of the Great Republic to the south had something to do with the Colonel's acerbity. He wanted to make himself perfectly clear and he did so. There is an authentic Victorian flavour to his thoughts on the subject. It is perhaps fitting that his remarks should close the Standing Orders.

"The Lieut. Colonel likewise desires to enjoin upon married men the teaching of habits of deference and respect to their families. The children for instance must stop playing and bow or curtsey to their Officers when the latter pass them. The absence of this training not only has a bad and un-English tendency amongst the young, but an unfavourable effect as regards the discipline of the Schools. The Commanding Officer therefore will hold parents responsible that the Schoolmaster's instructions on this head be strictly carried out."

The Lieut. Colonel also takes the opportunity of remarking that the women of the Regiment "very constantly fall short of the civility of their country women at home, towards those who happen to be in authority over them. There is deference due from all in a Regiment, from the Second Senior to the Commanding Officer, and so on through all ranks to the women and children. Without laying down any rules on this subject, or enjoining a show of subserviency, as disagreeable to receive as to evince, it will be sufficient to observe, that the voluntary acknowledgment of their Officers when they meet them and when the occasion is fitting, while it is a thing most proper in itself, is productive of kindly feelings, and rather adds to than diminishes from the respect with which the women would be viewed. Let no false notions of dignity or independence mislead in this matter."

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THE PRESENT YUGOSLAV ARMY

General J. Breuillac in "revue Militaire Suisse" (Switzerland)*

As soon as Serbia had acquired her independence, after more than 400 years of Ottoman occupation, the first concern for the new state was the organization of its army. Because of the country's location—at the crossroads of Central and Southern Europe and at the frontiers of the European and Asiatic continents—the Serbian people concentrated all their efforts on their national defence.

It was a matter of safeguarding an independence which was in danger of becoming a pawn of interests, which, if not hostile to one another, were at least divergent.

Therefore, a large part of the country's budget was allocated to training and equipping its armed forces.

A Peoples Army

The Serbian population was, for the greater part, composed of small landowners (about 80 per cent), firmly attached to the soil and ready to defend it. This explains the high percentage of peasants and mountaineers among her soldiers, as well as among her junior officers and generals.

Because of this, the Serbian Army has, throughout its history, been intimately linked to the mass of the population. This particular characteristic always has played an important role in the Army.

It was during the course of the Balkan War (1912–13), and later in World War I (1914–18), that the Serbian Army acquired its greatest prestige in the eyes of the European people. When France, in accord with her allies, decided to form a new front in Southeastern Europe—the Salonika front—in order to ease the Austro-German pressure, the Serbian Army went into action and gave proof of the highest military qualities. Its officers and men displayed a rare spirit of sacrifice and bravery in the fighting in this theatre of operations.

However, to be able to form a reasonable opinion of the value of this army and the possible sense of its eventual intervention in a conflict with the Soviet Union, it is necessary to go back to the beginning of the century and examine the influences which have affected its formation and the events which gave rise to its evolution, with reference to the

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internal political crises of the country and the recent world tension.

Foreign Influence

With the ascension to the throne of King Peter I of Serbia, in 1903, the influence of the French military schools made itself felt in the Serbian Army, and increased from year to year.

Peter I, a former student at Saint-Cyr and a volunteer in the French Army during the Franco-Prussian War (1870–71), always had a great desire to train his army in accordance with French methods.

The formation of the Salonika front contributed toward the rapprochement of the two armies, and the two peoples, which were fighting for the same cause.

With the foundation of the Kingdom of Yugoslavia, in 1918, by the union of Serbia, Montenegro, Bosnia-Herzogovina, Croatia, and Slovenia, the fraternity of the two armies was extended to the entire kingdom.

King Alexander I, who succeeded his father in 1921, reinforced still more this traditional feeling (he sent a considerable number of Yugoslav officers to specialized military schools in France, as well as using French weapons and equipment in the Yugoslav Army).

The French influence finally found its confirmation in the signing of the Franco-Yugoslav Treaty of Military Alliance and the formation of the "Petite-Entente" — Czechoslovakia, Rumania, and Yugoslavia.

It can be said that these results were the direct consequence of the high qualities of the Yugoslav Army and its officer personnel.

In 1938, on the eve of World War II, and, particularly, after Munich, the Western European powers based great hopes on this army. If they were not realized, the principal reason for it was the internal discord which destroyed Yugoslav unity to the advantage of the governments of Rome and Berlin.

When, in 1941, Yugoslavia openly declared itself on the side of the allies, in spite of the repeated threats of Germany and Italy, France already had undergone a year of German occupation.

Only Great Britain resisted in Europe. The United States had not yet entered the war, and the Soviet Union still respected the treaty of alliance signed by Ribbentrop and Molotov. Under these conditions, the Yugoslav Army, isolated as it was, could not, in spite of its courage, have resisted the attacks of the German *Wehrmacht* and its satellites: Italy, Hungary, Rumania, and Albania.

One of the great dates of Yugoslav history is 27 March 1941; the date when a bloodless *coup d'etat* overthrew the pro-Axis Cvetkovitch government. On 6 April, German

troops attacked Yugoslavia, and, by 17 April, the entire kingdom was under the Nazi heel. The recently formed government had fled the country, with its young king and a part of the air forces, to take refuge in the Middle East.

A few days previously, the chief of the Ustachis, Ante Pavelic, had declared the independence of Croatia, but, in the Serbian territory, a staff colonel, Draza Mihajlovic, already was organizing the resistance movement.

Guerrilla Warfare

The movement spread rapidly throughout Serbia, Montenegro, Bosnia, Dalmatia, and Croatia, and assumed all the characteristics of modern guerrilla warfare.

Draza Mihajlovic, an instructor in the staff school, had been the only one to maintain that the Yugoslav Army could not resist the German military power, and he had taught the manner in which small, regular units should be trained for partisan warfare.

A plan for the organization of the Yugoslav Army for this new type of warfare even had been submitted by him to the Ministry of War. However, this plan, which had been very badly received, was rejected immediately.

While Draza Mihajlovic organized the resistance movement against the enemy, Ante Pavelic, with his Ustachis, undertook the extermination of the Serbs who were still inside the frontiers of the new independent state of Croatia.

It was a period of misery, terror, and moral prostration. According to the official records of the present Yugoslav Government, at least 750,000 Serbs were victims of the merciless blows of the Ustachis.

While the executions of the Serbians were in progress, Germany attacked the Soviet Union, who thus passed over to the camp of the Western allies.

It was at this moment that the first Communist resistants appeared in Yugoslavia; first, in the eastern part of Montenegro; later, in Chumadija, the most important of the Serbian provinces. In the beginning, this Communist resistance remained camouflaged. At times, it continued the national aims of Yugoslavia; on other occasions, it propagated socialistic theories for the equal partitioning of the land. Any friction with the peasant classes, which at all times had been hostile to communism, had to be avoided.

However, in spite of all this, the peasants' hostility forced the Communist resistants to leave Serbian territory toward the end of 1941, and move to Croatia. Here, the persecuted Serbian population sought refuge in the ranks of the Communists who fought under the Yugoslav banners.

Simultaneously, with the first skirmishes between the troops of Draza Mihajlovic and the Communist resistants, both the press and the communiques began mentioning the name of Tito, who had hitherto been unknown.

Arsa Juanovich

In 1941 and 1942, the Communist partisans, who were entirely untrained, took almost no part in the national resistance movement. At their head were Mosa Pijade, Peko Dapchevich, Sreten Zujovich, Milovan Djilas, Josip Broz Tito, and other partisans of the Marxist doctrine. However, the real organizer of Tito's units was Arsa Juanovich, monarchist, former frequenter of the Royal Court, and one of the best officers of the erstwhile Yugoslav staff. Son of a poor family of Montenegro, but ambitious and industrious, he studied at the Ecole Militaire of Belgrade, and, later, at the Ecole Superieure de Guerre, where he distinguished himself. While there, he was the pupil of Draza Mihajlovic who taught him his guerrilla methods.

When, at the beginning of 1942, Arsa Juanovich met Tito, he was preparing to leave Serbia and go to the western part of Bosnia, where his units were being pressed by those of Draza Mihajlovic. From that moment on, and up to the conclusion of the hostilities, the two men never parted.

Almost immediately, Juanovich was appointed as chief of staff. Although he was not a Communist himself, he was influenced by his wife who, unfortunately, was a member of the Party, and was well known in the country for her sanguinary acts.

It was with Arsa Juanovich that the military communistic movement was to attain its full development in Yugoslavia, under the orders of Josip Broz Tito, at that time appointed marshal, with the assent of Moscow.

Toward the end of 1943, Tito turned again to Serbia. Arsa Juanovich found himself, with his men, face to face with the troops of Draza Mihajlovic at Kolinovik in eastern Bosnia. From the very beginning of the battle, Draza realized that he no longer was dealing with badly organized or poorly trained bands. He perceived that the hostile units had been trained by his former pupil Juanovich. He lost this battle, known under the name of the "Fourth Communist Offensive". It should be stated, for his exoneration, that the Communists had a vastly superior force: 40,000 men compared with Draza's 16,000 men.

With the hostilities terminated, the communistic regime was installed in Yugoslavia, with the assent of the Western allies and with the military aid of the Soviet Army. Arsa Juano-

vich retained his title of Chief of the General Staff until the end of 1946. He, nevertheless, remained in the shadow. It is a known fact that he made several trips to the Soviet Union and that he obtained the rank of general of the army. Suddenly, in 1946, he was replaced as Chief of the General Staff by Kocha Popovich.

During the night of 11–12 August 1948, after the unexpected split between the Cominform and the Belgrade Politburo, Arsa Juanovich attempted to escape and cross the frontier in the direction of Rumania, but he was surprised by the frontier guards and shot.

Kocha Popovich

Kocha Popovich's mediocre qualities do not explain his tenure of the important post of Chief of the General Staff. Scion of a rich industrial family of Belgrade, he conducted his studies in Switzerland with the Dominicans, and speaks French fluently.

Kocha Popovich was a member of the Communist Party before the last war, but, because of his background, he always was regarded as a "middle-class Communist."

The Yugoslav Army

In the present world crisis, as in the period just after Munich, great importance is given to the power of the Yugoslav Army.

It is certain that the present Yugoslav Government makes the Army one of it chief concerns, but, because of the scarcity of information regarding it, it is difficult to determine precisely its combat value in the event of another war.

About the only information that is definitely known about the Army is that (1) it has great numerical strength, possibly 1½ million troops on mobilization; (2) the troops are robust, courageous, and disciplined; and (3) the officers and non-commissioned officers are energetic, the majority of them having been trained during the course of a merciless partisan war.

Combat Training

This partisan war was carried on in very rough terrain and in extreme climatic conditions. The region, which is poor even in normal times, had been systematically devastated by all the forces that had fought there. On some of the axial routes, for example, it was possible to travel 60 or 70 miles without finding a building with its roof still intact.

The medical service, out of supplies and equipment, could only deplore its helplessness. Many wounded men could not be cared for or restored to duty. The number of amputees was frightful.

It is easily understood how the men and women (there were many women fighting in the ranks of the partisans, with the same status as the

men) after going through the military training are marked by it and solidly tempered for the rest of their lives.

The great commanders all distinguished themselves during these years of trial. A few of them, really a very small number, came from the former Royal Army, from which they transferred a few traditions to the new army. The others, the great majority, received their first military training in the international brigades in Spain.

Partisan warfare has no secrets for them.

War Matériel Varied

Their matériel is extremely varied. It came, for the most part, from repaired weapons and equipment, and the spoils of war (German and Italian stocks taken during hostilities, and American, British, and Soviet equipment obtained by Tito). The latter, however, are in small quantity, especially as regards aircraft, armoured vehicles, and artillery weapons.

The heavy industry and establishments capable of manufacturing arms and ammunition are still insufficient to supply the needs of a war. Nevertheless, the armament is being modernized and the infantry is being reorganized. Little by little, the artillery is being motorized. The Army now possesses about 100 heavy tanks, built by national industry, after the pattern of Soviet tanks.

On the other hand, the number of planes is insignificant. The fairly ambitious 5-year plan, which had been adopted with a view to the establishment of a war industry, has not been very successful, because of the difficulties arising between Yugoslavia and the Soviet Union.

Finally, the general equipment of the country is very rudimentary, in spite of the efforts made since its liberation. Nevertheless, despite the grave economic situation into which the country has been plunged, the soldiers of Tito's Army are suitably equipped, well clothed, and their food is sufficient.

Political Influence

Although the majority of the Yugoslav Army is composed of men belonging to the peasant class, hence, in the main, hostile to communism, the officers are obliged to be members of the Communist Party.

The officers must attend military schools, but it appears that the results have not been outstanding.

Moreover, the Yugoslav Army, like the armies of the satellite countries of the USSR, has been given a thorough political education. It has been indoctrinated with Marxist ideology, with the view of using it, above all, for the defence of the Government rather than for the defence of the country. It is subjected, the same as in the Soviet

Union, to severe surveillance by "political commissars".

Likewise, still following the example of the USSR, special courses in military education precede the obligatory military service, both in the cities and the small villages.

Summarizing, it may be said that the Yugoslav Army:

1. Is the strongest army in the Balkans, both in numbers of combatants and in the ability of its officers and enlisted personnel.

2. Is well suited for partisan warfare.

3. Could not hold up under the weight of a major conflict, except within the framework of a coalition capable of furnishing it the arms and equipment which it lacks. This must be done continuously, even before it enters into the campaign.

With the exception of its special aptitude for partisan warfare, this verdict resembles that made, in 1939, of the old Yugoslav Army. Nevertheless, in 1941, one was surprised to see this army defeated in a week's time, not only because of a lack of matériel, but, perhaps, because of the absence of cohesion resulting from the Serb-Croatian differences.

This distressing story has no place here. However, one has the right to wonder if the present Yugoslav Army does not also suffer from a lack of cohesion comparable with that which was fatal to the Royal Army, in 1941, and whether, on this account, it might not, in the event of another war, fall victim to a similar fate.

To be completely objective, we must call attention to still another weakness. Yugoslavia belongs to the Mediterranean basin by virtue of its Adriatic coast. This coast line is difficult to defend because of its length. The Yugoslav Navy is composed only of Italian vessels turned over as war reparations. In addition, the USSR, which has had naval bases in Albania for several years, maintains a permanent submarine force there. Thus far, Yugoslavia has devoted its efforts to building up the size of its merchant marine. The presence of Soviet naval units up and down the Adriatic coast, therefore, would constitute a grave danger in case of a conflict.

However, this danger is not the only one. In the present situation, three causes of discord reduce the value of the Yugoslav Army. These are:

1. The differences between the Croats, Serbians, Macedonians, and Montenegrins.

2. The differences between the present directors of the country and their political opponents.

3. The differences between the partisans of Marshal Tito and those of the Cominform.

The Yugoslav Mosaic

The Serbs continue to be embittered, for, up until 1941, they occupied first place in the country. They regarded Macedonia as being Yugoslav, calling it, at that time, "Old Serbia". Their fathers had conquered it in 1912, and it was, moreover, the cradle of the ancient Serbian Empire of the Middle Ages.

In addition, Yugoslavia in its entirety (which many Serbs would have desired to transform into "Greater Serbia") was the fruit of the heavy sacrifices of the Serbian Army from 1914 to 1918.

Today, Yugoslavia is split up into a federation of independent states with equal rights: Serbia, Crotia, Slovenia, Bosnia, Montenegro, and Macedonia.

Serbia has, therefore, lost its place of pre-eminence in the country, and it is now Marshal Tito, a Croatian, who governs.

Hence, the traditionalistic Serbians (and, aside from the Communists, they are almost all of that kind) are displeased with this new situation which has been created. It seems to them contary to their best interests.

Their discontent is the more bitter because the attitude of the Croatians, in 1941, may be considered, as mentioned previously, as one of the causes of the disaster.

On their part, the Croatians complain of having been persecuted from 1918 to 1941 (burdened with taxes, kept out of all important posts, and treated as suspects because they were ex-subjects of the Hapsburgs).

Their grievances, constantly kept before them during the period between the two wars by German, Italian, and Hungarian propaganda, drove them into committing anti-Serbian acts in 1941 and during the entire existence of the independent state of Croatia.

However, this deep-seated enmity of the Croatians has been somewhat smoothed by Marshal Tito, thanks to:

1. The federative form of government which he has given to Yugoslavia.

2. The care which he took to prevent any settling of accounts between Serbians and Croatians at the time of the liberation.

Without question, the old quarrels are not yet forgotten. However, they are less talked about, for the people have other worries. In addition, the new generations, subjected as they are to official propaganda, nurse, a little less, the pre-war grievances.

As for the Montenegrins and the Macedonians, they lose no opportunity for revenging themselves of the guardianship which the Serbs imposed on them.

The Montenegrins, generally speaking, are extremely pro-Russian and have rallied, in great numbers, around Tito since the beginning of

his struggle for liberation and for the establishment of the Communist regime. Thus, some of them have ensured themselves of choice positions in the new army and government, which, obviously, antagonizes the Serbs.

The Macedonians show themselves openly hostile to the Serbs, who established themselves in that country after 1912. They still entertain the hope of forming, some day, with Bulgarian Macedonia and Greek Macedonia, a "Greater Macedonia", entirely independent of Yugoslavia. They count on the rivalries which divide Belgrade, Athens, and Sofiya to bring this about.

There is no need to stress the complexities of these problems. However, the firmness of Marshal Tito has prevented any of them from becoming acute.

Tito and the Cominform

To the Western world, the differences between the partisans of Tito and those of the Cominform would seem to be a doctrinal quarrel. However, as a matter of fact, this is not the case with the majority of Tito's partisans, who know little of the Marxist doctrine.

These people follow the movement because of the promises which have been made to them of better standards of living for themselves and their children. However, they are hostile to all outsiders—even though they be Russians and Communists—who come into their country and meddle with their affairs. They approve, therefore, of the firm attitude of Marshal Tito.

Naturally, these things are not viewed in the same light by the intellectuals. Their Communist training is thorough. They are strong converts of the Soviet Union; it is she who taught them the doctrine. However, with few exceptions, they have remained loyal to Tito.

The political figures who are regarded as the most important workers in the field of communism in Yugoslavia—Mosa Pijade and Edvard Kardelj—have done likewise. In the Yugoslav Government, only two ministers, General Jujovich, Minister of Finance, and Hebrang, Minister of Industry, have declared themselves for the Cominform. Their arrest provoked no reaction. In the High Command, only General Arsa Juanovich deserted. When he was killed at the Rumanian frontier, he was in the company of Colonel Darchevich, brother of one of the most dynamic generals in the new Yugoslav Army. This general did not waver.

More astonishing, the High Police, although orginally trained by Moscow and still making use of strictly Soviet methods, have employed themselves very diligently in unraveling all

the intrigues of the agents of the Cominform.

In any case, the command controls remain firmly in the hands of Marshal Tito and his immediate companions, and no wavering appears to be feared, for the moment, among the subordinate officials.

Conclusion

What conclusion are we to draw from this study?

Since his accession to power, Marshal Tito has had to face numerous difficulties. He has solved, or at least surmounted, all of them with rare skill and unfailing energy. Today, he is fighting against destruction and want. Doubtless, he will succeed in triumphing over these if the Western nations will but trust him.

To be sure, the situation is still extremely unstable. One weak point, a serious incident, or a false move would be sufficient to throw everything into disorder again.

However, if this risk can be avoided, the new Yugoslav Army soon will constitute an instrument of war of undeniable worth and, provided the West is able to supply the arms and equipment that it needs, it should play a leading role in the Balkans.

However, some individuals, finding that the present regime was established in Yugoslavia without true popular consultation, question whether the interests of the government and those of the people would coincide in the event of a war, and whether, on this account, the fighting spirit of the soldiers would not waver. In short, would the Yugoslav Army oppose an invasion by Soviet or satellite troops with an effective defence or a solid front?

In our opinion the answer is yes!

After the painful experience suffered by Yugoslavia at the time of her "liberation" by the Soviet Army, it is certain that the Yugoslav Army would resist violently the Communist invaders—even though some of its officers, members of the Communist Party, revealed themselves, at that moment, as partisans of the Cominform.

The Yugoslav people are deeply attached to their soil; sentimental and faithful to their friendship with France. They retain the lively memories of the sufferings endured, in common, at the time of the trials of 1914–18, and have faith in the peoples of the West.

If the allies are capable of freeing them from their misery, of opening up vistas of more comfort and happiness, they will take their stand like a powerful barrier before the Communist tide.

Their army will be the pillar on which will be anchored the defence of the European Southeast, and the rampart which will halt the Soviet drive toward the Western Mediterranean.

DENMARK'S NEW TERRITORIAL ARMY

MAJOR A. N. HIVDT IN
"THE SERVICES AND TERRITORIAL MAGAZINE" (GREAT BRITAIN)*

The Kingdom of Denmark joined the Atlantic Pact defence scheme in 1948. Consequently, her armed forces have become a link in the chain where Her Britannic Majesty's forces play such an important part. In Denmark, the development of the British defensive preparations is being watched with the keenest interest and the efforts to re-establish the British Territorial Army is studied particularly by Danish Territorial Army people.

The Danish Territorial Army, as raised and developed after World War II, has many similarities with England's Territorial Force when it was reorganized in 1921, as The Territorial Army of the United Kingdom. In many ways, also, the Danish organization is very much like the English Home Guard from 1940 to 1944.

Much inspiration and many "good ideas" have been imported from England's Territorial Army to the brother organization in Denmark.

Territorial Army Needed

A complete co-ordinated territorial defence scheme did not exist in Denmark before 1946. Throughout her history, territorial units of volunteers have been raised and disbanded in all parts of the realm. However, two world wars seemed necessary to make it clear to the Government that armed forces that could be mobilized practically within an hour had to cover all parts of the Kingdom and be run independently of the more slowly mobilized army of National Service reservists.

That such an army could only be established with powerful Government support behind it (propaganda, equipment, training accommodations, and instructors) also had to be realized at the same time.

Only a few of the old volunteer corps had been able to survive the economic crisis that arrived whenever the first enthusiasm (mostly inspired by a German aggression or the threat of an attack) cooled down.

Conscription in Denmark

Conscription was introduced in

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Denmark in 1803—originally comprising the peasant class only, but from 1849 (during the war against Germany 1848-1851) it was extended to every physically fit young man in Denmark. The regular forces would—in case of war—call up 20 classes (annual National Service intake), which means that no man between 20 and 40 could devote himself to any voluntary service because in case of war he belonged to the regular army and navy.

Volunteer Corps

Nevertheless, when World War I cast its shadows over Europe a patriotic movement all over the country led to the raising of bicycle-corps of volunteers too old for the army reserve, all armed with machine guns. These units were raised in almost every county and specialized in great fire power combined with quick movements (bikes or even motor bikes).

Local Defence Companies

On top of these units, members of the local rifle clubs at the same time formed local defence companies to guard railways, bridges, harbours, and other installations and facilities. They had no uniform (an arm band only) and were armed mostly with inefficient weapons, but they were everywhere. Although they could be considered as ineffective in case of war (they never drilled!), they can call themselves the ancestors of the present Danish Territorial Army (or Home Guard).

Underground Army

During the German occupation 1940-1945, an underground army was formed in Denmark, mainly equipped with British and Swedish arms and ammunition, smuggled or parachuted into the country. These enabled the resistance army to carry out a very important part of the strategic fight that had been left to the occupied Denmark, for instance, the railway sabotage that actually ruined the German troop movements from Norway to Normandy during the critical Caen battle in 1944.

Apart from this activity, the resistance forces became organized and trained with a view to an attack in the rear of the German Army if if an allied invasion had taken place on Danish territory.

However, the Germans surrendered just as the British 21st Army Group reached the Danish-German frontier in May 1945. As His Danish Majesty's regular forces had been wiped out completely, the resistance army, plus one brigade of Danish patriotic refugees that had been raised in Sweden and landed in Denmark on 5 May, immediately took over the police duties and mopping-up in connection with the German surrender.

The resistance army immediately started to convert itself into a Territorial Army, having a complete organization all over the Kingdom plus a considerable amount of equipment, and the enthusiasm and the team spirit from the grim days of occupation became an important asset of the new army's morale.

Before the future organization of the regular forces had been fixed, an act was passed through the Copenhagen Parliament which outlined the Territorial Army's first establishment and secured it sufficient economic support, equipment, instructors, and staffs.

Obstacles to Overcome

Many obstacles had to be overcome, particularly as the regular forces simultaneously were having a hard battle to get on their feet again after the German occupation that had meant the loss of every bit of equipment and a terrific shortage of officers through casualties in the resistance fighting, and because of the inactivity of the military academies during the years of occupation.

However, gradually the new Territorial Army took shape and the first objective—armed forces in every town, village, and parish—soon was reached and combined into a firm organization. The task of this "new army" was fixed to form the immediate answer to any *blitz* invasion by land, air, or sea, and to deal with the guard duties at all points of stategic importance.

In this connection, the Danish Territorial is thoroughly trained to deal with any fifth column activity. On top of all this, there is co-operation with the regular forces. Territorial Army units are often exercised as ordinary fighting field units so that they could become reinforcements for the regular forces, if necessary.

Naval Territorial Army

To start with, all units were organized and trained as infantry but gradually Territorial Army units have been trained as anti-aircraft batteries, anti-tank companies, service units, and, last but not least, a naval branch of the Territorial Army has been raised. It is obvious that a kingdom consisting of a peninsula and 595 islands within its archipelago will claim a naval force, always on the alert and fully cognizant of local coastal geography.

Further information about the organization of the Territorial Army in Denmark cannot be given for obvious reasons, but some characteristic features that can illustrate its conditions of work may be of interest.

The Territorial Army cannot include any National Service reservist class young enough to be called up to the regular forces in case of war. This means that the main intake

consists of men between the ages of 30 and 50, but most units can boast of non-commissioned officers or privates between the ages of 65 and 80.

Up to the present, all enlistments have been voluntary, but the law makes it possible to use Territorial Army conscription or the transfer of old army-trained National Service men in areas where voluntary enlistments have not been large enough to cover the local establishment. Nowhere has such a thing been necessary up to now. Repetitive training of National Service men is not left to the Territorial Army. It takes place through the calling up of the old National Service men to their regular unit.

As in England, the recruiting follows the world political barometer from day to day. At the outbreak of the Korean conflict, long lines indicated where the Territorial Army recruiting offices were located.

A considerable part of the recruits have served with the regular forces. However, among the older classes, many have never been in khaki because the intakes in the years between the two world wars were constantly cut down for reasons of economy.

Consequently, the latter part must go through a considerably more extensive training than old National Service men.

Week-end Training

Most training in the Territorial Army is done on week ends. During the summer, training also is conducted on week days. Summer camps as known in Great Britain are not used for the obvious reason of lack of equipment—mainly tents. However, the Territorial Army has its own officers' training centre, where officers and non-commissioned officers attend a two-week course each year under regular officers' instructions.

According to old Danish customs, officers and non-commissioned officers are chosen by the rank and file, but naturally members that had commissions previously in the regular forces are generally asked to take over the command of the local units. There are, however, areas densely populated with retired officers, where majors and colonels serve as bren gunners under subalterns 30 years their junior. Anybody can get a commission in the Territorial Army and hold it as long as he is sufficiently efficient and enjoys the confidence of his countrymen from the same village or area.

Clean Sheet Essential

Clothing and equipment are permanently issued and kept by the members in their homes. So is live ammunition, with the result that any Territorial Army unit is constantly on the alert and can mobilize within

a very short time. Discipline is based on confidence and friendship and on the fact that everybody is doing his bit voluntarily. Breach of discipline is rare, and any serious case means an immediate goodbye to the Territorial Army. Everybody that wants to join is carefully examined, and a clean sheet in every respect has to be produced. So far, no unwanted elements have been enlisted.

Uniform and Equipment

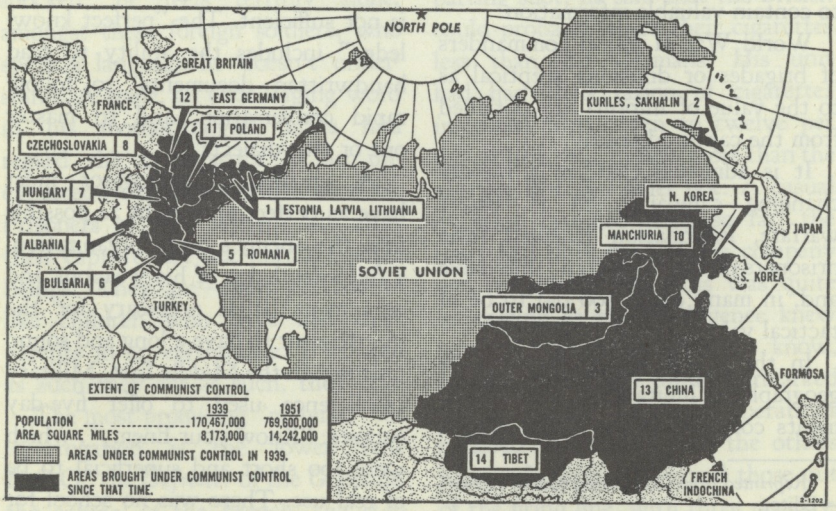
The uniform and equipment soon will correspond to that of the regular forces, with the exception of a collar badge that can be discarded in case of mobilization to remove any distinction between the Territorial Army and the regular forces. Therefore, all sorts of textile "flashes" are carefully avoided.

The uniform is khaki with a field cap of an old Danish design. Web equipment is like the British 1937 pattern, and the individual weapons consist of Swedish *Mauser* rifles, Danish *Madsen* light machine guns and *Suomi* submarine guns.

Signal equipment and all heavy equipment is modern.

The Territorial Army now has settled down. Many years of hard fighting to raise the army from what was originally organized as a resistance army during the German occupation is now over and the "child" is growing up.

What the Soviet Union Has Gained — 1939 to 1951



Reproduced from the Military Review (U.S.)

PRISONERS OF WAR AS A SOURCE OF INFORMATION

By
CAPTAIN J. E. BPTZLER*

During the trench warfare period of World War I, prisoners of war were a most important source of military information. Both sides used to send out patrols, sometimes of considerable strength, to bring back some of the enemy, dead or alive, to identify the units in position. The successful patrols were given extra leave, decorations were distributed freely and even prize-money was paid, particularly for documents found to contain valuable information.

World War II found commanders of brigades or divisions sceptical as to the value of information obtained from the captured enemy.

It is admitted that, in a rapidly changing campaign, as in desert warfare, information received from prisoners-of-war is often unreliable and, in many cases, too old to be of tactical value.

In the Italian campaign, with its geographical limitations, with movements confined to roads and tracks, with mountains and rivers helping the defender and hindering the attacker, with air reconnaissance often impossible through weather conditions, the captured enemy became a source of information every Intelligence Officer prayed for.

Not everything, but much, depends on the interrogating staff to make interrogation worth while. It is obvious that a perfect knowledge of the enemy's language is indispensable and that a smattering of the language is not sufficient. The "perfect knowledge" includes the ability to read handwritten documents, to follow rapid conversation, and to master one or two dialects.

A successful interrogator must have as perfect an insight as possible into the enemy's army organization, a full knowledge of his weapons and equipment. It is necessary for the interrogator to have a long and sound training. In the Middle East, Military Intelligence used to offer five-day courses: "Know your Enemy", which were too short and superficial to be of real use. There was no school for

*Reprinted from Commando (*South Africa*). —Editor.

interrogators. The Inter-Allied Interrogation Centre, set up at Maadi, to the south of Cairo, did mostly strategic interrogation and, although the South African Interrogation Staff of 6 South African Armoured Division learnt much during the few months they were attached to Maadi, it was not what was needed for interrogation on Division or Brigade level.

It is true that there is no known "method" or "technique" of interrogation. It is mostly a matter of psychology and horse-sense. The bullying interrogator was nearly always a failure, whereas kindness and sympathy often worked miracles. The captured enemy, arriving at Battalion, Brigade, or Divisional Headquarters, is naturally stunned and shocked; he feels terribly alone, amongst these foreign soldiers, who speak a language he doesn't understand. A smile, an encouraging word in his mother-tongue, make him regard the interrogator as an unexpected friend in a world of enemies. Prisoners of war, immediately after their capture, are not normal human beings. They are—most of them—like children who have lost their parents in an earthquake. If treated as such they act as such, they talk.

The most promising "material" for interrogation is the lower rank N.C.O., the *Gefreiter* of the Germans, the *caporal* of the French, the *starshina* of the Russians. These people are well enough informed to tell about the disposition and organization of their platoons and companies and, if a lucky star produces a battalion or regimental clerk or an officer's batman, then the Intelligence Officer will soon have a fairly complete picture of the unit and the sector he is interested in.

If a captured enemy proves obstinate and does not want to talk, it is waste of time to insist or to try "third degree" stuff. There are always others who are more co-operative. But even the "hard case" can be useful. There was a Feldwebel, captured in the Gothic Line, who was very secure indeed. The interrogator did not press him at all but dismissed him with an offer of a cigarette, which he refused. As a parting shot, he said that the British could probably spare their cigarettes less than the Germans. His unit had had their ration of cigarettes increased from seven to twelve per day, which was, in fact, more than the average British soldier got. A casual question revealed that, so far, the issue had only reached his company and no other unit. This was quite interesting as our Intelligence knew what the Feldwebel did not know, namely, that only units earmarked for immediate offensive operations received so many, whilst the others had to do with seven, and those out of the firing line, with three per day.

But the Feldwebel had given another piece of information, a letter from his wife, addressed to him, with the the Field Post Number 24751c behind his name. The Inteligence Staff of the Division now knew that 3 Company of I/Rifle Regt. 267, near Vergato, was planning some raid or other. Two days later, and as a direct sequel to the twelve-cigarette incident, a German patrol of one officer and twelve other ranks marched straight into captivity. From them the following information was obtained :—

> The location (in a six-figure map ref.) of I/267 H.Q., of 1 Coy., 4 Coy., the exact disposition of the platoons, the site of two 8.1 mortars and of four heavy machine-guns, equipment of the whole battalion, to the minutest detail, the names of the officer commanding I/267, of his adjutant, of all the company commanders and platoon commanders.

And all that because of twelve cigarettes.

A rich source of information is the mass of papers captured enemy carry, in spite of all the instructions to the contrary. These papers must be examined at once and the interrogating staff must be able to separate the important ones from the useless. Maps should be brought to the Intelligence Officer of the Division without delay and a member of the Interrogating Section should be sent along to assist with the interpretation. An interrogation report, dated 11 September, 1944, has the paragraph :—

> " . . . The prisoner of war belongs to II Battery, Arty Regt. 362, and carries cypher code and other cryptographic documents. He has been routed back to Corps Headquarters to be interrogated by cypher experts."

It would have been wrong to keep this man, as the cypher expert was able to get more important information from him than the Divisional "I" staff.

A paragraph in another interrogation report, that of 23 September, 1944, reads:—

> " . . . The prisoner of war (5 Coy., 146 Inf. Regt.) had a diary on him which he helped to read . . . "

The diary gave the itinerary of the whole II Battalion of the Regiment. This, by the way, is a warning to soldiers who love diary-writing. There were numerous cases, particularly during the German withdrawal from the south of Rome to the Gothic Line, where captured officers carried maps, operation orders, strength returns and other documents of the most secret nature, and most welcome to the Intelligence Section. This is a warning to the paper-happy front-line officer.

For the interrogation team this

meant days of interrogation work, followed by nights of translation.

The question who should "lay hands" on the prisoners of war first is always difficult to answer. The platoon commander is naturally keen to learn what he can of the small sector he faces. So he gets going with gesticulations and pidgin-German, or whatever language may be needed, trying to locate that particular machine-gun which gives him so much trouble. The front-line soldier, kind but keen on souvenirs, starts swopping things, which usually means that some quite interesting documents find their illegitimate way into wrong hands. Then there is that camera which changes hands for a few cigarettes. The Intelligence Officer, back at Army H.Q., would have been delighted to see the negative showing just that new gun-mounting about which there was so much rumour.

At Battalion H.Q., our prisoners of war face the Artillery Liaison Officer, who wants to knock out that one-gun firing at Battalion H.Q. every night. The obliging prisoner of war tells him that two batteries were removed last night to go somewhere else. Back at Divisional H.Q. the C.R.A. receives the surprising news that 16 guns were removed by the enemy from his sector. The German, of course, could not know what he called a battery is in actual fact no more than an English troop.

The solution to these difficulties is to attach permanently one member of the interrogation team to at least each brigade. This course was adopted during the Italian Campaign, but not before the last great offensive had been launched and was well on its way.

The interrogation team needs the co-operation of the men in the line more than is usually realized. All the prisoner's possessions, in particular, all his papers, should be taken away from him and sent back with the prisoners. The search should be made as thorough as possible. On several occasions it happened that prisoners of war were left with hand grenades and pistols in their pockets, and in the American sector, at least two interrogators were shot dead by prisoners of war who had been left with their weapons.

The Interrogation Officer should regard himself and should be regarded by the Intelligence Section of the Division as the co-operative representative of the enemy attached to Divisional H.Q., and he should become so intimate with enemy matters that, when talking of them, he should be inclined to use the word "we" instead of "they".

Whilst interrogation is being carried out, the important bits and pieces must be passed on to "Opera-

tion" at once. An interrogation report should be handed in as soon as possible. It must be short and clear, with a preamble to show the assessed degree of reliability of the prisoner of war. An interrogation report does not end up in the wastepaper basket of G.I. or of the Divisional Commander. It is widely circulated.

When there are plenty of "boys" for interrogation, things go fairly easy. However, during the first three months of 1945, enemy prisoners were very scarce and information badly needed. The enemy knew, of course, that something was in the air on our side and he tried to deny us any knowledge of his disposition and of his preparations to meet our onslaught. It was of paramount importance to our planning staff to know whether the enemy was sending fresh troops into the line or whether the old units, tired through a long winter campaign, were expected to receive the final shock.

Corps had issued an order that each Division was to take at least one prisoner every three days. When the prisoner had been taken, the anxious question was: "Will he talk?" and sometimes: "Can he talk?"

He was a German cadet, young, very seriously wounded, sinking fast and delirious. Our medicals allowed no interference with the wounded man; yet the orders for the interrogation team were quite clear: "You will find out his unit." At the Casualty Clearing Station, back at Castiglione, the Interrogation Officer waited at his bedside. Every now and then the phone rang: "The Corps want to know, the Army wants to know, what is his unit?" When his face grew pointed and grey, when he was beyond recognizing anyone or any uniform, the interrogator saw his lips forming words :"Letter to my Mum . . . write for me . . . please." The Interrogating Officer wrote, hardly able to catch the words: "Dear Mum, I have been wounded and the Tommy captured me. I am fine, don't worry, love. Hennie." Then a long pause, life ebbing away fast. Then the Interrogation Officer: "Hennie, mein Junge, the address! I must send that letter to your 'Einheit,' they will pass it on to your Mum." "Ja, the address, write please: Feldpost Number 2 . . 4 . . 7 . . 5 . . 1 ." All seemed to be over, but once more he rallied: " . . . Don't forget the 'a', 24751a, otherwise wrong Company, letter might get lost . . . " The soldier of 1 Coy. of I Battalion 267 Infantry Regiment was dead—and Corps and Army knew that no fresh troops would meet us on this sector when the great attack would go in.

Modern war is no longer, and will never be again, an affair between two nations. In Italy the prisoners of war who fell into our hands were a

motley assortment of nations, Germans, Italians, French, Bulgarians, Poles, Rumanians, Russians—and plenty of them—and Greeks. Some of them were "Volksdeutsche", men whose parents or grandparents had hailed from Germany. Some of them had joined the Germans voluntarily, and many not so voluntarily. They all had useful information and had to be interrogated. The Interrogation team of 6 South African Armoured Division could deal with Germans, Italians, French and Russians. But when a Greek or Albanian came along, then the team was at its wit's end. In this case, the Field Security Section, the most multilingual crowd imaginable, were called upon to assist. The section had approximately twenty-one members who spoke, amongst them, eighteen foreign languages, including Arabic, Greek, Albanian and all the Scandinavian languages.

In Italy the interrogation team, although small in numbers and low in rank, was by no means regarded as a "quantité négligeable." From Chiusi onward, the team had to report daily to the Divisional Commander or to G.I. to give them their version of the enemy situation. Frequent visits to the neighbouring divisions and corps were arranged, to exchange views. The job was never boring nor free from excitement. Near Sarteano, the Interrogation Officer and one of the sergeants blissfully drove into the German lines, and were just saved from captivity by our most forward recce tank.

At Cività Castellana, the "Italian" interrogator and the Interrogation Officer found themselves in the deep of the night, in a German Military Hospital, with five hundred Germans, 150 of them neither wounded nor injured, but very hostile and most uncooperative. The disquieting factor was that none knew whether the tanks rumbling about outside and down in the valley were "theirs" or "ours". Somewhere near Viterbo the interrogation "room" was a cowshed shared with two lowing cows and a very old Italian peasant woman. At Chiusi the team searched the abandoned headquarters of the Hermann Goering units which had defended the town and, by sheer good luck, left untouched the six booby-traps which two hours afterwards, blew up some six Italians, who were looting the premises.

South of Florence the team parked its vehicles in a field in a river bend, from which the engineers removed twenty-one teller mines and six S-mines, after they had been told of a "funny steel contraption" sticking out of the ground, two feet away from the wheel of one of the trucks. Near Pistoia a group of partisans consisting of one Russian lieutenant and twelve Mongols were brought in. To prove their proud deeds and the

killing of many of the enemy, the Mongols, with a grin on their faces, produced some fifteen well-dried little fingers. The Mongols could not be interrogated.

Three days after the surrender in Italy, a half-section of the South African Interrogation team was sent to Bolzana, there to act as interpreters for the American Armistice Commission. General von Viettinghoff and his staff officers proved very amiable and co-operative.

From the moment the South African interrogators stepped on Italian soil, to the firing of the last shot, there was not a day without action or excitement for them.

When 6 South African Armoured Division left for "Up North," the so-called "invasion establishment" showed on the Divisional Staff: "Interpreter (Civilian or Lieutenant)." At the end of the campaign, the interrogation team consisted of one captain, one staff-sergeant, two sergeants as interrogators, and one captain and twenty-one other ranks to deal with the handling of prisoners of war.

Whereas the "Interpreter (Civilian or Lieutenant)" of the "invasion establishment" was evidently meant to find "Vino, victuals, and various other commodities", the actual interrogation staff did important militarywork in the field.

Regimental Ethics

Sir William Robertson recounts in his memoirs, *From Private to Field-Marshal* (London, 1921,), how he was initially discouraged from obtaining a commission by the financial difficulties faced by the few genuine rankers without private means. However, even after a new commanding officer of the 16th (Queen's) Lancers had persuaded Troop Sergeant-Major Robertson to put aside his fears, it was discovered that Treasury could not pay the £150 outfit allowance granted to rankers during the current fiscal year. Finally, according to the author:

"These vexatious delays terminated early in February 1888 when I appeared before a board of officers of the 4th Dragoon Guards at the Royal Barracks, Dublin, to be examined in the subjects qualifying for promotion to Lieutenant. The examination was very simple and was passed almost as a matter of course, for it would have been an unforgivable breach of etiquette for officers of one regiment to plough a candidate sent up by another."

Marshal de Lattre de Tassigny

FRANCE LOSES A FINE SOLDIER

By
Major G. F. Charlebois, Royal 22e Régiment

This short article is written as a well-deserved, albeit belated, tribute to a distinguished and picturesque French officer who died in January

Marshal de Lattre de Tassigny

of this year. He is General Jean de Lattre de Tassigny, who was post-humously created the first French Marshal since the 1914–18 war.

With his passing, France has lost two famous soldiers within the space of about three years. The other is General le Clerc, who died after achieving an outstanding record in the Second World War.

Born at Mouilleron-en-Pereds (Vendée) on the 2nd of February 1890, Jean de Lattre de Tassigny began his brilliant career in the Army at Saint-Cyr and, in 1914, was a lieutenant in the Dragoons. By the end of the First World War he had been wounded four times, mentioned eight times in dispatches and held the rank of Battalion Commander.

Sent to Morocco and posted to the staff of General Poeymiran in 1921, he took part in the Riffian Campaign and, in 1925, was again wounded.

He was promoted to the rank of Major-General in March 1939, being the youngest officer to hold that rank in the French Army. In 1940 he commanded the 14th Division and fought at Rethel and on the Aisne from the 15th of May until the 11th of June 1940.

In France, where he remained after the Armistice, he undertook to foster and develop the spirit of resistance

against the enemy in the Military Forces which the conqueror had permitted France to keep. After the Allied landing in Africa, in November 1942, when the Germans crossed the demarcation live between Occupied and non-Occupied France, he ordered the troops under his command to join the Resistance and to organize "Maquis" groups. He was arrested and thrown in prison, first in Toulouse then in Lyon, and on the 9th of January was condemned to ten years' imprisonment. He was sent to the Riom prison, from which he escaped during the night of the 2–3 September 1943. Making his way to London, England, he offered his services to General de Gaulle, who promoted him to the rank of full general. In this capacity he undertook to reorganize and build up the forces which were destined to fight in France. Then, at the appointed time, he went into action.

On the 28th May 1945, as French representative, he signed the German capitulation. In the following November he was named Chief of the General Staff in the Department of National Defence. In 1948 he was appointed Commander-in-Chief of all Ground Forces of the Western Union.

In 1950, at the request of his Government, he went to Indo-China, and undertook to perform the near-miracle of dealing with a situation already grown desperate. Once on the spot, he succeeded in checking the enemy offensives and, subsequently, to counter-attack with success. But this campaign, which started so auspiciously, was to prove fatal to the General. The unhealthy climate of the Far East undermined his health and aggravated the sickness which brought about his death.

The Marshal died in France on the 11th of January 1952, after having spent his life in the service of his country, and he sacrificed to that same service his son, Lieut. Bernard de Lattre, who was killed in course of battle while defending a position against the Vietminh.

Jet Fuel

The British are looking toward motor fuel for their jets. Standard British jet fuel is kerosene, but it represents only a fraction of crude oil—some 7 to 10 per cent. Much larger quantities of aviation gasoline and motor fuel can be refined from crude, and British engines can use these fuels. However, they have the disadvantage of boiling at low temperatures and atmospheric pressures, and of catching fire more easily.—*Aviation Age.*

SIMULATED OPERATIONS

FROM AN ARTICLE IN "BELLONA" (POLISH LANGUAGE QUARTERLY OF MILITARY HISTORY PUBLISHED IN ENGLAND)

The idea of simulated action teams originated with the Polish 1st Independent Parachute Brigade in 1942. These units were never put into actual operation on the front, but lists of equipment and tactical instructions were worked out for their employment. This idea is of particular interest for it was an introduction into the war of the future, the war of automatons working at the touch of a push button.

It was believed that diversionary parachute operations in the enemy's rear, particularly at night, by small well-equipped teams (three to five men) would tend to mislead and draw the enemy forces in the wrong direction, thus greatly facilitating a planned main operation. The originators of the simulated action units decided, therefore, to enlist the aid of science and the advanced techniques of modern warfare in order to replace men with equipment in such operations.

In 1943, the research on this problem was transferred from the Parachute Brigade to the Engineers' Training Centre, where a special section was established with its own laboratory and matériel. Tests and experiments conducted by this organization demonstrated the wide possibilities for using simulated operations in combat. However, the end of the war interrupted these experiments.

Simulated operations were aimed at creating the illusion of combat through the means of technical equipment. Experiments were based on simulating actual combat noise and action to deceive the enemy.

First, the sense of hearing was considered. The explosions of artillery shells, the rattling of machine-gun fire in short and long bursts, and the whistling of shells in flight were best suited for affecting the senses of the enemy, especially at night. Simultaneously with auditory impressions, the sense of sight was affected. Smoke, lights moving over the terrain, fires, and troops in action all constituted powerful arguments in persuading an enemy that a battle was in progress in a given area. Also, the odour of smoke and gas affects the sense of smell and helps to add realism to the combat illusion.

As a result of analyzing the senses and experiences of a combat soldier, there was realized a definite need for simulating equipment which would paint a picture of actual battle. However, it was necessary to take one other important factor into

(*Continued on page 80*)

Letters to the Editor

TOASTS and TRADITIONS

Editor,
Canadian Army Journal.

The article "Gentlemen — the Queen!" in the May 1952 edition of the Journal contains some points which invite comment.

The author refers more than once to the "usual procedure" but one is left in some doubt as to just what this procedure is. He states "the wine is passed around the table to the right and the last glass to be filled is that of the Commanding Officer". Many variations in the procedure for the loyal toast do exist among the regiments of the British Commonwealth, but I venture to believe that in no mess is the wine passed "around the table to the right". Further, it is a rare occasion when the Commanding Officer is the last officer to fill his glass. The most common procedure is for the Commanding Officer to be seated in the centre of the table on the side nearest the main entrance to the dining room, with the President at the right and the Vice at the left end, respectively. Actually, the President can be seated anywhere, i.e. from where he can best supervise the table and the service. The wine decanters are placed in front of both the President and the Vice and on a signal from the former both taste it to "assure those present that it is fit to drink". The wine is then passed "to the left" and the Commanding Officer fills his glass in turn. In large messes where two or more tables may be in use, some local variations of this procedure undoubtedly will exist, but the general form remains the same. For example, the Commanding Officer rather than the President may propose the toast, and at extra long tables decanters may have to start being passed from several points, but these are just more of those deviations mentioned in the article.

The author also infers that Canadian regiments or units allied to British take on the traditions of the latter. This is a misconception prevalent among Canadians and devoutly to be discouraged.

No Canadian regiment would consider adopting the battle honours of its allied British regiment, yet regimental traditions, customs or quiffs are usually honours won long ago on the field of battle or distinctions awarded by a reigning sovereign or other high personage. The person who granted the tradition in the first instance is now hardly in a

position to permit its delegation to another regiment. To request authority to adopt one or more of these "honours" may prove embarrassing to the British regiment and to adopt without sanction would be even more embarrassing to the Canadian regiment. In essence, therefore, Canadian regiments should earn their own traditions.

Lieut.-Col. R. H. Webb,
Army Headquarters.

Regimental Marches

Editor,
Canadian Army Journal.

A copy of the *Canadian Army Journal* for December, 1951, has reached me and I wish to reply to Major N. Sadlier-Brown's letter on pages 78-79 therein.

In the first place I would like to thank Major Sadlier-Brown for taking such an interest in my article on "Regimental Marches",* from which I am assured that he read it critically, a feature which I welcome in regard to any subject upon which I write or lecture.

In short articles, such as those I wrote for the *British Army Journal*, one has to be very brief so that as many aspects as possible of the subject may be touched upon. It was due to this that I could not give the full history of the Regimental March of the Royal Engineers. I am, however, at the moment, compiling a history of the Regimental Marches of all Regiments and Corps of the British Army, in which the fullest details available will be included.

To come to Major Sadlier-Brown's criticism. In the third paragraph of his letter he notes that "Wings" was adopted "as a distinctive march past for the Engineers in 1870 . . ." In my article under reference I stated that—"Regimental Marches were not 'officially approved' until 1881", and as I write I have before me a copy of the first list of marches that were officially approved. The first item on this list allots "The British Grenadiers" to "Grenadier Guards and all Fusilier Regiments, also Royal Artillery and Royal Engineers". Messrs Boosey and Hawkes, who printed the Marches on Cards, have informed me that their first cards appeared in 1899 and No. 1 Card was "The British Grenadiers", the march of the "Grenadier Guard, Fusilier Regiments, Royal Artillery and Royal Engineers", which agrees with the official list.

**Reprinted from the* British Army Journal *and published in the September 1951 issue of the* Canadian Army Journal. *Major T. J. Edwards, MBE, FRHistS., the writer, is author of* Military Customs, *the second edition of which has now been published by Gale & Polden Ltd., Aldershot, England, 10s. 6d.—Editor.*

In the second paragraph of my article I also say that ". . . but before that year [1881] most regiments had a march which they considered particularly their own . . .", and "Wings", "adopted in 1870" (to quote Major Sadlier-Brown) "as a distinctive march past for the Engineers", would come into that category.

As to putting "Sapper" in quotes, during the last 30 years I have read a considerable amount of R.E. literature written by members of the Corps and have noted that some of them have written "Sapper" in quotes. In view of this perhaps someone outside the Corps may be excused for following the example of those in it. It is, however, a little confusing, particularly where one wishes to be correct, as I do.—*Major T. J. Edwards, "Somli", Summer Road, Thames Ditton, Surrey, England.*

SIMULATED OPERATIONS

(Continued from page 77)

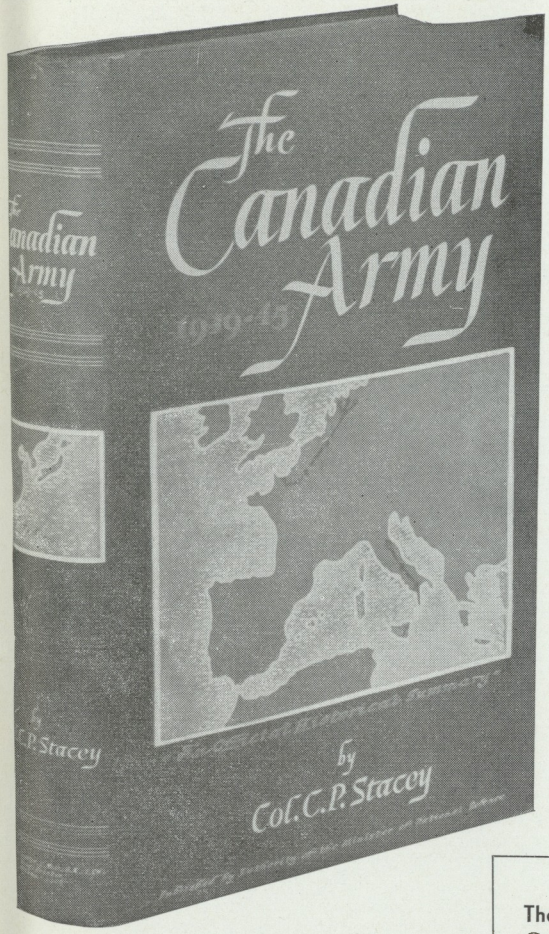
account: the infliction of losses on the enemy. For this reason, automatic weapons, controlled from a distance, as well as mortars and mines, were included in the plan of simulated combat.

The equipment used in simulated operations had to be simple to operate, transportable, easy to install, and relatively safe for operating personnel. In addition, simulating equipment had to be installed in terrain which was easily accessible and would provide cover for the equipment and personnel.

The simulated action team had to possess all the equipment necessary for any assigned mission. This included automatic weapons; sound equipment to simulate machine-gun, mortar, and artillery fire; explosives and fuses; rockets; various types of lighting devices; and firing panels for operating the equipment.

The equipment, which was designed to simulate a battle involving units of platoon strength, weighed approximately 200 pounds.

The simulated battle team was composed of five men: one officer or non-commissioned officer as commander, one technical non-commissioned officer responsible for the technical side of the installations, and three privates. The detachment had to be trained in the electro-technical and pyrotechnical fields. In experimental operations, a five-man team was able to install equipment to simulate the fire power of one infantry platoon in 15 minutes.



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