Canadian ARMY Journal

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CANADIAN ARMY JOURNAL

The aim of the Canadian Army Journal, which is published quarterly by the Directorate of Military Training under authority of the Chief of the General Staff, is to provide officers of the Canadian Army with information designed to keep them abreast of current military trends, and to stimulate interest in military affairs. The views expressed by authors are not necessarily those of the Department of National Defence.

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The Cover

The *Journal's* artist has chosen to depict the 43rd Regiment, a British light infantry unit, scaling the heights at Quebec on the morning of the Battle of the Plains of Abraham, 13 September 1759. (See "Quebec and the Campaign of 1759", page 19.)

Canadian Army Photograph

His Excellency leaving the Parliament Buildings after being installed as Governor General of Canada.

His Excellency Major-General Vanier

COMMANDER-IN-CHIEF OF THE CANADIAN ARMED FORCES

By commission of Her Majesty the Queen, His Excellency Major-General Georges Philias Vanier, DSO, MC, CD, became Comander-in-Chief of the Canadian armed forces when he was installed as Canada's 19th Governor General since Confederation.

His Excellency's commission was read at the opening of the installation ceremony held in the Senate Chamber, Parliament Buildings, Ottawa, on 15 September last.

A native of Montreal, Major-General Vanier was born in 1888 and was educated at Loyola College and the Laval and Montreal Universities. He was admitted to the Quebec Bar in 1911.

Volunteering for active service at the beginning of the First World War, he went overseas with the 22nd Battalion, later the Royal 22nd Régiment, and rose to the rank of major. He was awarded the Distinguished Service Order for conspicuous gallantry and devotion to duty when he led a portion of his battalion in the capture of a village. He won the Military Cross in 1915 and in 1918 a bar to this decoration for gallantry when he gathered the remnants of his battalion and continued the attack after the commanding officer became a casualty. He was severely wounded in both legs in this action.

In 1920, General Vanier transferred to the Permanent Force and after two periods as Aide-de-Camp to the Governor-General, he commanded the Royal 22nd Régiment from 1925 to 1928.

His diplomatic career began in 1928. He was seconded to the Department of External Affairs as Canadian Military Representative on the Permanent Advisory Committee for Military, Naval and Air questions, League of Nations, an appointment he held until 1931. He served as a member of the Canadian delegation to the London Naval Conference in 1930, and the same year was one of the Canadian delegates to the Assembly of the League of Nations.

He was named secretary to the office of the Canadian High Commissioner in London in 1931, and in 1939, with the rank of lieutenant-colonel, he was named Minister to France. He escaped from that country just before its capitulation to Germany.

After serving as District Officer Commanding Military District No. 5, in the rank of brigadier, he was promoted to the rank of major general on 1 January 1943, and appointed Canada's first Minister to the London governments of Czechoslovakia, Greece, Norway, Poland, Yugoslavia, Belgium, and the Netherlands. He also assumed the appointment of Canadian representative to the French National Committee in London. He followed the French Committee to Algiers when that area was liberated by Allied forces in 1942-43.

In July 1946, General Vanier was awarded the United States Legion of Merit, degree of Commander, for

Conference of Defence Associations

Prize Essay Competition—1959

The Conference of Defence Association have announced their fourth annual Prize Essay Competition, the subject for the 1959 contest being as follows:

"Discuss the strategic importance of Canada's North."

There will be two prizes: first, $200.00; second, $100.00.

RULES OF THE COMPETITION

1. The competition is known as "The Conference of Defence Association Prize Essay Competition."

2. The right to compete is limited to

(a) The Officers of the Canadian Army, Regular and Militia.

(b) Officers of the Canadian Army Supplementary Reserve.

(c) Regular Officer Training Plan Cadets at Tri-Service Colleges and Universities, and University Contingents of the Canadian Officers' Training Corps.

(d) Cadets of the Officer Candidate Programme.

3. The entries submitted must not exceed 5000 words in length. They must be typewritten double-space and submitted in quadruplicate.

4. The authorship of entries will be strictly anonymous. Each competitor must adopt a motto or *nom de plume*, which will be quoted at the top of the entry. With the entry there will be enclosed a sealed envelope with the appropriate motto or *nom de plume* typewritten on the outside, and the service number, rank, name and address of the competitor inside.

5. The title page of any published or unpublished work to which reference may be made, or from which extracts are taken, must be quoted.

6. Entries, which are to be addressed to the Editor of the *Canadian Army Journal*, Directorate of Military Training, Army Headquarters, Ottawa, Ontario, and marked "Conference of Defence Associations Prize Essay Competition" on the envelope, must reach the office of the *Canadian Army Journal* not later than 15 March 1960.

7. The Director of Military Training will arrange for a Board of Officers to make the initial selections. A Committee will be appointed by the Conference of Defence Associations to choose the first and second best essays from those selected by this Board. The decision of the Committee will be final.

8. The results will be made known in the July 1960 issue of the *Canadian Army Journal*, and the winning essay (and in certain cases the runner-up) may be published in that or a following issue.

9. The Conference of Defence

Commander-in-Chief of the Armed Forces

(Continued from preceding page)

his interest and assistance in the Allied cause during the Second World War.

Following the liberation of France from German occupation in 1944, General Vanier served in Paris for about nine years as Canadian Ambassador.

In February 1952, General Vanier was appointed Honorary Colonel of The Royal 22e Régiment.

The Army's Responsibilities

NEW CIVIL DEFENCE ROLE

By

MAJ.-GEN. A. E. WRINCH, CBE, CD, MAJOR GENERAL SURVIVAL, ARMY HEADQUARTERS, OTTAWA

This is the text of an address delivered by Maj.-Gen. Wrinch at the annual convention of the Canadian Association of Fire Chiefs held at Windsor, Ont., last August. A brigadier with the appointment of Director General of Survival Operations at the time he gave this lecture, Maj.-Gen. Wrinch has since been promoted and appointed Major General Survival. He is responsible for policy in National Survival training and for putting the Army's new responsibilities into effect.

—Editor.

* * *

I must thank you most sincerely for your kind invitation to attend the Annual Convention of the Canadian Association of Fire Chiefs and for permitting me to talk to you for a few moments on the new role of the Department of National Defence in Civil Defence.

As you know, the Privy Council Order redistributes Civil Defence duties at the federal level with effect from 1 September. The Order is dated 28 May and was tabled in the House of Commons on 2 June last so that while we were able to begin a certain amount of preliminary planning earlier, the allocation of duties was not definitely settled until the 1st June. The Services (the Army in particular) have always had a measure of responsibility in Civil Defence matters but our role was one of assisting in Civil Defence. The decision of the Government changes this fundamentally and allots National Defence primary tasks which we are taking on as quickly as we possibly can. However, I am sure you will agree that, with the threat that exists at the present time, Civil Defence poses tremendous problems at all levels. It is quite impossible to establish overnight plans and policies that, while urgently needed, must be given thorough study and consideration before being brought into effect. I hope that you will appreciate the situation that we are in and not expect me to give you detailed guidance now in the middle of August—only some 2½ months after the tabling of the PC Order, and only

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Prize Essay Competition—1959

(Continued from preceding page)

Associations, the Director of Military Training and the Editor of the *Canadian Army Journal* are not to be held responsible for the loss or return of any essay submitted; nor do they incur any liability whatsoever in connection with the receipt of the essays, and dealings therewith, the judging thereof, or the reports thereon.

10. The copyright in any essay which is published in the *Canadian Army Journal* will belong to the Conference of Defence Associations.

13 days before taking over.

May I begin by running through, very briefly, the responsibilities that lie with departments other than the Department of National Defence.

Under the terms of the Order, the Minister of National Health and Welfare retains his previous responsibilities having to do with assistance to provincial and municipal governments and to others in connection with medical, nursing, hospital and public health services and services to provide or arrange for provision of emergency accommodation, emergency feeding, emergency supplies, guidance and welfare assistance to persons who have lost or left their homes because of war or the fear of war, and maintenance and operation of the Civil Defence College at Arnprior, Ontario.

The Minister of Justice is given responsibilities for maintaining law and order and controlling and directing traffic in connection with Civil Defence exercises and operations. (But you will notice later that National Defence is given special responsibilities in this field under certain circumstances.)

The Office of the Prime Minister, through the Emergency Measures Organization, is given a co-ordinating role: is responsible for all of those plans that are not specifically allotted to other departments; responsible for assistance to provincial governments and municipalities, again, where such assistance is not the responsibility of another department; and finally is responsible for general liaison with other countries, with the North Atlantic Treaty Organization and with provincial governments.

I mention these responsibilities of other departments to bring out the fact that National Defence is not the department having over-all responsibility in the field of Civil Defence—though, as the Prime Minister stated in the House, our Minister, Mr. Pearkes, is Chairman of the Cabinet Committee on Emergency Plans, and it is this committee that guides all the work in this field. Our responsibilities in National Defence are set forth quite clearly in the Order. May I run through them so that we will be quite clear on what they are and on the action that we are taking.

They may be divided into three main groups. First, warning the public of an attack and later of the possibility of fall-out; second, conducting re-entry operations with all that this phrase implies, and, third, providing communications in support of the above two activities and for the federal government so that it may carry on in the event that an attack on our country has taken place.

The Warning Problem

The warning system that was established some time ago by Health and Welfare was considered adequate when it was designed and I believe it was adequate at that time. Since that time, however, the enemy threat has changed. The period of warning that we may expect to receive is very much less than it was previously and will be reduced again, to a matter of minutes, when Inter-Continental Ballistic Missiles and the submarine-launched missiles become operational. With the changing enemy threat, the Air Defence Organization has had to change and our warning system must keep in step with these changes and must be such that it makes the most effective use of all

operational information that is available to us and permits us to give the public as much warning of impending attack as we possibly can. The system that has been approved and which we are now implementing will allow warning to be sent out from a central location directly to all provinces and passed immediately on throughout each province to municipalities. This warning must go straight through from the central location to the sirens. Time will not allow for discussion as to whether or not a warning is to be given. If enemy bombers are on the way, the sirens will be blown with the various authorities at all levels being informed of the situation. We will either man this system ourselves, 24 hours a day and seven days a week, or we will arrange for other agencies to man it on this full-time basis. It must be able to go into operation immediately an enemy threat becomes apparent.

I mentioned the second aspect of warning, that of warning against fall-out. This warning will very likely be necessary whether the bombs land on Canada or on the Northern part of the United States because, if American cities or bases are hit, we will very likely receive fall-out in Canada. To be able to carry out our responsibilities in this regard we must have an extensive radiation monitoring organization both on the ground and in the air. In addition, if we are to forecast fall-out patterns and areas threatened, we must have the closest co-operation between the Department of Transport Meteoroligical Services and ourselves and we must have officers trained in fall-out prediction. We have a number of such officers available now and will be training more. We are studying the most effective and economical monitoring systems now in conjunction with the Air Force, Defence Research Board, Department of Transport, and other interested agencies, and will establish a system as soon as we have decided on the most appropriate one.

Re-Entry Operations

This is, of course, the subject in which you in the Fire Service are particularly interested. The Department of National Defence has been given the responsibility for carrying out re-entry into areas that have been seriously damaged or are subject to serious radio-active fall-out. These re-entry operations must include, first, consideration of the situation disclosed by the monitoring system and the predictions of our forecasters; the plan; then the reconnaissance of routes into the damaged area, both from the point of view of levels of radiation and physical condition; in many cases the clearance of these routes; the rescue and provision of first aid to those trapped or injured; the direction of police and fire services in those areas (direction—not active fire fighting, because we have very little fire equipment); the control of traffic and movement of people (we take over responsibilities from the Department of Justice in these seriously damaged or seriously contaminated areas); and the direction of municipal and other services for the maintenance and repair of such utilities as water and sewage systems. In addition, in time of crisis, we retain the responsibility that we have always had for the provision of emergency support to provincial and municipal authorities in the maintenance of law and order and in dealing with panic or

the break-down of civilian authority. I think you will agree that the first need in the event of disaster—disaster the magnitude of which is really beyond comprehension—is for a disciplined and organized body of men suitably equipped and trained to carry out these duties. I suggest to you that the Army is the best organization that could possibly be found for such work.

We have already ordered most of the radiac equipment that we need for this work and expect delivery in less than a year. Much of our rescue equipment is on order and we hope for delivery of much of it during the winter. We are studying other groups of equipment that we shall need for this task and are placing orders from time to time. Thus we shall very soon have adequate equipment for all of our training and our full-scale operational quantities shortly thereafter.

Our training is geared to survival operations with Militia training being almost entirely devoted to them; they must, of course, continue to be trained as soldiers first. Regular training includes adequate survival training along with the other training that must go on in the Regular Army. We have carried out a number of exercises and have learned much from them but much more remains to be learned. The response is excellent. Both Regulars and the Militia are entering into survival tasks with enthusiasm. I feel that the Militia in particular realizes that, if war should come, they will have the heaviest task they have ever been called upon to discharge—a real battle: the battle of survival.

You will undoubtedly ask how the Army can direct the police, the fire services and the public utilities when it is policemen, the firemen and others who have spent their lives learning their business in these fields. My answer to you is that we have no intention of trying to tell you, who are specialists, how to do your work. What we will tell you is when you can do it safely and where we believe priority must be given. Because there is no doubt whatsoever, in my mind, but that, as I have said, these re-entry operations are just as truly a battle as any battle that has been fought in any other war. This being so, there must be an over-all plan for battle—each part must fit correctly into the whole. It is only by a co-ordinated effort that we can hope to make any contribution toward the survival of our country.

Communications

Having spent many years in the Royal Canadian Corps of Signals, it is only natural that I should maintain that communications are the key to successful operations. We are going ahead with a programme to strengthen our communications and to expand them to permit us to handle our responsibilities under the Privy Council Order. I have already mentioned the basis of provision of circuits for the warning system. They will include both line and radio so that we shall be able to continue operation in the event of damage to parts of the system. Similar circuits will be provided so that in the event of emergency we will be able to keep in touch with all those with whom we must work.

Conclusion

Many of you have spent far more time than I on Civil Defence matters and are more qualified than I to discuss many of the problems.

However, I can assure you that we in National Defence, and I speak particularly of the Army, appreciate the great amount of work that has gone on previously. We are anxious to have your continued support and the support of all the Civil Defence workers. We would appreciate your advice. I hope that the Fire Advisory Council set up previously to advise the Federal Civil Defence Agency will continue in being and that we may look forward to continued advice from this Council. I have gone over minutes of previous Council meetings and there is much to be gained by continuing this organization. I believe that it should act in an advisory capacity to the Department of National Defence in future and propose to so recommend.

I have no intention of discussing assistance to provinces and municipalities at this time, though I know you are all interested in this from the point of view of increasing fire-fighting resources. I should think that division of costs might well be an item for discussion at the coming Federal/Provincial Conference and it would be wrong for me to anticipate those discussions. I would like to point out, however, that we in the Army have no intention of holding our survival equipment in likely target areas. To do so would be folly. I would hope, and recommend, that any fire equipment bought for survival in future would similarly be held at appropriate centres outside of likely target areas so that it would not be obliterated if our major cities were attacked.

In closing, may I stress once more the magnitude of the tasks we face and reiterate that the Privy Council Order re-allocates duties in Civil Defence. It does not hand Civil Defence to the Army as has been suggested on a few occasions. If our major cities were attacked, we would need a rescue force—for rescue alone—of something like half a million men. To this figure must be added the tens or hundreds of thousands needed for fire fighting, police duties, transport, hospitals, welfare, feeding and the hundred and one other jobs that will have to be done. It will be a question of mobilizing the remainder of the country—not simply of turning out the Army!

Preparedness in Peacetime

Those who question a large defence expenditure during a period of peace could perhaps profit by reading an open letter written by Dr. Connolly, the Archbishop of Halifax, read during the Confederation Debates of 9 February 1865 by the Honourable D'Arcy McGee. At that time it was feared that victorious northern armies of the United States would be directed against Canada. Archbishop Connolly wrote:

"There is no sensible or unprejudiced man in the community who does not see that vigorous and timely preparation is the only possible means of saving us from the horrors of a war... To be fully prepared is the only practical argument that can have a weight with a powerful enemy, and make him pause beforehand and count the cost."—*Contributed by Lieut. A. M. J. Hyatt, Historical Section, Army Headquarters, Ottawa.*

"Mailed Fist and Winged Foot"

MOBILITY IN MODERN WAR

By

MAJOR A. S. CHRISTIAN, MC, CD, DIRECTORATE OF MILITARY TRAINING, ARMY HEADQUARTERS, OTTAWA*

Introduction

During the course of history there have been few really radical changes in the methods of waging war, either from the standpoint of mobility or the type of weapon employed. Oddly enough, the advent of a new weapon has not necessarily had any immediate effect on the principle of mobility itself. It must be quite clear to all students of military history that the adoption of the horse as a military vehicle and the invention of the internal combustion engine greatly changed the face of war. Similarly, weapons progressed from the club and spear to the deadly cross-bow; then came the age of explosives which, although in itself a major influence on tactics, did nothing to bring about any appreciable change in the concepts of war. Until the dropping of the hydrogen bomb at Hiroshima, and even though many new automatic weapons had been developed, war was still based on a formula with gunpowder and the bayonet as the main ingredients. It should be quite obvious, therefore, that mobility and firepower in modern war are closely linked together, and must be developed and employed together.

One of the greatest developments in the art of war has been the adaption of the aircraft to military usage; the army has a great need for the airplane but it has taken many decades to implant this idea in the minds of some military and government leaders, despite the many lessons that came out of the two world wars and many minor conflicts of this century. From the earliest periods in military history, the soldier has tried to gain the advantage of mobility over his adversary in combat. This was illustrated in the basic tactical organizations developed by the Greeks and later refined by the Romans. It was Genghis Khan, however, who, perhaps more than anyone, demonstrated the potentiality of mobility in war.

The Growth of Mobility

It is believed that the horse was first introduced into primitive warfare about 2000 B.C. The origins of cavalry are lost in antiquity but it is mentioned in the Old Testament, and the Homeric and other early Greek legends frequently make mention of mounted soldiery. For the most part, early cavalry consisted of chariots which may have antedated the mounted warrior. The effectiveness of the chariot was often enhanced by attaching scythe blades to the wheels or axle ends. Chariots were drawn by two, three or four horses and carried either one or two persons, both standing. Roman writers recorded the use of the

**A graduate of the RCAF Staff College, Toronto, the author submitted this paper as an essay during the 1958-59 course. He served with the Fort Garry Horse during the Second World War.*—Editor.

chariot among the Britons and other nations of Europe.

Before the advent of the horse, the solid phalanx was the chief tactic of ground forces; manoeuvrability and pursuit were not a capability of this organization and victory depended on the choice of ground coupled with outright endurance. With the introduction of the horse, however, the very character of war was changed. Rightly enough, the advantage to the logistics aspect was the first to be appreciated; for since a horse is capable of carrying a greater load than a man, the supply systems of early armies underwent considerable change. Next, it was realized that by using the horse, greater range was given to the fighting force. The chariot was, in effect, the precursor of the wheeled transport, the armoured personnel carrier and the cargo aircraft; by this means commanders were able to have their troops delivered onto the battlefield in a fresh state and to mass them wherever it was deemed tactically advantageous.

The earliest weapons used by cavalrymen were the lance, the javelin or other weapons thrown by hand, and the bow. Archery on horseback is still practised in Japan today and each spring traditional ceremonies take place perpetuating this ancient trial of skill-at-arms. During the Middle Ages, when fighting was chiefly personal combat between knights, the iron-tipped lance was the chief weapon, seconded by the two-edged sword. Armour for both horse and rider became extremely elaborate and expensive due to the need for protection against the heavy lances, maces, swords and pikes that were generally used. Even this armour, however, was insufficient protection against arrows shot from cross-bows and longbows. With the introduction of gunpowder in the early 14th Century, the haphazard tactics of medieval warfare gave way to a stricter observance of organization and discipline.

In past ages, mobility had opened up new vistas and new opportunities for war and conquest. Alexander, Caesar and Genghis Khan had in their turn ravaged far and wide and destroyed any nation that opposed them, each through the exploitation of mobility. Centuries later, methods of cavalry organization, administration and operation went through any number of experimental changes. Napoleon, however, was the first to employ cavalry simultaneously in concealing his movements and in reconnoitring the front.

The most serious blow to the importance of cavalry was the invention of the repeating rifle and the machine-gun in the 19th Century. Against infantry armed with these potent weapons, cavalry was rendered virtually defenceless. As a result, the importance and function of cavalry changed drastically. Granted, it could be used for independent actions or in co-operation with infantry, thus retaining flexibility, but its usefulness was narrowed to reconnaissance and pursuit for which light cavalry was used. The day of heavy cavalry in the shock action role was virtually over. Cavalry, however, contributed much to the art of war. The introduction of mounted troops led to the birth of tactics — ability to manoeuvre, reconnoitre, charge, reinforce and pursue; also, there emerged a new factor—the power to surprise, and, therefore, the ability to attack the enemy morally as well as physically.

The First World War brought about the most drastic changes in the mobility of armies. Heretofore, except by rail, all movement of men and material was muscular, depending on horsepower or manpower, until the introduction of the motor vehicle began to modify strategy and tactics. It follows, that after the initial use of the internal combustion engine would come the armoured car and its offspring the tank. The armoured car was able to influence strategy through its ability to extend reconnaissance; the tank radically changed tactics for it neutralized the bullet which had been the key in the older form of war. The only weapon that the tank had to fear was the gun, which so long as it remained unarmoured would provide only limited protection to infantry against the tank.

Since an armoured formation cannot be easily concealed, how to effect surprise in tank warfare becomes a basic problem. When tanks were first used in the battle of the Somme in 1916, many critics of armour felt that surprise had been compromised forever and that the tank could never be used again with any degree of success. After the Battle of Cambrai the following year, in which tanks played a decisive part, the so-called experts claimed that a similar surprise could not be repeated. Naturally, surprise was not lost but remained a powerful potential of the tank's capability. The success of the tank was certain so long as its armour rendered rifle and machine-gun fire ineffective. Obviously the anti-tank gun can modify the surprise effect of the tank, but it cannot nullify it: the main effect of the tank is not in its armour and weapons, but in the paralyzing effect its mobility has on the enemy's mind.

With the outbreak of the Second World War came the birth of "blitzkreig" tactics—a new form of lightning war. Among the few who foresaw the potential mobility of armoured warfare were the German generals who avidly studied the writings of foreign visionaries such as Fuller, DeGaulle and Chaffee. The Polish Army fell to pieces under the impact of the German armoured assault in 1939, and the country was overrun without the German General Staff being aware of its full potential. In the Invasion of France, General Guderian was ordered to halt his tanks so that the infantry might catch up! At the turn of the tide in 1943, and the collapse of the Axis, similar use of mobility was made by the Allies during the battle for Tunis. Again, during the Invasion of Normandy, the achievement of surprise by the early use of tanks and the bold armoured advances of the Allied Expeditionary Force were instrumental in destroying and disorganizing all that remained of the German Armies in the West.

Probably the most radical change in warfare that the First World War revealed was the power of the airplane. Strategically, aircraft opened up a totally new field of reconnaissance; tactically, it only modified artillery tactics, but by being able to circumvent land forces, civil and military targets in rear of them were open to attack. During the Second World War the effect of airpower on mobility became increasingly apparent, revealing the lesson that, like other forms of mobility in the past, air mobility is most useful in moving man and his means of waging war to the area of decision, and once there to work

in close co-operation with him. Both sides began to appreciate the growing importance of air mobility; classic examples are its use by the Germans at Crete and in the south of France during the Allied landings in Sicily. The Allies also made full use of air mobility during the Battle of the Bulge, the re-supply of Bastogne and for the supply of General Patton's fast-moving 3rd Army. Had air mobility been fully appreciated and successfully employed it might well have shortened the war by many months.

Like the tank, the airplane as a weapon carrier played an important part in achieving tactical and strategical surprise through its mobility. Even more dramatically it proved that it could not only attack the will of the army but the political will and national will behind the army as well. The air force constitutes a category of military power which cannot be divorced from its sister services if its effectiveness is to be fully exploited.

Armour in the Atomic Battlefield

There is a wide divergence of opinion as to the influence of atomic weapons on armoured fighting vehicles. One thing is certain, their introduction will enhance the value of mobility, since rapid dispersion and rapid concentration such as can be effected by cross-country vehicles will become doubly necessary. Offensive operations on the atomic battlefield will be characterized by deep pentrations, conducted by mobile forces moved over the ground in armoured vehicles and through the air under cover of long-range atomic weapons. On the battlefield, firepower alone will not suffice to attain the decisive objective. Armour, with its mobility and shock action, is needed to move in rapidly after an atomic blast to exploit the atomic firepower, by preventing the enemy's reorganization, reassessment and counter-offensive.

To be capable of dealing with a large-scale enemy attack in conjunction with atomic weapons, an army requires three principal characteristics—mobility, quick reaction and protection against blast and radiation. There is a basic requirement for establishing and maintaining a favourable mobility differential over the enemy's forces. Quick reaction is the ability to seize and hold the tactical initiative. Finally, there is the need for the protection of the individual and of unit integrity, thus preserving the ability to conduct mobile operations. Tanks furnish complete protection against thermal effects of atomic weapons. Of all the effects, radiation has the greatest radius of potency against tanks. This limiting effect must be compared to a thermal effect which is approximately three times as great against exposed personnel. These two governing effects measure an inherent advantage of tanks on the atomic battlefield. The net gain of the protection against atomic effects provided by tanks is to maintain the ability to react quickly under atomic attack. Thus, unit mobility is not restricted by radiological effects; stabilized battlelines are avoided and flexibility is maintained. Exploitation of fighting flexibility is a question of firepower; the battlefield requirements for mobility, protection and quick reaction time all point to the need for armoured firepower so that the enemy can be engaged under conditions which will gain the necessary decisive objectives.

Current academic thinking con-

ceives a corps area in the atomic battlefield some 10,000 yards wide, with depth provided by a series of zones. This may or may not transpire if ever an atomic war is fought. This conception differs very little from the conventional lay-out of formations during the Second World War. Granted, lip service is paid to the use of mobility and the requirements for "spreading out", forcing the enemy to "bunch up" and "catching him off-base". All this is supposed to be accomplished with a corps composed of fairly conventional infantry divisions "beefed up" with armoured reconnaissance units and armoured brigade groups. In essence, this formula still envisages stabilized battle lines, with the depth made up of a vulnerable concentration of formations within restrictive boundaries. To employ slow-moving infantry formations on the atomic battlefield, within such clearly defined lines and zones is inviting defeat and annihilation. To really exploit mobility, armoured formations supported by tactical air forces and a family of missiles will obviate the needs of such zones and will permit maximum flexibility in making deep penetrations, quick dispersions and rapid disengagement and reorganization. Only by employing these tactics is any field force likely to retain its organic integrity on the modern battlefield.

Many proponents of infantry have suggested that the tank is now the "sick beast of the battlefield". Nothing could be more indicative of old-fashioned thinking. The tank, with its mobility and firepower as well as its protective features, more than ever opens the door for some radical changes in tactics and strategy. In his book, *The War on the Civil and Military Fronts*, General G. M. Lindsay observes: "Whenever a new weapon, or a new tactical method is introduced, it is always looked upon with grave suspicion. That is one reason why a study of the history of war is so important, since through it can be seen over the ages the effect on war of such novelties. Such a study shows that the human mind has been slow to grasp the possibilities of a new arrival and to adopt the tactics which will put it to its best use. In fact, as in the case of the tank, the new arrival has usually been treated as an adjunct to, and clothed in the tactics of, the older arms."

It would surely be a grave mistake in the age of missiles and supersonic aircraft to have the land forces move about the battlefield at "infantry speed". It is time for a new look at real mobility even if it requires radical changes in command and control and in communications. It does not seem logical to possess the support of fast-firing weapons of the air and missile variety if the capability of armour to move and manoeuvre quickly is not fully exploited. This by no means implies that tanks are the only ground weapons: what is needed are well trained, supermobile forces equipped with tactical nuclear weapons from the most basic infantry weapon to the medium-range missiles and supported by long-range missiles. In modern war, nuclear firepower will complement mobility to an ever increasing extent.

Armour in the Air Age

In the preceding paragraphs, an attempt has been made to show the suitability of mobile armoured units in the atomic age. This does not mean to suggest that there is little room for improvement; far from it,

for any avenue which opens up a new approach to mobility should be explored immediately. It is very doubtful that the armour of the Western Alliance is ideally organized and equipped for atomic warfare. With the emergence of such radical new tools of war as guided missiles, helicopters and large cargo aircraft, armoured commanders who must be prepared for battles of the future should take a close look at their techniques and organization. These are basic requirements for the employment of armour in modern war.

First, it must have strategic mobility: with the trend to the encompassing of larger and larger land areas, an entire continent can only be considered a tactical theatre. If armour is to engage in the varied forms of warfare anywhere in the world, it must be given strategic mobility. Secondly, the requirement for tactical mobility which will enable forces to concentrate quickly for the attack and disperse rapidly thereafter, is apparent. In this age of missiles, electronics and infrared equipment, the massing of large formations at obstacles and defiles is not acceptable. Obstacles will have to be crossed on a broad front with units well dispersed. In many instances, the ability to do this will depend on the amphibious or airportable capability of the armoured equipment. The faster pace and increased dispersion of atomic war demands a simplified mobile and flexible administrative tail. Present-day motor transport echelons will not only be vulnerable to attack but might well restrict the exploitation of the mobility of armour.

In many ways tanks are well suited to the concepts of future wars. There is, however, a limitation created by the weight and characteristics of armoured vehicles. The weight of a tank restricts its movement over some bridges and limits flexibility in certain types of terrain. The heavy consumption of petrol makes refuelling a major problem, particularly if long moves are planned. Many of the drawbacks of armour could be overcome by the effective use of cargo aircraft. There is no reason why tanks cannot be provided with strategic and tactical mobility by this means as well as depending on aircraft for re-supply. To achieve this, a lighter, air-transportable tank would have to be developed; re-organization of armoured units, streamlined to delete wheeled vehicles, would be necessary.

In the past, the suggestion that tanks be moved by air has met with considerable opposition, due in part to the incompatability between armoured equipment and the capability of transport aircraft. Before the feasibility of this idea is treated lightly, the trends in cargo aircraft and tank development must be considered. Aircraft of the C133 type, capable of carrying 50,000 pounds of cargo across the Atlantic, are now the modern air transporter. By reducing the weight of tanks to ten tons or less, one aircraft would be capable of carrying several tanks. In the atomic age there appears to be no requirement for the heavy tank; in fact, a trend to lighter, faster tanks will ensure that the true spirit of mobility is maintained.

Similarly, tactical mobility could be attained by flying in light engineer units in assault aircraft to prepare landing strips for the heavier tank-carrying cargo airplanes. Such aircraft are in use by the United States Army today. Just as air transport can give strategic

and tactical mobility to armour, the trend toward re-supply by air should be fostered. This would seem to be the least radical innovation since aircraft have been employed as cargo carriers in the armed services for several decades. The mobility of armour in the future will depend on air support; therefore, armoured personnel must be taught the capabilities of air support and to think in terms of air transportability of tanks and their administrative needs.

Finally, air forces can provide great assistance to armoured formations by providing tactical air support. Contrary to many views, the advent of the missile age does not necessarily obviate the requirement for close support by a fighter-bomber type aircraft. Air support is necessary in every stage of operations; no major assault could be launched successfully without first achieving a fair measure of air superiority. Without a continuous system of air reconnaissance, armoured units would have little knowledge of the battlefield; moreover, this reconnaissance is dependent to a certain degree on air superiority. Interdiction alone will not be enough to support an armoured operation; aircraft will of necessity be employed tactically in all operations. Dive bombers firing rockets at enemy tanks will be decisive, and bombing of anti-tank guns and missile sites will be equally effective. There is virtually no end to the number of combinations that can be employed in joint armoured and air operations. It would be well to look back at the success of the German panzers in France and Russia to realize that this powerful team is capable of punching a hole through the most "impregnable" of defences. Without air support, the mobility of armour cannot be used effectively. General Gavin has stated: "Between now and 1965 the form of mobility of most significance will be air mobility — we have hardly begun to explore the combat potential of the airplane. Tactical decisions will be won or lost depending on how we learn to understand the uses of the air vehicle in the near future."

The Soviet Outlook

It is necessary only to take a quick look at the Soviet Army organization as it exists today, compared with their forces at the end of the Second World War, to realize that they learned very sharply the importance of mobility in war. The present-day army shows an increase in the proportion of armour in the armoured divisions, the mechanized divisions, the armoured regiments within the infantry divisions as well as considerable numbers of independent armoured brigades. Also worthy of note is the fact that a high proportion of anti-aircraft units have been added to the army, indicating a consciousness of the dangers of air attack.

Current thinking in the Soviet Army emphasizes the fact that tanks are essential to achieve decisive results in ground combat under modern conditions. They have realized the importance of increased mobility, manoeuvrability, depth, dispersion and deeper penetrations with a quickened tempo of operations, and have reorganized to meet this. Soviet forces in the offensive will use armour to exploit atomic firepower. On the defensive, the Russians consider enemy armour to be the primary target because this is the most serious threat. The Soviets have introduced light recon-

naissance tanks and amphibious personnel carriers into their formations and are stressing the importance of battle intelligence. All of this denotes a keen interest by the Russians in a doctrine of prompt tactical action against their enemy's atomic capability.

Armies which oppose the Russians must come to realize that they will be up against forces equally aware of the importance of mobility and dispersion. From Liddell Hart's book, *The Soviet Army*, is drawn the conclusion that the Russians still suffer from two old weaknesses—first, the tight central control, the lack of initiative, the unwillingness to shoulder responsibility at most levels of command and, second, a continuing shortage of skilled technicians and tradesmen. These are serious weaknesses, especially under conditions of nuclear war.

Canadian Military Needs for the Atomic Age

Canada's armed forces may be required to fight together with her allies in a total nuclear war, in a limited war or on her own in a United Nations police action role. This means that components of the army in particular must be transportable by either sea or air, and that whatever forces are employed must produce the optimum of effectiveness. Canada, with her limited manpower available for the armed forces, should concentrate on developing the type of force best suited to her needs. It is not proposed to discuss the naval or air forces required except where it may affect the needs of the army. Naturally, these two latter services will have problems similar to those of the army. It would seem that with a relatively small population but good industrial potential, the emphasis on mechanized units, particularly armour, would best serve Canada's needs for her own defence as well as her contributions to NATO or UN commitments.

Canada should be economically and physically capable of producing large numbers of light battle-worthy tanks along the lines of the United States armoured personnel carrier T113* which could be fitted with almost any type of weapon. In effect, by minor modification and adaption, this vehicle could serve as a light tank. It could be the basic vehicle for armoured formations since it can mount a .30- or .50-calibre medium machine-gun; it can be used as a rocket launcher, a mortar carrier, anti-tank missile carrier, a wireless vehicle, a command post vehicle, an ambulance and even a cargo carrier. By having one standard vehicle with its resulting simplification of provision and maintenance alone woud seem to justify the adoption of such a vehicle, not to mention its amphibious and air transportable capabilities.

The Canadian Army, short of integration with the RCAF, should have its own integral assault and logistic aircraft in order that combat units may be guaranteed full mobility. The armoured units in particular must have helicopters and light aircraft for reconnaissance as well as the support of a tactical air force to provide air superiority, reconnaissance and close fire sup-

**The Canadian Army has developed a new amphibious armoured personnel carrier (nicknamed "The Bobcat") which, while essentially a troop carrier, can be used in several other roles. This vehicle is described in the October 1958 issue of the* Journal.—Editor.

port. There appears to be no reason why the three armed services could not be integrated into one homogeneous force. It would be trained and equipped for service anywhere, and with the size of force that Canada can support, join with her allies in a total war if so required.

Conclusion

To be effective and to survive on the atomic battlefield, today's armies, if involved in a nuclear war, must embody the spirit of the "blitzkreig" tactics. They must possess the mobility and dash of cavalry and be capable of destroying the enemy without becoming involved in a battle of attrition. They must hit hard and disengage immediately. In order to achieve the mobility for such a role, it would appear that a combination of armour and air power is essential. Since tanks need all the supporting arms essential to operations, the term "armour" in this case well might represent an armoured division or an armoured brigade group, complete with components of infantry, engineers and the rest, but with a predominance of tanks. For in the tank lies the firepower of the formation. All vehicles in such an organization should be tracked, capable of high speeds, amphibious and air portable.

Armoured units and formations must possess commanders and personnel who are "air conscious"—they must learn to appreciate the extra mobility which aircraft can give to armour. Notwithstanding the possession of any family of guns or missiles by armour, close air support will always be required by armoured forces in battle. The combined action of mobile forces and air transported forces promises more decisive action in deep penetrations that have never been possible before. Battles will no longer be fought with a view to wearing down the enemy piecemeal, but by using mobility to ensure success.

Canada's armed forces, of necessity, must be flexible and up-to-date. To produce the best fighting machine from within the resources of the nation, every effort must be made to ensure that the Canadian armed forces are provided with the best available armament and equipment so that they can produce the optimum in mobility, firepower and efficiency, together with the general high standard which has always been their trade-mark.

Application of the Principles

Tactical problems require the application to specific cases of such fundamental principles as surprise, mass, mobility, economy of force, and the like. Often, the application of one principle may support that of a second. For example, economy of force in one sector of a battle zone —that is, spreading your strength thin—can make units available to concentrate so as to apply the principle of mass, or superior force, at the decisive point of the attack. On the other hand, in the application of the principle of mobility, it may prove impossible to conceal the movement of friendly forces and thus occasion the violation of the principle of surprise . . . The difficulty is, of course, not in learning the principles but in recognizing, in each situation, which ones should be stressed and which ones can be subordinated.—*General Maxwell D. Taylor, U.S. Army.*

200th Anniversary

Quebec and the Campaign of 1759

By

COLONEL C. P. STACEY, OBE, CD, FORMER DIRECTOR OF THE HISTORICAL SECTION, GENERAL STAFF, CANADIAN ARMY*

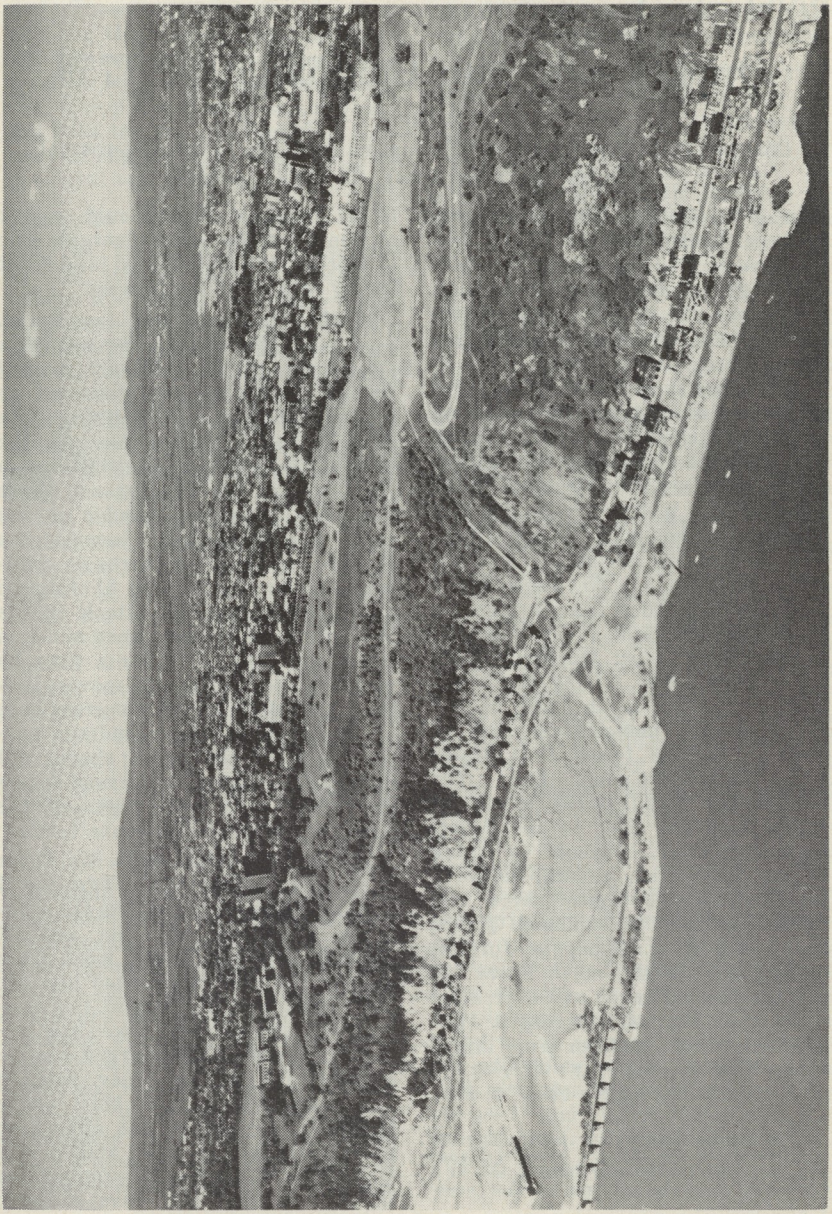
In 1959, Quebec City recalls the most celebrated episode in its history and in the history of Canada—the siege of the city by General Wolfe and the battle of the Plains of Abraham, which took place just 200 years ago.

In the early summer of 1759, a great British armament was feeling its way up the River St. Lawrence. The French believed that it might be defeated by mere difficulties of the channel; but a fleet with Charles Saunders to command it and James Cook among its navigators was not easily balked. On 27 June Wolfe and the vanguard of his army landed on the verdant Isle of Orleans only a few miles below Quebec. Wolfe had counted upon seizing the Beauport shore, the north bank of the St. Lawrence immediately east of Quebec; but he found that Montcalm had anticipated him. The French had fortified the whole six miles from the city to the Montmorency River. Forced to think again, the British general seized a foothold on the south shore and raised batteries to bombard Quebec across the river. Early in July he landed also on the north shore below the Montmorency and thereafter confronted Montcalm across it. But the Frenchman, with an army larger than Wolfe's but far inferior in military quality, wisely chose to stay in his defences. Wolfe could not get at him or at the only vulnerable side of Quebec, the ill-fortified land front facing west and south-west.

Wolfe worried and vacillated, producing and abandoning one plan after another. In mid-July several British ships successfully passed up beyond Quebec — something the French thought impossible. On the 20th Wolfe developed in detail a plan for a landing a short distance above the town, only to abandon it the same day, apparently because the French were moving forces to counter the new threat. On 31 July he made an ill-conceived attack on the other flank at Montmorency and was repulsed. Thereafter for a time he made no more offensive moves, limiting himself to burning a great part of Quebec with his incendiary projectiles from the south shore, and laying waste large numbers of farms and villages on both banks of the river, a policy of deliberate terror.

Wolfe's relations with his three brigadiers, Monckton, Townshend and Murray, deteriorated as the campaign proceeded. At the end of August, however, Wolfe, weak from a fever that had prostrated him for some days, and aware that the summer was almost over, asked the brigadiers' advice. They urged him to abandon his Montmorency position and concentrate for a blow above Quebec. The French had almost no provisions in the city, and if the British cut their line of supply from the west they would have to come

**The author wrote this article for the supplement on the Queen's visit to Canada published by The Times of London, and it is reproduced here by courtesy of that newspaper.*—Editor.



out from their fortifications and fight. It was good advice, and Wolfe took it.

The brigadiers further recommended a landing a dozen or more miles above the city, where the shore

A Biography of the Author

A graduate of the University of Toronto, Colonel Stacey undertook post-graduate studies at Oxford and Princeton University, from the latter of which he obtained the degree of Doctor of Philosophy.

He joined the Royal Canadian Corps of Signals (NPAM) in 1924, was commissioned in 1925 and was transferred to the Reserve of Officers in that corps in 1929 when he went to the United States. At Princeton University he lectured in history, but returned to Canada to join the army. As Historical Officer at Canadian Military Headquarters, London, he supervised the historical programme of the Canadian Army Overseas during the remainder of the war, visiting the Canadian fronts in Italy and North-West Europe.

Colonel Stacey was appointed Director of the Historical Section, General Staff, in 1945 and held this appointment until he retired from the army last summer. He is at present lecturing in history at the University of Toronto.

Among his published works are the following:

Canada and the British Army, 1846-1871: A Study in the Practice of Responsible Government (1936).

The Military Problems of Canada: A Survey of Defence Policies and Strategic Conditions Past and Present (1940).

The Canadian Army, 1939-1945: An Official Historical Summary (1948). This book received the Governor General's Award for Academic Non-Fiction for that year.

Six Years of War: The Army in Canada, Britain and the Pacific (1955). This was the first volume of the Official History of the Army in the Second World War. The author has written another volume in this series which bears the title *The Victory Campaign: The Operations in North-West Europe, 1944-1945*, and which is to be published later this year.

Quebec 1759: The Siege and the Battle (1959). This book deals with the Battle of the Plains of Abraham.

The Plains of Abraham Battleflieds as it is Today

The Citadel and the city walls are just out of the photograph to the right, the Anse au Foulon out of it to the left. Montcalm's army formed with its left in the area of the nineteenth-century Martello tower which appears prominently in the left centre. Wolfe's right was in the vicinity of the modern prison, the group of buildings to the left of the tall apartment house. Much of the action took place on ground now built over.

was low and the main French force far distant. Wolfe concurred; but bad weather postponed the attempt, and before it could be made the general changed his mind. His attention had been attracted—how, we do not know—to the Anse au Foulon, less than two miles from the city walls, where a good track, inadequately guarded, climbed the steep cliffs. An attack here was a desperately perilous expedient, but it was undertaken on the morning of 13 September. The British had extraordinary luck; a succession of long chances all turned out in their favour, and they were deployed on the Plains of Abraham before the French fully realized what was happening.

Montcalm rushed to meet them. With characteristic impulsiveness he chose to attack without waiting for Colonel de Bougainville, who was marching against Wolfe's rear. His force, heavily diluted with militiamen, was unequal to European-style fighting in the open field. The deadly close-range fire of the British regular battalions blew the French to ruin. Both commanders led their troops most gallantly, and both were mortally wounded; Wolfe died on the field. Quebec surrendered five days later.

The beaten army got away to the west; and in the following April, under the Chevalier de Lévis, it made a valiant attempt to recover Quebec. Lévis defeated the British garrison in another battle, fought on almost the same ground as Wolfe's; but British sea power decided the final issue. The Royal Navy relieved Quebec, and in September 1760 Montreal, and Canada, surrendered to immensely superior British forces.

Quebec in 1959, a thriving modern city, boasts some skyscrapers and has long burst the bonds of its 18-century fortifications. Its respected university, Laval, has lately transferred many of its activities from the old town to a site in the suburbs. Yet Quebec looks back with pride to its famous past. It is hard to believe today that in the 1870's an imaginative Governor General, Lord Dufferin, had to save the city walls from destruction at the hands of local vandals who wished to use the ground for building. The walls still stand, and, some historians to the contrary, are, though much repaired and somewhat altered, the same that watched the Battle of the Plains. The great Citadel, built by the British Government in 1820-31, incorporates some French work of as early as 1720 and indeed earlier. Today it houses the depot of the Royal 22e Régiment, a corps of French-speaking regulars whose Colonel-in-Chief is the Queen and whose Regimental Colour carries honours won in Flanders, Italy, Holland and Korea.

Much of the battlefield of 1759 has been built over, but the southern portion of it has been preserved by the Dominion Government as the splendid Battlefields Park. The track up which Wolfe's guns were hauled, and near which his forlorn hope scaled the cliff, still exists, overlooking Wolfe's Cove Dock, where the Atlantic liners lie; it is a paved motor-road today. East of the city the rural Beauport shoreline where Montcalm's men marched and counter-marched in 1759 has become a crowded area of small dwellings, institutional buildings and "motels". But Quebec retains unimpaired its vast natural and historical charm; for the imaginative visitor it is a place of infinite fascination.

BLACK WATCH RIFLE TEAM WINS CHAMPIONSHIP

FROM A REPORT ISSUED BY THE DIRECTORATE OF PUBLIC RELATIONS (ARMY), ARMY HEADQUARTERS, OTTAWA

Winner of the Letson Trophy and designated Canadian Army (Regular) Championship Rifle Team is the ten-man squad from the 2nd Battalion, The Black Watch (Royal Highland Regiment) of Canada, Camp Gagetown, N.B., with a team total of 3135 points of a possible 4280 in the two-day annual Army Central Meeting held at Connaught Ranges near Ottawa last August.

The top eight shots of this team together with the top three individual high scorers from other teams will represent the Canadian Army (Regular) at the National

Canadian Army Photograph

This ten-man team from The Black Watch (Royal Highland Regiment) of Canada, Camp Gagetown, N.B., outshot five other teams to win the Army championship. *Left to right, front row:* Pte. H. S. Pilkie, McGivney, N.S.; Pte. D. V. Gibbs, Sault Ste. Marie, Ont.; Pte. J. J. Breau, Amherst, N.S.; Pte. P. M. Justason, Black's Harbour, N.B. *Left to right, back row:* Cpl. H. E. O'Neil, Guysboro, N.S.; WO 1 (RSM) F. E. Blakney, Truro, N.S.; Captain H. M. Power, Camp Gagetown, N.B.; Lieut. R. S. McConnell, Antigonish, N.S.; Sgt. J. O. Piercy, Courtney, B.C.; Sgt. J. P. Steacy, North Vancouver, B.C.

Rifle Association Prize Meeting at Bisley, England, in 1960. Although the new FN (C1) rifle was used here, the team will continue to use the .303 rifle in England.

Winner of the Rose Bowl as highest individual aggregate scorer was WO 2 J. T. Murphy, Toronto, a member of the Royal Canadian School of Military Engineering School team, with a total of 427 points of a possible 535.

Second high scoring marksman with 426 points was Pte. F. Oudijev, Quebec City, a member of the Second Battalion, Royal 22nd Regiment, who was shooting with the Quebec Command Team. Third with 425 points was Sgt. E. Zwolak, Victoria, B.C., of the 1st Battalion, Princess Patricia's Canadian Light Infantry, shooting with the Western Command team.

Runner-up for the Letson Trophy was the Royal Canadian School of Military Engineering, Chilliwack, B.C., with 3000 points, followed by Headquarters Quebec Command with 2865, Headquarters Prairie Command with 2777, and the 1st Battalion, The Royal Canadian Regiment, Ipperwash, Ont., with 2731.

Winners of the Team Snapshooting (The Roberts) competition were the Royal Canadian Regiment team. A four-man team from the Engineers won the Falling Targets (The Cheylesmore) competition. Four marksmen from the Black Watch won the Obstacle Course (The Hamilton-Leigh) competition.

Members of the Black Watch team are Capt. H. M. Power, Camp Gagetown, N.B.; Lt. R. S. McConnell, Antigonish, N.S.; WO 1 (RSM) F. E. Blakeney, Truro, N.S.; Sgt. John O. Piercey, Courtney, B.C.; Sgt. G. P. Steacy, North Vancouver, B.C.; Cpl. H. E. O'Neil, Guysboro, N.S.; Pte. J. J. Breau, Amherst, N.S.; Pte. D. V. Gibbs, Sault Ste. Marie, Ont.; Pte. H. S. Pilkie, McGivney, N.S.; and Pte. P. M. Justason, Black's Harbour, N.B.

Each member of the team mentioned above has been awarded a Canadian Army (Regular) Rifle Team Championship badge.

The Bisley team will consist of Capt. Power (1956 member of the Army Bisley team), Lt. McConnell, RSM Blakeney, Sgt. Piercey, Sgt. Steacy, Cpl. O'Neil, Pte. Pilkie and Pte. Gibbs, together with WO 2 Murphy, Sgt. Zwolak and Pte. Oudijev.

The Letson Trophy was presented in person by Major General H. F. G. Letson, who donated the cup for annual competition in 1955. Lieut.-Gen. S. F. Clark, Chief of the General Staff, presented the other prizes.

In the Hands of the Soldier

In view of the present political situation, there exist almost insurmountable obstacles to a general disarmament and honest outlawing of war. A difference of opinion, based on the principles that involve the future of mankind, can hardly be decided by protocol or agreements, and the safety of the capitalistic as well as the proletarian order lies in the hands of the soldier.—*Dr. Hans K. Gunther in "Wehrwissenschaftliche Rundschau" (Germany).*

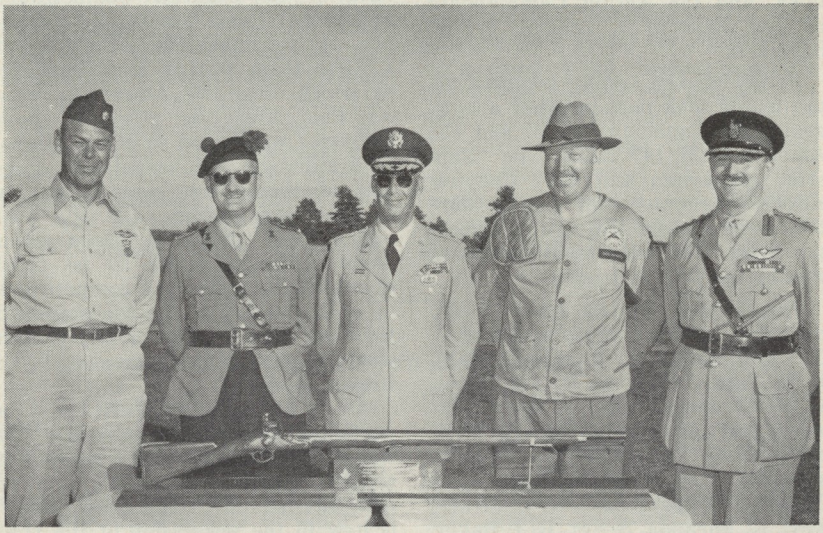
INFANTRY SCHOOL MARKSMEN WIN "BROWN BESS" TROPHY

FROM A REPORT ISSUED BY THE DIRECTORATE OF PUBLIC RELATIONS (ARMY), ARMY HEADQUARTERS, OTTAWA

"The Brown Bess", an antique musket trophy, was captured by the sharp-shooters of The Royal Canadian School of Infantry in a shoot held in September at Mons Range in Camp Borden against the United States Infantry Centre Advanced Marksmanship Unit from Fort Benning, Ga.

After more than 7000 shots had been fired, a margin of 58 points gave the Canadians the win. A two-day event which included such competitions as a standing shoot at the 100-yard mound and a fire and movement 500-yard "run down", netted the Canadian team 5988 points and the U.S. team, 5930.

Two of the best Army marksmen in North America were present at



Canadian Army Photograph

Standing behind the "Brown Bess" musket trophy won by the Canadian Army rifle team with a margin of 58 points are, left to right: Major Clayton C. Carr, captain of the U.S. Army team from Fort Benning, Georgia; Lieut.-Colonel W. H. Seamark, Chief Instructor, Royal Canadian School of Infantry, Camp Borden; Major-General Paul L. Freeman, Jr., Commandant of the U.S. Army Infantry School, Fort Benning; Major R. W. Hampton, RCS of I; Colonel P. R. Bingham, Director of Infantry, Army Headquarters, Ottawa.

this meet: Major R. W. Hampton of the RCS of I who fired the high aggregate 644 and SFC Loyd Crow (U.S. Army) who obtained a 626.

The Americans travelled by car and began arriving here early Sunday morning, 6 September. Monday and Tuesday were spent getting the feel of our "Long Branch .303 rifles" with which they were required to fire the match. On Thursday afternoon the event was marked by visit from Major-General Paul Freeman, Jr., Commanding General of the U.S. Infantry Centre, Fort Benning. He was accompanied to the range by Colonel P. R. Bingham, Director of Infantry, Army Headquarters, Ottawa, and the Acting Commandant of The RCS of I, Lt.-Col. W. H. Seamark.

Following the trophy competition, the teams took part in other events, using the Canadian "C 1" and the American "M 14" rifles. The "Roberts" eight-man and the "Cheylesmore" four-man team events were both won by the U.S. The "Hamilton-Leigh" four-man team event was won by the RCS of I team.

The United States Army Team consisted of: team captain, Major C. C. Carr, Major R. S. Dobak, Capt. J. E. Parks, Capt. D. S. Red, Capt. V. M. Claderon, Capt. T. W. W. Atwood, 2nd Lieut. W. J. Powell, Master/Sgt. A. O'Neill, M/Sgt. H. Hankins, M/Sgt. J. McCaskull, Sgt. First Class L. G. Crow, SFC. K. C. Evans, SFC. A. Miranda, S/Sgt. R. I. Baker, Sgt. J. Maskew, Sgt. C. D. Davis, Sgt. R. Turner, Sgt. C. Wilson and Specialist 4th Class L. Hutchison.

The Royal Canadian School of Infantry sharp-shooters were: Major R. W. Hampton, Major W. J. Strachan, Capt. W. V. Hall, Capt. H. R. Gardner, Capt. J. F. Samson, Capt. J. J. Barrett, WO 1 H. E. MacDonald, WO 2 C. F. Rowell, S/Sgt. L. A. White, Sgt. R. B. Cathline, and Cpl. R. J. Purdy.

Shooting competitions between the the two Infantry schools were first held in September 1957 at Camp Borden, Ont. The visit was an exchange of ideas on the various methods of marksmanship and competition shooting as practised in the United States and Canada, respectively. Each team used the service rifle of its country. Competitions and targets were standard for Canada. In November 1957, The RCS of I Rifle team visited Fort Benning, at which time the Americans won. At that time the rifles of both countries were used in competitions, with standard U.S. targets. As a result of these first competitions, a shooting programme for the two schools was prepared, based on a home-and-home series to be fired annually, the rifles and competitions in each country to be the standard for that country. The trophy chosen was the 18th century musket, "The Brown Bess".

A tradition established for this particular competition provides that the visiting team takes home the trophy, whether they have won or lost. Accordingly, "The Brown Bess" is now in the possession of the U.S. team; in 1960 the RCS of I marksmen will shoot for the trophy at Fort Benning.

Loyalty to One's Juniors

Loyalty to one's superiors is easy —they pay our salary. What is more difficult but equally important is loyalty to one's juniors.—*V. Krishna Menon.*

ROYAL 22e RÉGIMENT TEAM WINS TOP HONOURS AT NATO MARKSMANSHIP COMPETITION

Soest Germany: A team of riflemen from the 3rd Battalion, Royal 22e Régiment, last August won top honours in rifle matches in what is considered one of the most important international military firing competitions. The Canadian marksmen fired their FN (C1) rifles in four practices to outshoot six other NATO Army teams in the annual Prix Leclerc meet at Hammelburg in the United States zone of South Central Germany.

Top prize, the Leclerc Trophy, was won for the second time in a row by the team from the U.S. Army who heavily outpointed the Canadians in light machine-gun practices. In the final total the R22eR shooters placed fourth behind the U.S., Great Britain and Germany. Fifth, sixth and seventh places, respectively, went to Belgium, the Netherlands and France.

The Canadian NATO soldiers defeated all others in rifle practices to take home the second best award of the day, the General Eisenhower Trophy. Their two-man pistol team placed fourth. Total points for five two-man teams gave these teams sixth place in light machine-gun tests. For the first time in any competitive firing the Canadian soldiers used the new FN (C2) rifles which have replaced the Bren gun in the Canadian Army.

Top rifle marksmen of all 84 international competitors was Cfn. R. J. Mosdell of Kitimat, B.C., who won the Gold Medal for rifle by firing a score of 125. Second best rifle shot of the day was Pte. I. Auclair of Baie Comeau County, Charlevoix, P.Q., who won the Silver Medal with a total score of 115. The other trophy to come to the Canadian Brigade was a bronze medallion for placing fourth in the day's shoot.

Montgomery on Mobilization

I am convinced that we must overhaul our mobilization plans. Mobilization as known to us during the last two wars looks archaic against the background of nuclear war. The word brings to mind an entirely erroneous picture, one portraying the effort spread over days, weeks, and even months before completion. Perhaps we need a new word for mobilization in a nuclear age. We need a system which is effective in a matter of hours, following national radio warnings. It must not be dependent on vulnerable communications systems. It must be founded on a body of men and women, all of whom know in peacetime exactly where they go in war and what they do. The system must include civil defence workers. The whole question requires a new look. We are not paying sufficient attention to this vitally important part of national and allied defence.—*Field Marshal Montgomery.*

NEWS PHOTOGRAPHERS AND THE ARMY

By

MAJOR J. D. DONOGHUE, CD, DEPUTY DIRECTOR OF PUBLIC RELATIONS (ARMY), ARMY HEADQUARTERS, OTTAWA*

The photographing of a major Army ceremony requires careful planning by the units participating if the best possible pictorial record is to be obtained without having the photographers interfere with the ceremony.

Regular and Militia officers responsible for ceremonial parades may be interested in the "drill" used by the Directorate of Public Relations (Army) to solve this problem and to give the Army photographers "the best of both worlds". This system was used during the 1959 Royal Tour and its success was demonstrated by the many excellent newspaper photographs of the various ceremonies in which Her Majesty the Queen presented Colours. Examples of the photographs obtained may be seen in the July 1959 issue of the *Canadian Army Journal* and the 6 July 1959 issue of *Life Magazine*.

Senior officers at Army Headquarters, Commanding Officers and news photographers have all expressed satisfaction with the results obtained when the drill has been followed.

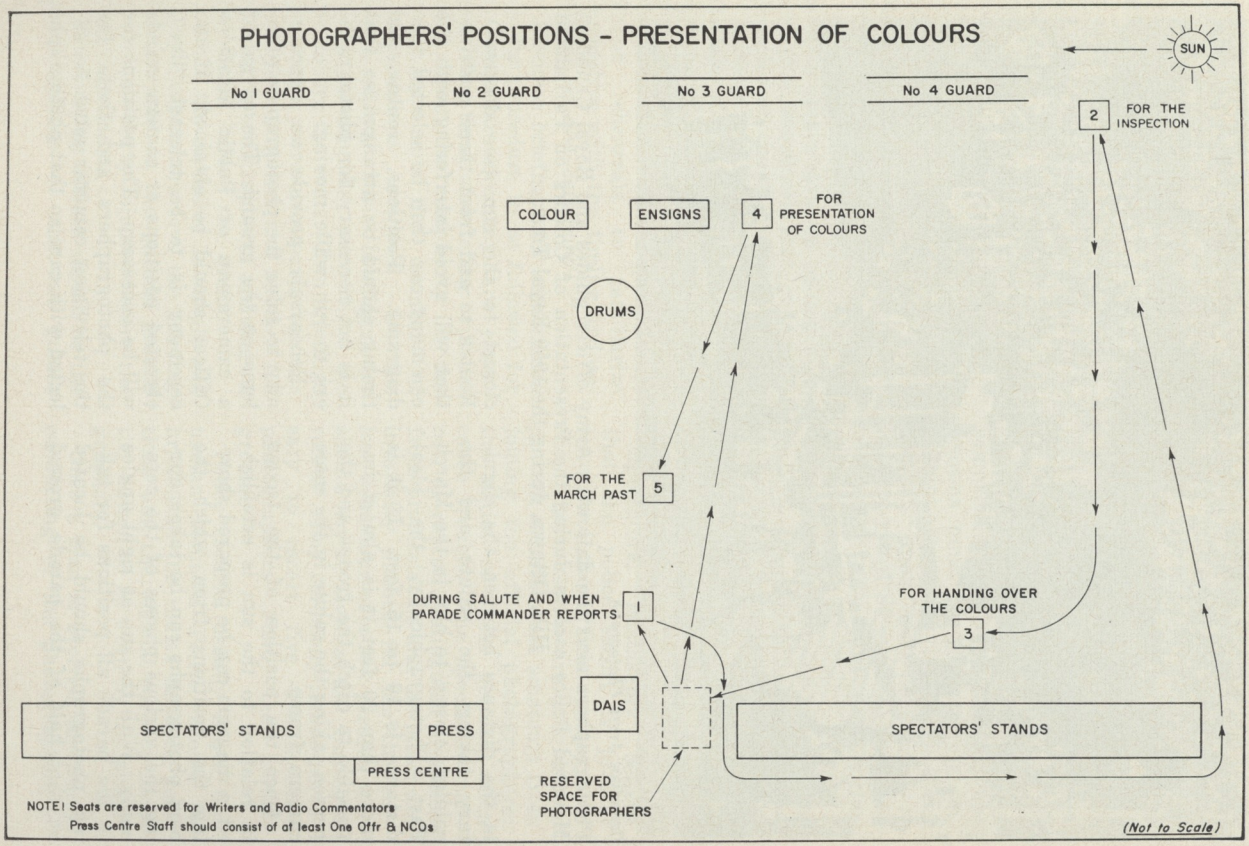
The principle on which the procedure is based is simple. It is that the Army should assume the responsibility for getting the photographers to the best positions from which to get good pictures of the ceremony. This principle has been adopted as a result of several years of experience in attempting to satisfy the reqirements of the news photographers and Commanders.

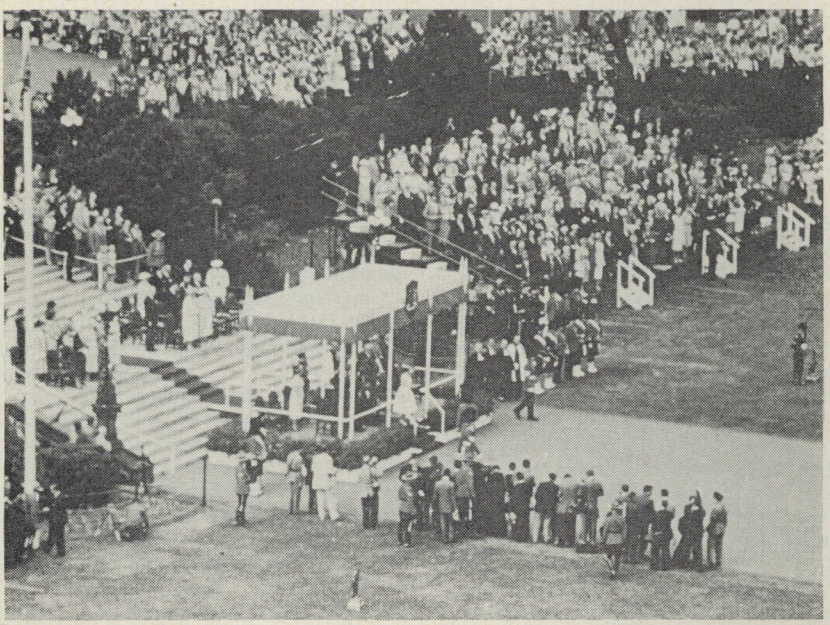
The first factor to be considered when putting the drill into effect for a ceremony is the source and direction of the light essential to produce satisfactory pictures. What will be the position of the sun in relation to the ceremony? (The most ideal light conditions usually occur between 1000 and 1400 hours.)

The best position of the sun in relation to a ceremonial parade is at right angles to the left flank (see diagram on page 29.) This provides effective side lighting of both the troops and the dignitaries facing them. During the March Past the troops will be facing the sun and the person taking the salute will be side-lighted from the right.

A second factor to be considered

**The author has been employed with Public Relations since September 1942, and during the Second World War he served as a conducting officer for war correspondents in North-West Europe and as Adjutant and Assistant Editor of "The "Maple Leaf", the Canadian Army's Wartime newspaper. After the war he served as Public Relations Officer in Prairie Command until returning to Germany in 1954 as commanding officer of No. 1 PR Unit. He attended the Canadian Army Staff College in 1956 and on conclusion of the course was placed in charge of the Photographic Section of DPR (Army). He obtained a B.A. at St. Paul's College, Winnipeg, Man.*—Editor.


PHOTOGRAPHERS' POSITIONS - PRESENTATION OF COLOURS
SUN
No 1 GUARD
No 2 GUARD
No 3 GUARD
No 4 GUARD
2 FOR THE INSPECTION
COLOUR
ENSIGNS
4 FOR PRESENTATION OF COLOURS
DRUMS
FOR THE MARCH PAST 5
DURING SALUTE AND WHEN PARADE COMMANDER REPORTS 1
FOR HANDING OVER THE COLOURS 3
DAIS
SPECTATORS' STANDS
PRESS
PRESS CENTRE
SPECTATORS' STANDS
RESERVED SPACE FOR PHOTOGRAPHERS
NOTE! Seats are reserved for Writers and Radio Commentators
Press Centre Staff should consist of at least One Offr & NCOs
(Not to Scale)



Canadian Army Photograph

Photographers near the dais with Army officer guides and Royal Canadian Mounted Police escorts during the Presentation of Colours on Parliament Hill, Ottawa, during the 1959 Royal Tour.

is the distance between the dignitary taking the salute and the soldiers closest to him in the March Past. Photographically, the ideal distance is 10 to 15 feet. If it is more than 20 feet it is almost impossible to catch the troops and the person taking the salute in the same camera frame.

Once the position of the troops in relation to the sun is established, a diagram can be prepared showing the positions from which the best photographs can be taken during the various phases of the ceremony. With the sun at right angles to the parade all positions for taking photographs should be located on that half of the parade ground closest to the sun (see diagram). Routes to and from these positions that will avoid interfering with the ceremony can then be selected (see diagram). Positions, routes and timing should be arranged so that it is not necessary for photographers to run while moving.

Rehearsals provide an opportunity to solve the photographic problems on the ground. The advice of a cameraman or Public Relations Officer should be obtained. If the ceremony is to be telecast "live", elevated positions or camera stands will be necessary. The positions for the photographers and those for the television cameras must be selected with care so that photograph-

ers and TV cameramen will not block one another. Compromise is necessary but experience indicates that satisfactory solutions are possible.

Rehearsals may reveal that minor changes in the ceremony are necessary if good photographs are to be obtained. For example, in some of the Presentation of Colours ceremonies during the Royal Tour it was found that slight changes in the positions of one or two of those taking part meant the difference between good photographs or no photographs at all.

Dress rehearsals should also be used to obtain close-up photographs and film sequences that cannot be recorded on the day of the event.

Success of the drill depends on the use of officer guides and a police escort to move the official photographers from one position to the next. These officer guides must attend rehearsals to familiarize themselves with the timing and sequence of the ceremony.

Advance briefings for cameramen on the procedure to be followed for a particular ceremony are essential. The time of briefing will depend upon the complexity of the ceremony and the number of photographers assigned to the event. Royal Visit briefings for Army ceremonials were held the day before the event. Two briefings sometimes were necessary, one for local photographers and another for visiting photographers arriving a few hours before the event.

When the ceremony is simple and the photographers few, the briefing can be held on the parade ground twenty to thirty minutes before the ceremony starts.

The briefing officer should be the senior officer of the two guides working with the cameramen authorized to move on the parade ground. He should have a large diagram showing the ceremony and the photographers' positions.

It is imperative that the briefing officer gain the confidence of the photographers. This will be achieved if the selected camera positions are obviously suitable. Where compromise has been necessary the reasons must be given. It is important that the briefing officer impress upon the photographers that they will be taken to the right position at the right time during the ceremony.

If a large number of photographers are expected to cover the ceremony, some method of designating those authorized to go on the parade ground will be required to distinguish them from amateur photographers.

Spectators, mistakenly believe that the police escort is present to control the official photographers. These escorts are provided to prevent unauthorized amateurs from joining the official photographers: the antics of these persons often cause trouble. The spectators cannot, of course, distinguish amateurs from professionals and the latter are invariably blamed for the thoughtless behaviour of a few persons who should not be there at all. During a recent Army ceremony it was necessary to escort five unauthorized photographers from the parade ground.

Police escorts, usually Royal Canadian Mounted Police, should be briefed on the routes between positions and the official card or identity button to be worn by the photographers.

Once a plan is evolved, the actual conducting of the photographers is

Canadian Army Photograph

Rehearsal

Canadian Army Photograph

Event

From Bing's cartoon series, "Herbie"

"Picture or no picture, I'm not runnin' past that open space again fer no photographer!"

relatively simple. The two officer guides lead the group from position to position by the selected routes. On arriving at a position the officers separate. The photographers work up to but not beyond the imaginary line joining the guides and within the flanks marked by the two officers. The police escort moves in the rear of the group and assists in keeping it compact. It has been found that if the plan has been well worked out, the photographers cooperate willingly.

Two officer guides and two constables can provide assistance for forty photographers. Approximately that number of photographers were in the group covering the Presentation of Colours on Parliament Hill in Ottawa on 31 June last.

It is not always possible, however, to cater to such a large group. Confined space and the religious aspects of a ceremony may dictate the use of a "pool" in which a limited number of photographers, including motion picture camermen, is desig-

nated to represent the group. Their film is made available to the whole group. As newspapers prefer to use photographs produced by their own photographers, the pool system should be avoided if possible in any ceremony for which publicity or a good photographic record are required. Normally, Army photographers should not be used to provide pool photographers.

When civilian photographers are covering an event they should be given precedence over Army photographers. Army photographers must move with the others when on the parade ground. Civilian photographers will not submit gracefully to control of their movements if they see that Army personnel are allowed to roam unrestricted.

The best of planning cannot take into account all the problems and possibilities of an event. However, the system outlined above will provide for most contingencies and will result in a high quality pictorial record that will please not only the professional photographers but the officers and men who participated in the ceremony. While "Herbie" in Bing's cartoon on page 34 was quite right to refuse to risk life and limb in a second dash across that street, a unit putting on a ceremonial parade risks nothing and can gain much by planning for the requirements of the photographers who will be present.

Getting To Staff College

Times change and it is no longer possible to secure a vacancy at the Staff College, Camberley, by the method described in *The Memoirs of Field Marshal the Viscount Montgomery of Alamein, K.G.* (London, 1958):

"I have said enough to make it clear that by the time the 1914-18 war was over it had become very clear to me that the profession of arms was a life-study, and that few officers seemed to realise this fact. It was at this stage in my life that I decided to dedicate myself to my profession, to master its details, and to put all else aside.

"It was not clear to me how all this would be done and I knew none of the top leaders in the Army. I was certain that the first step was to get to the Staff College; this was re-opened when the war ended and the first course was a short one in 1919, for which I was not selected. I fastened my hopes on the second course which was to assemble in January 1920, and to last for one year. When the names were announced for this course I was not selected. But all was not yet lost.

"The Commander-in-Chief of the British Army of Occupation in Germany at the time was Sir William Robertson. I did not know him. He was fond of tennis and I was invited one day to play at his house in Cologne; I decided to risk all and tell him my trouble. He had struggled a good deal himself in his youth and had a kind heart for the young; this I knew and I hoped for the best.

"Shortly after that tennis party I heard that my name had been added to the list and I was ordered to report at the Staff College, Camberley, in January 1920. The C.-in-C. had done what was required. The way now seemed clear."—*Contributed by J. M. Hitsman, Historical Section, Army Headquarters, Ottawa.*

Three-Year Tour in Europe

Troop Rotation Underway

FROM A REPORT ISSUED BY THE DIRECTORATE OF PUBLIC RELATIONS (ARMY), ARMY HEADQUARTERS, OTTAWA

More than fifteen thousand Canadian soldiers and dependents are being moved this fall by sea and air in the rotation of personnel between Canada and the 4th Canadian Infantry Brigade Group in Germany.

The two-way move affecting two-thirds of the Brigade strength covers a three-month period from the departure of the first advance party by ship from Montreal on September 8 to the arrival of the last planeload from Europe in mid-December.

For the first time large numbers of troops are being flown to and from Germany, with 31 round-trip flights carrying a total of 1526 soldiers each way. The first 14 round trips are by Trans-Canada Air Lines which began October 2 from Ottawa, carrying 75 soldiers on each flight. The remaining flights are by Royal Canadian Air Force beginning November 11, with 28 soldiers on each planeload. The shuttle airlift will be completed by December 15.

Another innovation in this fifth major rotation of Army personnel since the 27th Canadian Infantry Brigade Group arrived in Germany in the fall of 1951 is that many married officers and men are being accompanied by their families on board ship from Canada to Europe. Previously dependents followed on later ships after the heads of families had obtained accommodation in the Canadian Brigade area. This year 680 permanent married quarters are available for occupancy for the new troops in Germany. This is enough to accommodate more than half the dependents. Soldiers who have not been allotted permanent married quarters are sent overseas on earlier drafts so that they can rent quarters from German civilians, their dependents following on later ships.

This is the first troop movement under the Army's revised rotation plan for Canada's NATO Brigade in Germany. The new policy calls for a three-year tour of duty in Europe instead of two years. Final development of the plan will see the rotation of one-third of the overseas brigade group each year.

While the 27th Canadian Infantry Brigade Group was in Germany during the period 1951-53 no dependents were moved to Europe. Consequently married personnel served overseas for one year while single men did a two-year tour. When the NATO Brigade was moved from the Hannover area southwest to its present location in the Soest area in the fall of 1953 suitable quarters became available for the accommodation of dependents.

The major units which returned to Canada this fall are the Royal Canadian Dragoons; the 2nd Battalion, Canadian Guards; the 3rd Battalion, Royal 22e Régiment; and the Reconnaissance Squadron of Lord Strathcona's Horse (RC).

Replacing these units in Germany are the 1/8 Canadian Hussars, Camp Gagetown, N.B.; 1st Battalion, Ca-

nadian Guards, Camp Petawawa, Ont.; and the 1st Battalion, The Black Watch (Royal Highland Regiment) of Canada, Camp Aldershot, N.S.

Remaining in Germany until the fall of 1960 will be the 2nd Battalion, Queen's Own Rifles of Canada, and the 1st Regiment, Royal Canadian Horse Artillery.

* * *

FOURTH CONTINGENT OF ARMY PERSONNEL AIRLIFTED TO EGYPT FOR DUTY WITH UNEF

FROM A REPORT ISSUD BY THE DIRECTORATE OF PUBLIC RELATIONS (ARMY), ARMY HEADQUARTERS, OTTAWA

The fourth contingent of Canadian Army personnel since 1956 to be sent to Egypt for a year's tour of duty with the United Nations Emergency Force was airlifted over a six-week period this fall.

Beginning 16 September, the RCAF transported about 530 soldiers to the Middle East and the same number back home in 19 round-trip flights. The aircraft flew from Dorval, Montreal, to El Arish, Egypt, and return.

Not involved in this regular fall rotation is the 100-man Reconnaissance Squadron of the Royal Canadian Dragoons, who will not be replaced until early next year. The Dragoons have been patrolling a sector of the demarcation line between Egypt and Palestine since last February.

The first Canadian troops to serve with UNEF arrived in Egypt in November 1956, a month after the Suez crisis. Other countries serving with the international force include Denmark, Norway, India, Sweden and Yugoslavia.

No Ready Formula in Strategy

In mathematics the application of the same method to the same figures unfailingly produces the same result. In strategy, on the other hand, twice times three seldom makes six; the answer may be ten now and five next time. Let us be on our guard, therefore, against the one-track mind which, confronted by the complex problems of the art of war, tries to find a ready technical solution by means of instruments which are much too inflexible to cope with varied and constantly changing situations. The competition to bring the army to the final pitch of technical perfection, frequently without any consideration of practical usefulness, produces a mechanical and lifeless formula which becomes gradually more questionable when applied to the actual conduct of war and, especially, when it is a matter of supporting foreign policy.—*Colonel F. O. Miksche.*

Flashback: No. 28

Bridging The Twente Canal

NARRATIVE SUPPLIED BY THE HISTORICAL SECTION,
ARMY HEADQUARTERS, OTTAWA

The photograph on the opposite page shows Major General Chris Vokes (who lately retired after 34 years' service), then GOC 4th Canadian Armoured Division, visiting the divisional engineers who were bridging the Twente Canal at Delden, Holland, in April 1945. As a former engineer officer, the Commander could take a technical as well as an operational interest in the work.

On 2 April 1945, the 2nd Canadian Corps, advancing northward on a three-division front to clear the north-eastern Netherlands, reached the Twente Canal. The 2nd Canadian Infantry Division in the centre was first across (night 2-3 April). While the 3rd Canadian Infantry Division was moving up on the left, the 4th Canadian Armoured Division, on the right, sent The Lincoln and Welland Regiment (fighting under 4th Canadian Armoured Brigade) across the canal near Delden at 7:00 p.m. 3 April. This unit was firmly established on the north side by 2:15 a.m. 4 April. In a diversionary attack on lock-gates about 1000 yards west of the main crossing, The Lake Superior Regiment (Motor) also secured a bridgehead. By 4:15 a.m. the 9th Canadian Field Squadron had completed a Class 40 bridge across the gates. Meanwhile the 8th Canadian Field Squadron had begun the main bridge for the operation, a 180-foot Class 40 Bailey pontoon bridge, near Delden. Construction was made more difficult, as usual, because the original bridge, blown into a mass of twisted wreckage, had to be bypassed. This entailed hours of heavy work, constructing approaches on both banks to the new bridge site. The work was rendered dangerous by systematic mining of possible bridge sites by the enemy. The engineers suffered sixteen casualties from a booby-trapped mine. Work was also hampered by a self-propelled gun which dodged about north of the crossing site, firing down the Canal. However, in spite of these obstacles the bridge was opened at 4 p.m. 4 April, and by midnight the 4th Canadian Armoured Brigade had formed a firm base north of the Twente Canal.

Mobility the Key to Survival

The [U.S.] Army is convinced that it must avoid detection in order to survive in nuclear warfare. Thus mobility provides the key to survival on the battle-field. This applies not only to combat type units but also to logistical support units. The Army already has in its structure the mobile supply, maintenance, communication, survey, medical, and engineer units which are essential for the support of widely dispersed, fast-moving missile operations. This constitutes a complete logistical-system-on-wheels and is a "must" for missile operations in the nuclear age.—*Secretary of the* [*U.S.*] *Army Wilber M. Brucker.*

ABOUT STYLE IN WRITING

J. W. Heron in The Royal Bank of Canada Letter

Some people think that style is like the geometer's "straight line", which is not anything anyone has ever seen. In fact it is not a line at all, but simply the straightness of a line.

Others believe that style can be seen and developed. They say it is a pattern in words expressing some idea of the writer's mind within a beautiful fabric.

We all know that some writers have the ability to beautify the commonplace and to illumine the dingy and the sordid. Cardinal Newman summed up this talent in his essay on style: "The Art of Letters is the method by which a writer brings out in words, worthy of his subject, and sufficient for his readers, the thoughts which impress him."

It is a counsel of despair to maintain that we are incapable of adding dignity, distinction and a certain allure to what we write. Writing is not a hallowed mystery, remote and secret. The ability to express ourselves is not a frill for the edges of life, but an indispensable tool of our self-understanding, our understanding of others, and our rational contact with the world around us.

It is a great tragedy that many men and women with valuable thoughts, yes, even with sublime ideas, have failed to develop skill in communicating them to others.

Someone brought "style" out of the clouds of uncertainty by listing its elements under five headings: economy, simplicity, sequence, climax and variety. A letter or a book checked by these points is fairly likely to be a good piece of communication, and these are virtues that can be developed.

An obvious striving after style, whether of the rough, tough sort or the polished, brittle kind, is ridiculous. Writing should be simple and natural, not insipid but sinewy, not brief for the sake of brevity, but compressed for the sake of intelligibility, not dainty but definite and brisk. The writer must sit firmly in the saddle, guiding his mount.

The Need for Style

It is not enough, if a writer wishes to stir people's minds, to put down facts as he would note on a blueprint the particulars about an engineering project. An executive may know his business inside out, but he needs also to be able to convey his ideas about it to his people in such a way as to win the response he desires.

A certain unaffected neatness and grace of diction are required of any writer merely as a matter of courtesy. But a genuine style is the living body of thought, not a costume put on for a special occasion. One doesn't need the verbal music of Shakespeare, but one must be able to make a pattern out of a muddle and build up a certain unity of matter and manner.

A genuine style is the expression of the writer's mind. Great writers do not aim at style for its own sake. They are inspired by their subject, and this inspiration shows itself in their words. They do not leave us in doubt about their topic: Macbeth is about ambition, Othello is about jealousy, Timon of Athens is about money, and King Lear is about re-

nunciation. The style fits the subject, and it is only by being wilfully blind that one can fail to understand what Shakespeare is saying.

What is the nature of your subject? What impression do you wish to convey about it? Is your writing designed to entertain, inform, teach, sell or condole? Is it designed to be appreciated universally, by a certain class, by your superiors or subordinates, by your family?

The personality of the writer's style will reflect itself through the way in which he handles his subject with the purpose he has in mind. The resulting letter or article or book will show the writer's personal sense of the facts he sets down.

Perhaps you like Gertrude Stein's style: many people do. She wrote in "What is Poetry?": "One of the things that is a very interesting thing to know is how you are feeling inside you to the words that are coming out to be outside of you."

An individual style is impossible to the writer who takes his material from books straight to his fingertips without undergoing examination in his head. Such a product has no more individuality than a plaster cast of a cast, and not nearly the same perfection.

Brightening the Subject

Style should be used to brighten the intelligibility of a subject which is obscure. It joins the instructive with the agreeable. It avoids monotony. It uses ornament where ornament will be effective, and is redundant if repetition will make a point.

If one is to say something significant he must rise above the sheer enumeration of first order facts. Writing is wearisome without contrast and without development of a thought. A white canvas cannot produce an effect of sunshine; the painter must darken it in some places before he can make it look luminous in others.

What is the application of this principle of art to writing a letter? It lies in this: we need to set off our facts by feelings and our feelings by facts; we need to introduce an occasional irrelevancy, perhaps, to lighten the letter, to add artistic piquancy.

When we follow this course we make our writing easy to read. The force of all verbal forms and arrangements is great in proportion as the mental effort they demand from the reader is small.

Some people confuse economy of language with abruptness, and simplicity of expression with the fatuous. We need to use the fewest number of words and the simplest form of composition to secure the full effect we desire, but this purpose also requires that we use enough words and give sufficiently detailed explanations to enable our readers to grasp our ideas. It is the needlessness of words and superfluous complexity that ruin style.

The audience must be considered. Some ideas cannot be conveyed in a way that would be intelligible to all persons who can read, but the writing should be simple enough for the rank of intelligence expected of the probable readers. Many authors believe that if they express themselves in such a way as to be simple enough for ordinary minds they are also appealing to a more astute or specialized reader because he will recognize the reason for simplicity and will admire the clarity of expression.

Simplicity, paradoxically, is the outward sign of depth of thought.

The writer who presents his ideas in the form of parable and symbol, using commonplace words, is avoiding more showy qualities in an effort to make his meanings clear. He has made a disciplined selection and ordering of his material in advance of composition.

The nature of the subject-matter must be given more than a passing glance. We speak of various types of style, like narrative style, historical style, or an argumentative style. In all these, the style is the expression of a kind of thought, level with the subject and adequate to it. When a writer's power is fully developed in keeping with his expanded intellect, he may write in all styles, changing with the character of his subject, detecting the fitness of certain verbal arrangements for certain kinds of thought, achieving harmony between matter and expression.

Style is not Artificial

Having a style of writing is not to write stylishly, to try to please by novelty. The use of unusual phrases and little known words displays only a childish liking for tinsel.

It is not worth while to reach the picturesque or the poignant at the cost of being unnatural. If the language used is discordant to the position of the writer or to his topic, readers will laugh or fall asleep.

Imitation of another writer's style is dangerous. It is like wearing a mask. It gives rise to a feeling of insincerity. It does not show a fine sense of style but the vulgar instinct to display.

Many essayists have written about style, and most of them agree in placing sincerity first in importance. "If you wish me to weep, you yourself must feel grief," said Horace in his *Art of Poetry.*

There are certain elements of composition which need to be mastered as a dancer learns her steps, but the style of the writer, like the grace of the dancer, springs from a deeper source. Style must be genuine: the expression of the author's mind.

Out of sincerity, out of being brave enough to express himself in his own way, following the moods of his mind: out of these come simplicity, sequence, and variety, and style becomes the dress of the writer's thoughts.

Nothing is so forcible as truth plainly told. On the other hand, we might write a poem made up of lines that sound prettily on the tongue, but so insipid as not to linger a moment in memory.

About Developing Style

Good prose is suitable to its environment of place, time and occasion; it is suited to the nature of its writer, the sort of topic, and the character of the person to whom it is addressed. The style in which it is written is not designed to make us see the writer, but his subject and thoughts.

Prose does not wish to compete with poetry. Prose will not turn away from rhythm if rhythm is necessary to its purpose, but it will seek rather a modulated utterance, a medium between prose and poetry. It will seek to be lucid and easy, but when opportunity offers it will also be graceful, witty, pathetic or imaginative. It may attain these qualities by being casual, colloquial and personal; by avoiding blaring trumpets and the mouthings of actors striving to make points.

The elements of prose style can be developed, as everyone can testify of his own experience. We can learn to use proper words in proper places. We can learn to use right phrases in the right way.

Let us repeat, in different words, a definition of style, so as to assure ourselves that style may be developed. Style is exactness, saying what one believes and means. Surely this can be learned. Style is related to fitting what is written to the apprehension and need of the reader. Undoubtedly, this can be developed. Style is the expression of the writer's personality. Who will deny that this can be improved?

Some things, like the dates in history can be learned by repeating them, but style is not like that. It has to be appraised with sensibility and then practised.

This is a painstaking quest. Our pens will sometimes be at fault for a while, no matter how accomplished we are. We will pause, rewrite, and amend before we are satisfied that our language has done justice to what we have in our minds to express. Genius takes pains, improves by practice, suffers failures, succeeds often on a second or third try. Plato, it is said, wrote the introduction to his *Republic* seven times over in different ways.

Waiting upon inspiration is a snare. The crests of great composition rise only upon the back of constant work and effort.

This work consists not alone in pounding typewriter keys or scratching with a pen. It entails reading and re-reading what one has written—reading it aloud to get the ear-feeling of it. It means a continuing course of self-criticism: have I said what I am trying to say? have I used words that really express it? are my images, parables or metaphors the best possible? have I said anything that is unavoidably ugly or too long?

The writer will, in his re-reading, harden his heart to his felicitous phrases and his smoothly-flowing paragraphs. He will be alert to censure spiritless sentences, condemn what is rugged and misshapen, draw a line through what is incorrect factually, lop off redundant words and phrases while preserving the virtues of repetition, remove distracting ornament, rearrange what is expressed ambiguously, and throw light upon the parts that are difficult to understand. One needs the sort of hard-hearted determination voiced by Ovid when he said "When I re-read I blush, for even I perceive enough that ought to be erased, though it was I who wrote the stuff."

Words and Sentences

The person seeking to develop style in writing doubtless knows enough about the elements of grammar so that he need not become wrapped up in the grammatical niceties of his manuscript. He will not become so immersed in words that he is like the laboratory worker who comes to love the guinea pigs for themselves, not for the knowledge they give.

If a writer pauses to wrestle with the choosing of a handful of words he dams up the flow of his ideas. When he lets himself go he will find his mind calling upon his total life experience, spindrifting back into past ages for an illuminating incident, calling upon everyday events for a parallel, and rocketing into space where all art lines converge to provide an angle. No person more than a writer needs so much to see

things as a little child, exciting because looked at as new, wonderful because of what imagination can do with them.

Diction is the choice of words, and its problems are not the exclusive preserve of inexperienced writers. These problems are quite normal, and their solution is part of the process of all careful writing. The expert writer, however confidently he may dash off sentences and paragraphs, is always acutely conscious of selecting and rejecting words a hundred times in the course of writing a letter or a report. He will have at his hand for reference such a book as *A Dictionary of English Synonyms*, by Richard Soule (McClelland and Stewart, Limited, Toronto).

No hard and fast rule demands that we use short words exclusively. One good reason for short words is their greater impact. "Stop" is much more emphatic than "desist". But there are times when the short word does not convey the strength of a longer word: for example, "nasty" is not so effective as "disgusting".

The emphasis of a sentence lies not in its length but in its shortness. There is a narcotic effect in long-spun sentences. They demand an effort of memory, because we have to hold on to the statement in the first phrase until we reach the point in the final phrase.

However, we must not conclude that simple sentences are always best. The reader's pleasure must be catered to, and he will not be pleased by a style which always leaps and never flows. A judicious mixture is called for, so that the drowsy monotony of long sentences is broken by the occasional use of a short, sharp sentence which revives drooping attention.

True and False Brevity

True brevity of expression consists in saying only what is worth saying, and in avoiding tedious detail about things. We are indulging in the meanest sort of style when we spin out thoughts to the greatest possible length. Brevity does not mean saying less than the occasion demands, but not saying more.

The limit to be placed on a piece of writing is not necessarily an arbitrary restriction of the number of words. The answers to these questions are the real determinants of length: is it all necessary to my purpose? does it sustain interest throughout? A style that takes note of these criteria has commonsense as well as art on its side.

Summing Up

What is style? A practical look at the problem gives us every reason to believe that if we have achieved individual expression, brevity, directness, lucidity, some adventurousness of idea and phrase, we need not pine timidly over some mystery called "style": we have it. But it is proper always to be striving to reach an ideal, little by little.

To write well is no gift of the angels, nor is it the outcome of striving audaciously to be different. The first thing demanded of the literary craftsman is that he be clear: then follow eloquence and harmony.

It is well, in these days, to recall the old civilities, and apply them to our writing. The traditional values still are worth clinging to in a society that has been made uneasy about the civilization it has created.

But style is only for those who believe in what they write. It cannot enable shadows to become other than shapeless conceptions.

(Continued on next page)

MILITARY PSYCHOLOGY

The Memoirs of Field Marshal the Viscount Montgomery of Alamein, K.G. (London, 1958) include the following anecdote relating to the campaign in Libya:

"A curious incident occurred as our light forces were moving forward south of Benghazi. I was right up behind the leading armoured cars, reconnoitring the area; I had a small escort with me. We had outstripped the fighter cover and from time to time enemy aircraft strafed the road; it was not a healthy place and I suppose that I ought not to have been there.

"Suddenly I saw a lorry coming up from behind, and on it a large boat; a naval Petty Officer sat with the driver and some sailors were inside.

"I stopped the lorry and said to the Petty Officer: 'What are you doing here? Do you realize that you are right up with the most forward elements of the Eighth Army, and you and your boat are leading the advance? This is a very dangerous area just at present, and you are unarmed. You must turn around and go back at once.'

"He was dreadfully upset. He had been ordered to open up a 'petrol point' at a small cove well to the north of Mersa Brega; small naval craft were to land petrol at this point in order that the leading armoured car regiments could refill their tanks; this was the easiest way of getting petrol and oil to them. He explained this to me, looking at me with pleading eyes rather like a spaniel asking to be taken for a walk to hunt rabbits.

"He then said: 'Don't send me back, sir. If the armoured cars don't get their petrol, they will have to halt and you will lose touch with the Germans. Couldn't I go on with you? I would then be *quite* safe.'

"That Petty Officer was clearly a student of psychology! In point of fact I did not know about these small petrol points for the armoured cars; it was a staff plan and a very good one. I took the naval party forward with me and saw them safely to their cove, where I was their first customer for petrol. I have often thought of that Petty Officer; he was from the Merchant Navy and in the R.N.V.R.; his sense of duty was of the highest order, and Britain will never lose her wars so long as the Royal Navy can count on men like him."

About Style in Writing

(Continued from preceding page)

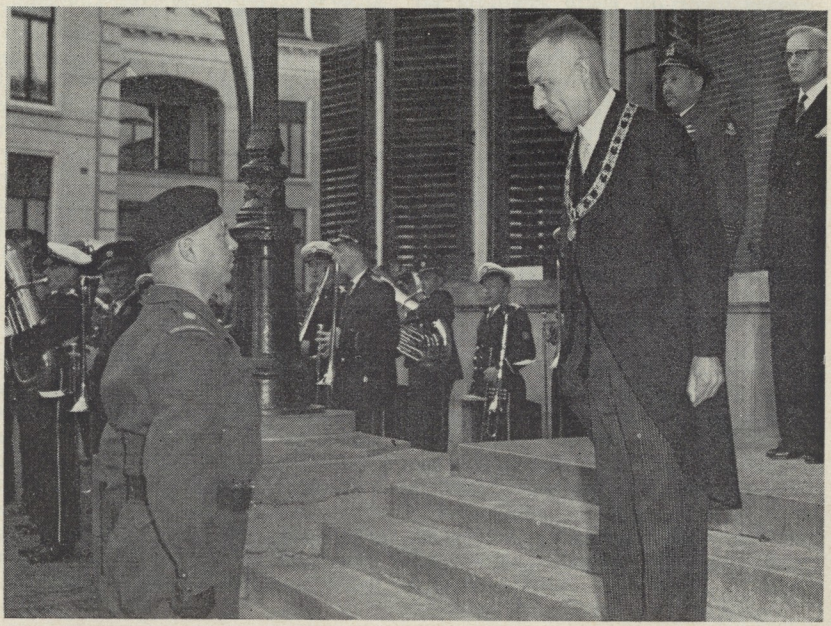
Madame de Sévigné, a master of style in her own world of the seventeenth century and still a model worthy of study, wrote to her daughter: "Never forsake what is natural. You have moulded yourself in that vein, and this produces a perfect style."

Shun artifices and tricks and fashions. Gain the tone of ease, plainness and self-respect. Speak frankly what you have thought out in your own brain and have felt within you. This, and this alone, creates a perfect style, as she says who wrote the most exquisite letters the world has known.

Leeuwarden Revisited

Canadian Army Photographs

Fourteen years after the liberation of Leeuwarden, The Netherlands, by The Royal Canadian Dragoons during the Second World War, a specially-formed squadron from the regiment marched into that town last May to commemorate the occasion. *Above*: Major J. M. Kohler, CD, squadron commander, leads the troops into Leeuwarden. *Below*: Burgomaster A. A. M. van der Neulen welcomes Major Kohler on the steps of the Town Hall.



SHOCK WAVE EFFECT STUDIED

FROM A STATEMENT ISSUED BY THE DEFENCE RESEARCH BOARD, NATIONAL DEFENCE HEADQUARTERS, OTTAWA

Defence Research Board scientists at Suffield Experimental Station (SES), near Medicine Hat, Alberta, are conducting a fundamental research programme to investigate shock and blast waves and their effects on model structural configurations. Explosive charges of TNT, ranging from eight to 200,000 pounds, will be detonated on three prairie ranges within the station's 1000-square-mile experimental area.

Scientists have been gathering data relative to nuclear explosions since the first atomic weapon was detonated in the USA. The Canadian effort however, probably represents the first comprehensive investigation by a Western nation of the fundamental phenomena associated with shock and blast waves from explosive charges exceeding a few tons. Studies are also being undertaken to interpret associated laboratory investigations with the explosions carried out during the field experiments.

The data obtained will lead to a better understanding of the response to blast forces of field defences and shelters and other types of construction. The programme should permit the scientists to suggest design features leading to blast-resistant characteristics and methods of minimizing damage effects within shelters. Because there are no radiation or thermal effects from the explosives used at SES, the programme constitutes no danger to persons or animals in the Suffield locality.

The programme is the result of participation of SES scientists in conducting measurements of blast waves during the United Kingdom nuclear tests in Australia in 1956 and 1957. Close co-operation has continued with the United Kingdom laboratories which are keenly interested in the SES experiments. Canadian and Britsh scientists co-operated in conducting shock measurements during the recent Ripple Rock demolition off Canada's west coast.

United States scientists have also shown interest in the SES programme and have been invited to make scientific observations at some of the forthcoming tests.

Planning for the project began two years ago and outdoor ranges have been prepared. By August 1958, an eight to 60-pound explosive range was completed and a second, capable of assessing the effects of charges up to 2000 pounds, was finished in the summer of 1959. It is expected that 100-ton or simulated sub-kiloton nuclear explosives will eventually be detonated.

High-speed photographic techniques have been developed to study in detail the shock and blast effects associated with explosions. Smoke rockets provide a background grid pattern to facilitate measurement of the movement and other actions of shock waves.

The first of a long series of medium explosions was successfully carried out in July when a 500-pound hemispherical ground burst charge of small TNT blocks was detonated. Associated air pressures and other related data were obtained.

The TNT charges, cast in the form of spheres and hemispheres,

HISTORIC NAMES FOR CAMP

FROM A PUBLIC RELATIONS REPORT ISSUED AT CAMP GAGETOWN, N.B.

Areas occupied by the Army garrison at Camp Gagetown, N.B., are to be named after persons prominent in Canada's growth and military history, it has been announced by the Camp Commander, Colonel C. H. Cook, ED, of Ottawa.

Names selected perpetuate battles in which Canadian soldiers distinguished themselves, they include also a deceased Victoria Cross winner of the First World War, a deceased Canadian general, an early Canadian fort and others of historical and regimental significance.

The names will identify messes, quarters and other accommodation occupied by Camp Gagetown's four major elements, including field and permanently-established units. Signs are to be erected in the areas so designated.

Fort Carleton, built by the Hudson's Bay Company on the North Saskatchewan river, will be perpetuated in the name to be applied to the area occupied by Camp Headquarters and the static units. The area will be known as "Fort Carleton Barracks". Choice of Carleton was made because of a county in New Brunswick of that name, and because of the former Carleton and York Regiment, now perpetuated in the Royal New Brunswick Regiment.

The name of a St. Catharines, Ont., soldier who won the Victoria Cross in the First World War, will be given to a junior ranks club for personnel of Camp Headquarters and static units. He is the late Lance Corporal Frederick Fisher, who won the VC in the first Battle of Ypres while serving with the 13th Canadian Infantry Battalion. The club will be known as "The Frederick Fisher Club".

The name of a former Honorary Colonel Commandant of the Royal Regiment of Canadian Artillery will be bestowed on the area of the camp occupied by the 3rd Regiment, Royal Canadian Horse Artillery. He is the late Maj-Gen. H. O. N. Brownfield, of Brockville, Ont.

The junior ranks club of 3 RCHA will be called "The Grenade Club", because of the grenade insignia of the artillery and its association with the weapon.

Two battles of the First and Second World Wars will denote the barrack areas and junior ranks club of the 1st Regiment, 8th Canadian Hussars (Princess Louise's). The barrack areas will be known as "Cambrai Barracks", after the Battle of Cambrai in 1916 in which tanks were first used. The Hussars junior ranks club will be known as "The Coriano Club", commemorating the Battle of Coriano Ridge in Italy in 1944 in which the 8th New Brunswick Hussars (Princess Louise's)

Shock Wave Effect Studied

(Continued from the preceding page)

are produced at the station following the development of a new technique for building large hemispherical shapes.

Dr. Ross B. Harvey, a physical chemist who led the SES group at the nuclear tests in Australia, is directing the shock and blast research programme at the prairie establishment.

BRIGADIER WARE IS APPOINTED COLONEL OF THE REGIMENT, PPCLI

FROM A REPORT ISSUED BY THE DIRECTORATE OF PUBLIC RELATIONS (ARMY), ARMY HEADQUARTERS, OTTAWA

Brigadier C. B. Ware, DSO, CD, has been appointed Colonel of the Regiment, Princess Patricia's Canadian Light Infantry, it has been announced by Army Headquarters.

Brigadier Ware is Commander of the 1st Canadian Infantry Brigade Group with headquarters at Calgary, Alta., and is to attend the 1960 Imperial Defence College course in the United Kingdom.

His predecessor in the appointment of the Regiment was Brigadier A. Hamilton Gault, DSO, ED, CD, who died in November 1958.

Brigadier Ware was commissioned in the Permanent Active Militia in 1935 and went overseas in November 1939 with Princess Patricia's Canadian Light Infantry. Subsequently he was appointed second-in-command and commanding officer of the PPCLI. He commanded the 3rd Battalion of the North Shore Regiment while serving with the Canadian Army Occupation Force in 1945.

After his return to Canada in 1946, Brigadier Ware was again appointed to command the PPCLI.

He attended the Canadian Army Staff College in 1948. From 1948 to 1955 he held the following appointments: Commander, HQ Calgary; Commandant Joint Services College Royal Roads; Commander, Canadian Military Mission Far East and Military Attache to Japan.

Prior to his present appointment in September 1958, he was Director General of Military Training at Army Headquarters.

Historic Names for Camp

(Continued from the preceding page)

played a leading role.

St. Andrew, the patron saint of Scotland, lends his name to the barrack areas of the 2nd battalion, The Black Watch (Royal Highland Regiment) of Canada. The cross of St. Andrew is duplicated on many of The Black Watch insignia.

The unit's junior ranks club will take its name from the brilliant red plume worn by members of The Black Watch on their balmorals, the red hackle. The club will be designated as "The Red Hackle Club".

The red hackle originated with The Imperial Black Watch in 1795. At that time the regiment was covering the retreat of a British force at Gildermalsen, Holland, who were falling back before the French. An artillery unit left its guns in the retreat and The Black Watch counter-attacked, recovered the guns and manhandled them back to safety. In commemoration of this event, the artillery unit lost its right to wear the red plume on their headdress in favor of The Black Watch.

The Black Watch (Royal Highland Regiment) of Canada, this country's oldest highland regiment, gained the right to wear the red hackle in 1915 for their part in the Battle of St. Zubien's Wood in France.

CGS at Commonwealth Conference

FROM A REPORT RECEIVED FROM THE UNITED KINGDOM INFORMATION SERVICE

About 180 senior officers from all Commonwealth countries this fall took part in Conference "Uniflex" under the chairmanship of Admiral of the Fleet Lord Mountbatten of Burma, Chief of the Defence Staff, United Kingdom.

The conference, held at the Royal Air Force College at Cranwell in Lincolnshire, England, was the first of what is hoped will be a series of informal inter-service, inter-Commonwealth conferences to be held periodically with the aim of "drawing closer together the armed forces of the Commonwealth by the study of mutual defence problems."

During the conference the delegates discussed problems of Commonwealth defence in the nuclear age and exchanged ideas on the re-equipment of forces with new

Service chiefs attending the Commonwealth conference are shown on the runway at the Royal Air Force College, Cranwell, England. *Left to right:* Lieut.-General M. Habibullah Khan, Chief of Staff, Pakistan Army; Earl Mountbatten of Burma, Chief of Defence Staff, United Kingdom; Air Marshal S. Mukerjee, Chief of Air Staff, India; Lieut.-General S. F. Clark, Chief of the General Staff, Canadian Army; Marshal of the Royal Air Force Sir Dermot Boyle, Chief of Air Staff; General Sir Francis Testing, Chief of the Imperial General Staff.

BEWARE OF INDECISION

CAPTAIN K. S. N. SWAMI, ASC, IN THE JANUARY 1959 ISSUE OF THE ARMY SERVICE CORPS JOURNAL, ASC SCHOOL, BAREILLY, INDIA

An important ingredient of the quality of leadership is the ability to take decisions. It is the responsibility as well as the privilege of the leader. The men whom he leads look up to him to give the correct lead in the form a series of decisions, at the right time, and setting in motion right actions. If the leader is slow at reaching decisions, the resultant action may be too late to achieve the aim, and it may be worse than no decision. No decision will mean abdication of the function of leadership. Decision arrived at hastily, and changed in the next minute is the worst of all. It creates confusion among the followers, and produces undesirable results. Therefore, a leader must be able to decide quickly, correctly and then stick to it.

Leadership is essential when two or more persons act together to achieve a common aim. The members of the working group may know a multitude of facts, and can produce a variety of possible solutions to a problem they have to tackle. But, endless discussion will be wasteful, as *the* solution will not be born out of unco-ordinated thinking. There must be a person, who is able to balance the views expressed, add his own and produce the solution, which he expresses as a decision. This seems to be a lengthy, involved process, for which adequate time may seldom be available. It is particularly so in the army, which employs working groups ranging from a few individuals to many thousands, for the single purpose of destroying the enemy. Here, situations develop rapidly, demanding quick, steady decisions from leaders. There is a variety of them, depending upon the scope of problems to be tackled. It is, therefore, essential that leaders in the army must be taught to develop the habit of taking decisions.

For, it can be developed into a habit—aptitude acquired by practice. By constant practice, the process of thought involved in arriving at sound decisions can be reduced to a streamlined procedure. Conscious effort, which always produces a certain amount of strain to the mind can be avoided, at least in tackling familiar problems. It is the real or imaginary strain, which makes people avoid taking decisions, and post-

CGS at Commonwealth Conference

(Continued from the preceding page)

weapons and equipment likely to be available for service within the next few years.

Lord Mountbatten stated that quite a part from the great value of hearing, in an informal atmosphere, views from all parts of the Commonwealth, nothing but the greatest good could come from this opportunity for all those attending to get to know each other personally during the period of the conference.

pone the effort as long as possible. This is but a natural human tendency. By repetition of effort the tendency for procrastination can be removed and the habit of taking decision installed in its place. When the mind of the leader becomes used to this habit, some conscious effort will be required to get rid of it. Therefore this habit must be given great emphasis in the training of leaders in the army. As future wars may be fought with great speed of action, the ability to take decisions quickly assumes great importance. Not only the success, but also the survival of the field force will depend upon it.

In order to take correct decisions, it is necessary to think correctly. The thinker must be able to form in his mind as true an image as possible of the real conditions existing in the battle field. This is necessarily difficult in battle, where the picture of "own side" is known for certain, but that of the enemy can only be guessed in an intelligent manner. In such a situation, where the mental image cannot conform truly to outward reality, the thinker has to depend upon his instinct to some extent. This instinct, as far as the battle is concerned, depends upon personal knowledge of the characteristics of the enemy and methods adopted by him. Therefore, the building up of this inner image is the first step in correct thinking, in this context. Professional knowledge and experience, careful study of information, ability to sift the grain from the chaff and a sound commonsense are necessary to form this image. Having achieved it, the next step will be to guess or foresee the result of possible actions in the world of reality, by combining various images and symbols representing actual conditions.

Thought must be organized in a regular order. It may be advisable to begin with simple ones and gradually proceed to the complex. This process can be further made easy by dividing the problems into as many parts as possible without disturbing the pattern of the whole. Care must be taken to survey the problem in a general way so that nothing of importance is neglected. At the same time, particular attention must be given to details, so that vagueness may be avoided. By following this procedure, correct decisions can be produced on most occasions.

A decision, once arrived at, should not be changed, unless the facts on which it was based were altered before the decision was acted upon, or the action has not entered a decisive phase. Otherwise, it shows that the person who decides does not fully believe in the correctness of his decision. It may also be that he is afraid of taking responsibility for the results achieved by his decision. Definiteness of decisions requires moral courage. It is produced by a combination of character, knowledge, intelligence and self-confidence. The quantum of courage required depends upon the gravity of the decision to be taken. Fixation of the D Day for launching the invasion of Europe during the Second World War was a decision calling for the highest type of moral courage. On it depended the success or failure of the entire operation, and the lives of many thousands. Army leaders seldom get a second chance, if the first decision is faulty. Therefore, the habit of taking definite decisions must be developed at all costs.

In the army, leadership is created by authority, and not by the volun-

tary consent of the followers. However, credit must be given to the fact that the authority exercises considerable discretion in selecting the leader. Yet, it is not the same as leadership by consent, in which case, the qualities of leadership would have become evident before the privilege to lead is accorded. The sure way in which a leader by authority can disillusion his followers is to be slow to take decision and quick to change them. It will be a very demoralizing influence on the followers. They are compelled to serve the appointed leader, and so they will obey his orders mechanically. But these decisions will not be able to originate willing, wholehearted co-operation from the men to achieve success in the mission allotted to them. The authority which appointed the leader must also ensure that he possesses the necessary qualities.

The army engages itself in preparing for war during peace-time. Duration of modern wars being limited, a major portion of a person's career in the army is spent in peacetime training. It is now necessary to examine what chances exist in peacetime to develop the habit of taking decisions, and whether there is room for improvement.

Administrative decisions are generally taken at as high a level as possible during peace-time, as strict economy measures do not permit of laxity in any respect. Thus, a junior leader will seldom be called upon to take a serious decision. It would have been better if it was not so. Every aspect of his action is covered in the orders given to him. He merely obeys and very little interpretation to suit practical conditions is required. If a wrong administrative decision was allowed to be taken by the junior leader, the results will be visible immediately in the form of decline in the fighting efficiency of the troops under his command, or an undesirable inroad into his purse in the form of an audit objection. Such opportunities are few.

Tactical decisions are made in theory only during training exercises. The commander making a decision is prevented from knowing the actual result achieved by his action. He is therefore not called upon to bear any serious responsibility. By a remote chance, his prospects for promotion may be affected by a very incorrect tactical decision during manoeuvres. The urge to make sure that decisions are taken properly are not at all present during tactical exercises without troops. Exercises with troops are more suitable in this respect, as a wrong decision may cause a self-respecting commander to lose face. The superior is very often tempted to scrutinize the decisions of his subordinate before action takes place. This is seldom possible in actual battle, especially in this stage of dog-fight, when each commander must go ahead on his own initiative to maintain the momentum. The subordinate also looks to his superior for approval before he gives effect to his own decision. These tendencies have to be avoided if proper training is to be achieved.

The first step will be to enlist the co-operation of commanders at the highest level to enforce this habit. They must take a voluntary decision to delegate responsibility, where authorized by regulations on administration and training, and not to interfere with the decisions of subordinates unless it is absolutely essential to do so in the interests of the service. This decision must be taken soon and should be strictly adhered

to. Admittedly a lot of risk is involved in such a decision. That is why it can become effective only if practised from the top. And there is no escape from taking this responsibility if the habit of taking decisions is to be cultivated. This procedure must be practised from the commander of the highest formation to the lowest sub-unit commander, throughout the army. One of the conditions for promotion by selection must be the ability to delegate authority and train the subordinates in taking decisions.

The above step can only contribute in a small measure to the solution of the problem. Unorthodox situations must be devised during collective training, whereby commanders will have to take decisions quickly. It should also be possible for them to study the results without great delay. There may be some risk in doing so, but that should be accepted in the larger interest of the nation. Meteorological conditions may be employed to create suitable situations. Where a subordinate commander — a patrol commander, for example — has to decide for himself whether to act in a certain way or not, in war, he must be allowed to do so during training. In fact, the occasion for him to do so must be created. If a wrong decision is taken, it is possible that a few casualties may occur. On the other hand, a correct decision will add to his self-confidence. Such situations must be created on all exercises and the controlling authority must be ready to accept reasonable risks.

During the stress and strain of the battle-field all commanders must be capable of taking decisions quickly and correctly. This is an aptitude essential for all leaders, and can be developed by practice during peacetime. By constant practice, much of the strain involved in taking decisions can be avoided and the mental process will become automatic. Intensive training in this aspect is vital to success in war, and careful thought is necessary to achieve it.

Canadian Aircraft Bought by U.S. Army

The [U.S.] Army's largest new airplane, the deHavilland "Caribou" was demonstrated recently to officers of Continental Army Command Headquarters at Fort Monroe, Virginia.

The twin-engine propeller-driven aircraft gave an "impressive demonstration of its short-field performance capabilities at Walker Army Airfield, becoming airborne after a run of less than a hundred yards and coming to a stop after a slightly longer landing roll," it was reported from Monroe.

The Caribou is designed to operate from short, improvised airstrips in close support of the Army in forward battle areas, carrying out aerial supply dropping, movement of men and materials and casualty evacuation.

With a single span of 96 feet, the high-tailed airplane can accommodate 32 men or three tons of cargo. Five of the aircraft are now being prepared for delivery to the Army by the manufacturer, deHavilland Aircraft of Canada.—*Army-Navy-Air Force Journal (U.S.).*

Book Reviews

THE TRUTH ABOUT DUNKIRK

REVIEWED BY COLONEL G. W. L. NICHOLSON, CD, DIRECTOR OF THE HISTORICAL SECTION, ARMY HEADQUARTERS, OTTAWA

Less than a score of years have passed since the Dunkirk evacuation, but already a number of legends have grown up around the operation which have threatened to obscure the truth about what actually took place. It is well therefore that there has recently appeared a definitive account* of the event by one competent to strip the fiction from the facts. Mr. David Divine is a well-known civilian naval writer and the author of several wartime publications for the British Ministry of Information. One of these was *Dunkirk*, published in 1945. In it Mr. Divine worked mainly from the carefully collected records of a large number of the ships in the participating armada, drawing also on his own personal experience (he won the Distinguished Service Medal there.) Since 1945 the Dunkirk episode has been more fully documented with material coming to light from both the Allied and enemy sides. In a careful analysis of such sources, both published and unpublished, Mr. Divine has now given us an exciting detailed narrative of the evacuation itself as well as a comprehensive survey of the whole campaign to which Dunkirk formed the dramatic conclusion.

The author compares Dunkirk with other successful evacuations in military history — the escape of Moore's army of 20,000 from Corunna, the epics of Anzac, Suvla and Helles which saved 125,000 British and Empire troops to fight again, the withdrawal from Norway, Greece and Crete in the Second World War, and from Hungnam during the Korean operations. (He might also have included the skilfully executed German retreat across the Messina Straits at the close of the battle of Sicily, which in addition to transferring 40,000 troops to the Italian mainland, salvaged close to 10,000 vehicles, tanks and guns, and a large quantity of ammunition and equipment.) But in its magnitude and its far-reaching consequences Dunkirk surpassed all these. For among the 338,226 troops evacuated were the trained N.C.O.s and battle-tested men to form the nucleus of a professional army which would be led by commanders who had learned much in the brief but bitter Flanders campaign.

Moreover, the Dunkirk miracle, which saved Britain from what could have been, to quote Mr. Churchill, "the greatest military disaster in our long history", kindled in the British people a new sense of accomplishment and determination. "The Dunkirk spirit", says Divine, "was not a vast incandescent flame of self sacrifice and high endeavour that swept the country in a night", but rather a "small red heart of embers" from which Britain's great wartime leader was to blow a flame

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**The Nine Days of Dunkirk.* By David Divine. Faber and Faber, London, 1959. Obtainable from British Book Service (Canada) Ltd., Kingswood House, 1068 Broadview Ave., Toronto 6, Ont. $5.00.

that would temper the nation to victories unimagined.

Mr. Divine cites and disposes of the Dunkirk legends one by one. Contrary to popular belief, the main evacuation was not effected from the beaches by vast fleets of small craft operating unorganized and uncontrolled from British ports. The valuable contribution made by the little ships was only possible because of the amazing efficiency with which their movements were coordinated under the directing genius of Admiral Sir Bertram Ramsay, one of the few men, says Divine, to whom it is given "to command a miracle". And too little credit in the public mind has been given to the work of the larger vessels — the personnel ships and the destroyers that ran in alongside the Dunkirk moles to lift by thousands the men of the B.E.F. The author refutes the post-war assertion by German generals that the B.E.F. won clear simply because Hitler halted his panzer divisions at the line of the Aa Canal. He shows that the stop order was given by General Rundstedt the day before Hitler arrived on the scene, and that numerous other factors contributed to the failure of the German armour to prevent the evacuation. He answers the Vichy charges of "desertion" by carefully reviewing the poor showing of the French armed forces as their high command collapsed. He accuses Weygand of excessive procrastination, a fatal weakness which over-shadowed his lesser failures of indecision, unwillingness to assume responsibility, and an unfortunate lack of frankness. As to the widely-held British belief that King Leopold betrayed the British Army, Divine points out that, contrary to Weygand's later assertions, Leopold's Allies had foreseen Belgium's enforced capitulation, and that in fact the decision to withdraw the B.E.F. was taken unilaterally and that evacuation began a day before notifying Leopold.

Dunkirk was not the only operation in the war in which R.A.F. claims of enemy losses were later found to have been excessive. Mr. Divine not only criticizes the apparent reluctance of Fighter Command to make a maximum effort over the Dunkirk beaches (the official explanation was that its primary responsibility was the defence of the United Kingdom), but he answers Mr. Churchill's estimate of the enemy's losses of four to our one with documented figures of 106 aircraft lost by Fighter Command compared with 132 German planes shot down, of which the Royal Navy claimed 35.

The author reserves his biggest blasts for General Alanbrooke, commander of the British 2nd Corps, vigorously taking him to task for his criticisms of Lord Gort, the British Commander-in-Chief. He refutes the claim (made by Sir Arthur Bryant in *The Turn of the Tide*) that Gort lost control of the retreat and that Brooke was alone responsible for bringing the B.E.F. through "the closing defile" to Dunkirk. In championing Gort, Divine meticulously examines every charge made against him in Brooke's diary. The result may be to exalt the C-in-C's conduct of operations to a higher plane than it in fact deserves, yet most readers will be convinced that this appraisal of Gort is nearer the truth than Brooke's stricture that "when it came to handling a large force . . . he seemed incapable of seeing the wood for trees." Such an entry in the Alan-

A Study in Arab Leadership

Reviewed by Professor Richard A. Preston, Professor of History, Royal Military College of Canada, Kingston, Ont.

For several years it has been widely accepted in the West that the democratic cause against Soviet communist imperialism in certain key places hangs uncertainly on the lives of certain strong old men with Western sympathies. Examples in the Far East are Chiang-Kai-Shek and Syngman Rhee. In West Germany there is Adenhauer. Similarly, Nuri as-Said, or Nuri Pasha as he was universally known, was regarded as the rock on which the West depended in Iraq and, indeed, in the whole Middle East. Now Nuri is dead, killed by an unknown assassin in the midst of an upheaval which overturned the Hashemite regime in Iraq to which he had given a lifetime of service. Since his death, even that arch-enemy of the West, and of Nuri, Colonel Nasser, has foretold the imminent fall of Iraq to communism.

Lord Birdwood's biography of Nuri* was completed before the tragic events of July 14, 1958 which made its publication yet more urgent and timely. After that occurrence the writer went over the manuscript to "reorientate many phases . . . in the light of the final tragedy" and added two more chapters. Otherwise, this is substantially a biography of the Arab statesman written during his life-time by one who had good access to him and had won his confidence. It was written primarily not to explain the ultimate tragedy, but to defend the

**Nuri as-Said.* By Lord Birdwood, M.V.O. (London, Cassell, 1959). Available in Canada from British Book Service (Canada) Ltd., Kingswood House, 1068 Broadview Ave., Toronto 6, Ont. $7.00.

The Truth About Dunkirk

(Continued from the preceding page)

brooke diary is on a par with his observation, written on one of the Royal Navy's most disastrous days of the evacuation (when in spite of the closure of Dunkirk harbour and the loss of the Mole, more than 47,000 troops were brought to England): ". . . found arrangements quite inadequate and of a most Heath Robinson nature. Saw Gort and asked him to get a few Marines and more landing craft."

These controversies, however, by no means form the major part of the book. In vivid narrative Divine portrays the dramatic events of the nine fateful days. There is much of tragedy — such as the ramming of the minesweeper *Comfort*, loaded with troops, by a sister minesweeper which had mistaken her for a German E-boat. On the brighter side is the story of the French officer who steadfastly refused to wade into the surf to board a rescuing dinghy, finally sending out an explanatory note: "I have just eaten and am therefore unable to enter the water."

David Divine's story is one that gives full credit to the skill, perseverence and dogged heroism of the men who manned the Dunkirk armada. No better book has been or is likely to be written about Dunkirk.

position of one who was still actively engaged in political life. Its purpose was to help the reading public in the West to understand the Pasha in order to make his work easier. Instead it has become an apologia after his demise.

This switch in direction is probably responsible for a puzzling feature of this book. In style it does not measure up to what one would expect from a professional writer of repute. Full of clumsy organization and of cloudy statements which make the argument difficult to follow, it reads like a first draft rather than a polished work. Presumably too hasty "reorientation" is responsible. This is a great pity, for it is now more important than ever that the West should read this book and endeavour to understand the mind and work of men like Nuri, and of the forces which govern our relations with countries like Iraq.

Nuri was a Mesopotamian who was trained as an officer in the Turkish Army and went to Staff College in Constantinople, but who joined a group of Arab nationalists plotting against the Sultan. During the First World War he served with Feisal, Lawrence, and others in the Revolt in the Desert. Afterwards he became a leading statesman in Iraq, serving as Prime Minister fourteen times before his death. Although a nationalist who was determined that the Arabs should have the last word in the determination of their own destiny, he was always convinced that his country's interests could best be served by a close association with Britain. Therein lay a fundamental illogicality which the British find difficult to understand. For while the connection with Britain brought economic prosperity and internal stability, nationalist opponents of the regime in power could always use the British as a whipping horse for every ill. Hence "moderate" nationalists like Nuri who wanted to co-operate with the British were regularly forced to take up positions more extreme than they thought advisable for the present and were, just as regularly, forced out of office for longer or shorter periods.

Lord Birdwood believes that the ills of the Middle East can be traced to the failure after the First World War to honour the Allied promises of Arab independence. He deplores the Allies' inability to realize that the Arabs in advanced areas like Iraq had educated men who were capable of self-rule. He is extremely critical of the evils which followed upon divergent policies followed by the British Foreign Office and the British government in India, both of which had a finger in the Middle East pie. He is disgusted by French intrigue determined to suppress Arab aspirations. He is convinced that Nuri, although a "great man", had a fatal weakness in that he could not make adequate use of modern methods of mass communication to explain the benefits of his long-term policies. Yet, although he repeatedly expresses sympathy for the aims of Feisal and Nuri, he was nevertheless also convinced that it was "out of the question" that Britain should take up the mandate conferred by the League of Nations. He blames the overthrow of Nuri's moderate nationalism on the wicked scheming and self-seeking of his opponent who played upon mass hysteria. He rules out the theory that it was all part of a far-spun communist plot, but he indicates that the Soviet will

The Modern Law of Land Warfare

Reviewed by Colonel J. A. Hutchins, MBE, CD,
Director of Organization, Army Headquarters, Ottawa

"At first sight law and war are terms which negate each other. Law generally implies an orderly polity where human relationship and behavior are governed by inescapable rules. Normally, such rules both promote peace and require peace for their operation. The rule of law and the existence of peace have, therefore, come to be regarded as interchangeable expressions.

"War, on the other hand, appears to connote the abandonment of the restraint of rules of behavior in international intercourse, by substituting in their place reliance on brute force. No judical consideration of rights and wrongs resolves the issue between warring nations. That is decided by might alone. 'The victor shall not be asked later on whether we told the truth or not. In starting and making a war, not the Right is what matters, but Victory', Hitler claimed.

"What, therefore, has law to do with war, and war with law?"

Thus begins a recently published book* by Morris Greenspan which has as its aim the formidable task of stating clearly and accurately just what existing laws of land warfare are and the effect of these laws on the conduct of war. On the succeeding six-hundred-odd pages of his text the author demonstrates that he is amply equal to this task.

Born in England, and a former practising barrister in that country, he served during the Second World War under the Legal Adviser for the Civil Affairs Branch, British Military GHQ, Cairo, and with the British Military Administration, Eritrea, as public prosecutor, a legal adviser and judge. In the course of his war service and subsequent application to the problems of law and war, Mr. Greenspan notes that the events of the Second World War and the wars which have followed, including the Korean War, radical innovations in methods and instruments of warfare, the massive array

**The Modern Law of Land Warfare.* By Morris Greenspan. University of California Press, Berkeley 4, California, U.S.A. $10.00.

A Study in Arab Leadership

(Continued from the preceding page)

obviously take advantage of it. He thus comes up against the paradox that permanently faces the West, namely that peoples who are not yet capable of ruling themselves, will resent help and the communists will benefit by any unrest that occurs. This study of Nuri Pasha offers no clear solution for this dilemma. Perhaps there isn't one. But only by a careful examination of the deep-seated complications of political life in countries like Iraq can we hope to find a solution. And that solution, for democracy, can no more consist of asserting our rule by force than it can entertain the idea of abandoning all hope of exercising moral influence among peoples striving to find their own feet.

of case law most strikingly represented by the war crimes trials of the Second World War, as well as the new conventions such as the four Geneva Conventions of 1949, have all rendered imperative a restatement of the international law of war on land, and that this considerable material should be related in ordered form to the body of law previously existing.

The ably organized volume which the author has produced gives us a systematic, lucid, and exhaustive exposition of the laws of land warfare as they exist today. Following the introductory portion of the book which deals with the place of law in war, the subject matters are dealt with under the following main headings:

1. The commencement of war and its participants.
2. The victims of war.
3. Enemy territory and property.
4. Hostile and non-hostile relations of belligerents.
5. The enforcement of laws of war.
6. Neutrality.
7. Termination of war.
8. Armed conflict not of an international character.

In addition to the copious footnotes which appear throughout the text pages, the book includes a list of cases mentioned, a list of treaties discussed, twelve pages of bibliography, an index and the following appendices:

Appendix I: Draft Agreement Relating to Hospital Zones and Localities (Annex I to Geneva Convention I, 1949). Draft Agreement Relating to Hospital and Safety Zones and Localities (Annex I to Geneva Convention IV, 1949).

Appendix II: Regulations Concerning Collective Relief (Annex III to Geneva Convention III, 1949).

Appendix III: Model Agreement Concerning Direct Repatriation and accommodation in Neutral Countries of wounded and sick Prisoners of War (Annex I to Geneva Convention III, 1949).

Appendix IV: Regulations Concerning Mixed Medical Commissions (Annex II to Geneva Convention III, 1949).

Appendix V: Draft Regulations Concerning Collective Relief (Annex II to Geneva Convention IV, 1949).

Appendix VI: The Hague Rules of Air Warfare, 1923.

The book discusses in an eminently readable and clear way the Geneva Conventions for the Protection of War Victims (1949), the Genocide Convention (1948), the Hague Convention for the Protection of Cultural Property (1954), the effects of the United Nations Charter, the Nuremburg and Tokyo judgments, numerous other war crimes trials and decisions of the courts of many individual states. The latest weapons and methods of war are considered. The laws of air and sea warfare are incorporated insofar as they affect war on land.

Some additional subjects of contemporary importance, discussed with thoroughness and clarity, are worthy of mention, and included with the list of subjects are a few quotes from the book:

1. Just or unjust war — the role of the Security Council of the United Nations in deciding this issue.

2. Treatment of resident enemy aliens — principles laid down in the Geneva Convention Relative to the Protection of Civilian Persons in Time of War (Geneva Convention IV) signed on 12 August 1949 by sixty nations.

3. The law relating to lawful

THE RUSSIAN REVOLUTION

Reviewed by Captain J. A. Swettenham, Historical Section, Army Headquarters, Ottawa

The most important political event of the twentieth century — up to the present at any rate — was undoubtedly the seizure of power by the Bolsheviks in Russia during 1917. It had a marked effect upon the First World War, for at the end of that year the heaviest blow yet sustained fell upon the Allied Powers. On 2 December silence descended like a pall over the whole length of the Eastern Front from the Baltic to the Black Sea. The new Bolshevik Government had abandoned the struggle, the German nightmare of war on two fronts was for all practical purposes now over, and the Western Allies nerved themselves to face the ordeal which would surely follow.

Only by a truce with the Germans could the Bolshevik slogan of "Bread, Peace, and Freedom" be partially fulfilled — famine followed the revolution and freedom was ruthlessly suppressed — and even then civil war in Russia was soon substituted for war against the Central Powers. After the general armistice in November 1918 the revolution had its impact upon every country in Europe. Bolshevik preoccupation with the civil war, prolonged through allied intervention,

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The Modern Law of Land Warfare

(Continued from the preceding page)

belligerents — regular armed forces, irregular armed forces, levee en masse.

4. The law relating to the sick, wounded and dead.

5. The law relating to prisoners of war. "The rules of international law forbid the massacre, enslavement or holding to ransom which once were the lot of war captives".

6. Occupation of territory, Military Government and Civil Affairs. "In the British and American armies the necessity for such a branch in their armed forces came somewhat as a surprise and an afterthought". (Second World War).

7. Enemy property—general principles regarding its treatment.

8. Air Warfare. Modern Weapons.

9. Enforcement of laws of war. "Where a belligerent does not, of its own accord, take measures to remedy branches of the laws of war committed by its forces, or deliberately engages in illegitimate warfare, obedience to the laws of warfare may be compelled..."

10. Punishment of War Crimes. "The intense legal activity focussed on the subject of war crimes did a great deal to explore and demarcate this hitherto somewhat obscure field".

A wealth of valuable information lies between the covers of this excellent text and reference book for the lawyer, the diplomat, the military professional and the reader of military history alike. To say that this volume is an essential work for the shelves of every reference library is merely to state the obvious.

enabled Poland, Finland, Latvia, Lithuania and Esttonia to achieve independence. Similarly, the establishment of proletarian republics in Europe was delayed for a generation, though there was even at that time a temporary triumph of the Soviet idea in Bavaria, and in Hungary under Bela Kun.

It was lack of strength—not lack of will—which prevented the Bolsheviks from lending active support to other revolutionary movements in Europe, notably that in Germany. On this side of the Atlantic it was the Russian revolution as much as any other single event which pushed the United States into world politics after the First World War; its influence is clearly visible in the depression years. The Ribbentrop-Molotov Pact of 1939 was a direct cause of the Second World War; for without Stalin's assurances of support, Hitler would hardly have dared to plunge the world into a second conflict. Now, after nearly half a century, it is easy to trace the perplexities which have beset us since 1945 — China, Korea, Indo - China, Berlin, the Middle East, the cold war, and the missile race are all examples — to the action of a few desperate men in 1917 who provoked a storm and usurped an empire.

Alan Moorehead has followed up his best-seller *Gallipoli*, published in 1956, with another.* This brilliant analysis deals only with the revolutions of 1917 and their causes. The civil war and its end in Bolshevik victory will, it is hoped, be another of his stories; and if it is, this reviewer trusts that Canadian participation in Allied intervention will not be overlooked.

Proper emphasis is placed on the differences between the two revolutions of 1917. That of March, which overthrew the Czar, came as a complete surprise to the revolutionaries (revolutionary movements had been in existence in Russia for a hundred years) the Russian authorities, and the people alike. Its causes were primarily the inequities of the country's political, social, and economic structure, and the burden of the war. There was a background of discord and bitterness which had accumulated for centuries, as well as immediate factors of lesser importance. The influence of Rasputin on the Czarina and the court had done untold damage to the monarchy; moreover, it had alienated from the throne more moderate groups on whom the Czar might have otherwise relied.

The Czar himself was a weak and futile figure who clung to autocracy beyond the realms of reason; his wife, a German, was suspected of favouring the enemy. The war was incompetently conducted and there had been great hardship and loss of life. Finally, the winter had been long and severe; bread was short in the capital, and hunger soon dissolves patience. These discontents, mixed together, produced an extremely volatile condition; and under the repressive system of the Czars there was no safety-valve. The mixture would either simmer and cool, or it would boil over.

On 8 March, without direct provocation by revolutionary leaders, with no explosion and in a very ordinary way, passions bubbled over and the revolution began. Success was certain when soldiers, ordered to disperse demonstrators who at first merely wanted to protest, disobeyed

**The Russian Revolution.* By Alan Moorehead, New York, Harper and Brothers, 1958. $5.00.

their officers and fraternized with the now militant throngs.

The Bolshevik revolution — sometimes known as "the October revolution", though by our calendar it occurred in November — was, on the other hand, premeditated and carefully planned. It was master-minded by two men, Vladimir Ilyich Ulyanov —Lenin—and a Jew, Lev Davidovich Bronstein, better known as Leon Trotsky.

In 1887, when seventeen years old, Lenin embarked on his career of revolutionary activity after his brother was hanged for his part in an anti-Czarist plot. This event moulded Lenin's mind into its future shape—ruthless, possessed neither of patriotism nor pity, willing to cheat and murder to achieve his ends. Only the goal was significant, the means being incidental, of no importance. Opportunism was a vital part of his make-up; past attitudes, loyalties, and slogans could all be discarded when changed circumstances pointed to a surer way. His only faith was revolution, and in this he was a fanatic. A great reader of socialism, he found a religion in Marx; and on being returned to Russia by the Germans following the March revolution,* he set out systematically to impose Marxism on Russia's subservient masses.

Trotsky, ten years younger than Lenin, was an ardent revolutionary and a man of action. On 17 May he arrived in Russia from New York where he had been living in exile. At Halifax the Canadian authorities had shrewdly detained him. He was ashore for a month, and it was not until a request for his release by the Provisional Government had reached Canada that he was allowed to proceed. By July this terrible pair was openly working together to effect the revolution.

Moorehead's facts appear historically accurate. He does not differ materially from such standard texts as *Russia, A History and an Interpretation,* by Michael T. Florinsky and William Henry Chamberlin's *The Russian Revolution.* These facts are presented in a pleasantly readable form against a vivid backdrop —the atmosphere of the time, and the interplay of characters which he is so well able to conjure up. An added attraction is the inclusion of hitherto unpublished material from the secret records of the German Foreign Office which became available for study at the end of the Second World War. This material throws light on German dealings with the Russian revolutionaries from 1915 onward. It seems beyond all reasonable doubt that the Germans played an important part in bringing Lenin and the Bolsheviks to power.

The book is adequately indexed and profusely illustrated. It purports "to give a brief, simple and straightforward account of the Russian revolution"—to quote the author—and it succeeds in this. Indeed it does far more, for it presages the expansionist policy of the Communists which has kept, and is still keeping, the world in a state of turmoil. The Russian enigma is of interest to us all, and to any who would try to understand it, this volume is confidently recommended.

**The Germans had been in touch with him during his exile and viewed with cordiality his openly expressed intention of overthrowing the Provisional Government and withdrawing Russia from the war.*

A Japanese View of the Pacific War

Reviewed by Major D. J. Goodspeed,
Historical Section, Army Headquarters, Ottawa

Although many thick volumes, both official and unofficial, have been printed concerning the American and Allied war effort in the Pacific during the Second World War, the Japanese — perhaps not unnaturally —have contributed little to the history of the period. Unlike their German counterparts, few if any of Japan's outstanding soldiers have rushed into print with war memoirs, autobiographies, or reflections on the military life. Most of them appear to have shared the sentiments of General Otozo Yamada, the last commander of the Kwantung Army, that "defeated generals should not talk of battles." Therefore it was all the more interesting to learn that a book of Japan's Pacific War by Saburo Hayashi, a former staff officer of the Imperial Japanese Army, had recently been translated into English by Dr. Alvin D. Coox of the University of Maryland.* Unfortunately, Hayashi's book, considered as history, leaves a good deal to be desired, but it nevertheless does provide some extremely interesting sidelights on the formation of Japanese military policy and on the mental processes of the militarists who gradually came to dominate Japan's affairs after the Mejii Restoration of 1868.

Military history provides few more revealing contrasts than that between the brilliance of the Japanese tactical success at Pearl Harbour and the abysmal stupidity of the strategy which brought Japan into the war at all. Now it appears almost incredible that any General Staff could seriously have concluded that Japan, with its relatively small population, with an inadequately developed industrial complex, and with virtually no raw materials or natural resources, could ever hope to defeat the United States. The chief virtue of Hayashi's book is that it explains, at least in part, how so grievous an error in judgment came about.

The Japanese, not unlike some other nationalities, had long considered that they belonged to a special category of the human race. Even before the days of the Open Door Policy, the divine mission of Japan "to bring the whole world under one roof" was a part of the national folklore. After Commodore Perry's historic visit to Edo Bay in July 1853, the very suddenness of Japan's emergence into world affairs and the astounding success of her Westernization programme fatally confirmed the Japanese in their belief that they were a Chosen People. The comment is so obvious as to be almost banal, but this particular belief, whenever it has been manifested in history, has proved uniformly disastrous. An easy and overwhelming victory in the Russo-Japanese War did nothing to compel the Japanese to a more sober assessment of relative strengths, while the nature of much white colonial administration in the Orient lent credence to the belief that the West was decadent.

Above all, these delusions were

Kōgun: The Japanese Army in the Pacific War. By Saburo Hayashi, translated by Alvin D. Coox, the Marine Corps Association, Box 1844, Quantico, Va., U.S.A. 1959. $4.50.

pleasant to hold. Hayashi tells of how, as the years went by, those Japanese officers who had first-hand experience of conditions in the United States or in Britain were more and more relegated to the background. Their pessimistic opinions were unwelcome; their promotion was blocked; and their voices finally ceased to be heard at all in the councils where military policies were decided. The Japanese also refused to believe United States Government data indicating the rate of production of American industry. And if in this they were not alone, they were certainly to pay most dearly for their miscalculation. The Japanese Army, convinced of its own superiority, came to regard even the most intellectual of doubts as little better than treason. Perhaps the old theologians were after all correct when they listed Pride as the foremost of the seven deadly sins.

Sadly enough for the Nipponese war aims, the members of the Japanese General Staff did not include the German Army in their almost universal contempt. On the contrary, the Nazi capabilities were consistently overrated, at least until the debâcle of Stalingrad brought serious second thoughts. Indeed, if the Japanese had not been convinced that Germany would soon defeat Russia, it is highly unlikely that the mad attack on Pearl Harbour would ever have been launched, for not even the Tojo Cabinet could view with equanimity the prospect of a prolonger war on two major fronts.

Internally the Japanese Army had traditionally stressed moral qualities as of paramount importance in war — a judgment which, by itself, has probably much to recommend it. Certainly the fanatical courage of the Japanese soldier has been attested time and again by those who fought against him, while the fact that the Japanese Army suffered more than 1,140,000 fatal casualties in the Pacific campaigns offers independent confirmation of Japanese tenacity, if not of Japanese tactical skill. Japanese prisoners were rarely taken, and, even when they were, unwounded prisoners were the exception.

Any army would consider this moral strength an admirable quality, but unfortunately for the Japanese their emphasis on the spiritual in war was accompanied by a serious disregard for the technical. Japanese fire-power, for instance, was consistently inferior to that of the United States forces; Japanese communications were inadequate; their supply services were weak; and at the peak of their war effort the hard core of their Army consisted of 169 infantry divisions, four tank divisions, and 15 air divisions. The Imperial Japanese Army learned through bitter experience that in war it is not sufficient to be brave but that intelligence is also required. The lesson, however, was not learned in time. Even after the United States Air Force had dropped its second atomic bomb, on Nagasaki, the High Command of the Japanese Army was so out of touch with reality that it could notify the formations under its command that "this type of bomb is not formidable, and we have countermeasures."

In the face of this general attitude it is perhaps doubtful if the lack of co-operation and the continuous rivalry between the Army and the Navy can be regarded as a major cause of the Japanese defeat. Hayashi makes much of these inter-service differences, and there is no question but that they were ex-

Robert Rogers of the Rangers

REVIEWED BY J. MACKAY HITSMAN, HISTORICAL SECTION, ARMY HEADQUARTERS, OTTAWA

Readers of this *Journal* will easily recall rough-and-ready officers whose distinguished records on active service have been followed by corresponding failure in peace time. Whether they remained in uniform or tried civvy street, life was too quiet and presented no challenge. Such a man was Major Robert Rogers*, who was amazingly successful as a leader of Rangers during the Seven Years' War which ended with Canada under British rule.

The exploits of Rogers and his Rangers were well known to his contemporaries, since the press of both the American Colonies and Great Britain had eagerly singled them out during the early campaigns and years of British adversity. What could be more natural in 1765, therefore, than for this unemployed veteran to receive backing in London for his proposal to search for a Northwest Passage through continental North America. When failure followed, thanks to powerful enemies who were jealous of his past successes and afraid of what he might accomplish among the western Indians, there was no place for Rogers to turn — where his many creditors could not track him down.

While the rest of his countrymen

**Robert Rogers of the Rangers.* By John R. Cuneo. Oxford University Press, 480 University Ave., Toronto 2, Canada. 1959. $7.00.

A Japanese View of the Pacific War

(Continued from preceding page)

tremely harmful to Japan's war effort. Nevertheless, even if the Japanese services had been completely unified, the end could not have been different. Incidentally, it would be interesting to have the views of Japanese naval officers on this problem, for Hayashi presents what would appear to be a rather one-sided picture of inter-service difficulties.

Kōgun, by and large, is a book which has much to offer the military student, and this in spite of the fact that it is written in a dry and uninteresting manner. Even the keenest follower of military affairs, for instance, may understandably shudder a little when he is confronted with three pages of Order of Battle introduced into the text of a chapter. And while this reviewer is certainly in no position to comment upon the accuracy of the translation from the Japanese, at the same time he resolutely maintains that, whatever the Japanese original text, it would have been wiser to have avoided such deplorable coinages as "personnel-wise". The copious notes at the back of the book, however, are rich in information and extremely readable, and the eleven maps are a useful adjunct to the text.

Thus, although Saburo Hayashi's book will never be regarded as an adequate history of the Japanese Army in the Pacific War, it nevertheless provides the student with valuable background information and some insight into the character of a certain type of senior Japanese army officer.

began choosing sides for what was to be the American Revolutionary War, Rogers was still bent on developing some personal venture which would enable him to pay his debts. Because of his reputation as a partisan leader and his major's half pay, which had been granted only in 1775, however, no one was ready to believe his sincere protestations. Imprisonment by the New York patriots as a suspected traitor finally forced his hand and he escaped into a British uniform, with authority to raise a provincial regiment of Queen's Rangers. But the years of adversity had taken their toll. A passion for strong drink and a certain flabbiness brought on by confinement in debtors' prisons ill became a leader of light troops. Moreover, his recruits of 1776 were farmers and townsmen who possessed little experience of firearms and bore no resemblance to the backwoodsmen of the Ranger companies of twenty years earlier. The Queen's Rangers were not a success and, after being superseded in command, Rogers made another but unsuccessful attempt to raise two battalions of King's Rangers from amongst former associates in backwoods New England. About this time his wife decided that divorce would be preferable to continued marriage to a penniless and itinerant adventurer. The years 1784-1795 were spent in London, with most of his half pay going to his still persistent creditors. Much of the remainder would seem to have been spent on drink, a contributing factor in the final breaking down of his health.

This in bare outline is the theme of the very readable little biography produced by John R. Cuneo, a Connecticut lawyer and student of American military history who obviously has made his subject, for a number of years, far more than a mere hobby. The availability of microfilm and possession of a good camera enabled the author to make use of relevent documents housed in institutions as far apart as the Public Record Office in London and the Huntington Library in California. He has, therefore, been able to discredit falsehoods perpetuated about Rogers by his contemporaries and to tone down the adulation displayed a century later by Francis Parkman. The late Kenneth Roberts, whose best known historical novel, *Northwest Passage*, dealt with the raid against the St. Francis Indians and the unsuccessful venture based on Fort Michilimackinac, and the museum library staff at Fort Ticonderoga appear to have given liberal assistance. (Readers will recall another book on this subject—*Rogers' Rangers*—written by Lt. Col. H. M. Jackson of Ottawa and published in 1953.)

Naturally enough when an American author is writing for fellow countrymen, only 15 pages are devoted to the years 1776-1795. Legal training and interest must, however, be held responsible for the fact that better than 100 pages of this comparatively short study are devoted to the Northwest Passage interlude, which saw Rogers framed by his enemies and held prisoner in Michilimackinac for a whole winter before being taken in irons to distant Montreal for court-martial. Even when the court-martial verdict proved to be in Rogers' favour, General Thomas Gage was able to refuse to make restitution of any kind and thus leave his reputation under a cloud. Professional jealousy seems to have been the basis for this enmity, dating back to 1758 when

Colonel Gage's specially recruited 80th, or Regiment of Light Armed Foot, had proved unable to emulate the exploits of Rogers' several companies of Rangers. Gage, it will be remembered, had been in command of the advanced guard of the ill-fated Braddock expedition and was later to be responsible for the costly British success at Bunker Hill, from which the patriots of 1775 could have been easily dislodged by a simple outflanking movement.

It is ironic to think that Rogers' greatest single exploit—the destruction of the village of St. Francis, which was the base for Indian raids against the New England frontier—was ordered by General Amherst only because two of his officers had been seized under a flag of truce. Having proposed such an operation to a succession of British commanders, Rogers had a plan of campaign already worked out.

Quite frankly, however, this reviewer considers that the earlier exploits of the years 1755-1758 make more interesting reading from a military point of view and regrets that Mr. Cuneo did not expand this portion of his story. An untutored and young New Hampshire farmer, Robert Rogers found his true vocation early in 1755. Command of a company in a New Hampshire regiment of provincials was his reward for enlisting more than 50 men, but scouting quickly became his vocation. Unlike most provincial officers, Rogers proved eager to make war 12 months a year and was able to organize a special company of rangers to undertake forays against the French forts at Ticonderoga and Crown Point during the winter of 1755-1756. Successive British commanders-in-chief were suitably impressed by his increasingly greater and bolder exploits over the next four years and were quite happy to overlook certain military irregularities so long as Major Rogers should continue successful.

Spanish-American War Incident

In an article "'The Just Man Armed'"—Theodore Roosevelt on War" (May 1959 issue, the *Military Review (U.S.)*), Dr. Robert Sellen, Asistant Professor of History and Political Science, Baker University, relates the following incident involving Roosevelt's cavalry, "The Rough Riders", in the Spanish-American War (1898):

"One of his [Roosevelt's] problems in the jungle had been to discover where the firing line was, while at San Juan the Spaniards' position was obvious and he knew 'exactly how to proceed'. He rode up and down the lines to convey orders, gradually working his way through line after line until he found himself at the head of his regiment and among the Regular troops. By that time Roosevelt had concluded that it was foolish to stay down in the valley where they were exposed to Spanish fire, so he asked an officer of the Regulars why they did not charge. Told they had no orders and that they were reluctant to accept his orders, he replied, 'Then let my men through, sir'. Roosevelt recorded later that the younger officers and enlisted men of the Regulars jumped up and followed him, adding, 'I waved my hat, and we went up the hill in a rush'."

The Story of Canada's First Pilot

Reviewed by Major O. K. H. Kierans, MC, CD,
Emergency Measures Organization, Privy Council, Ottawa

Historian Arnold Toynbee supports his argument of the advantages of a hard environment in the geneses of civilizations *(Study of History)* by citing the effect of the Scottish contribution to the successful achievements of the British Empire. His description of the traditional Scotsman, "solemn, parsimonious, precise, persistent, cautious, conscientious, and well educated", fits as well those Scots who settled on the rocky coasts and lush uplands of Cape Breton. It is just these traits that have led their sons from their island home to contribute so much to the professional leadership of Canada.

John Alexander Douglas McCurdy is just such a traditional Scotsman, and he is the subject of yet another book, "The Silver Dart",* published this year to commemorate the golden anniversary of flight in Canada. The book is sub-titled "The Authentic Story of the Hon. J. A. D. McCurdy, Canada's First Pilot". It is not a biography in the true sense and the story fares better for it. The footnotes, happily for the reader, are few and the story breezes along in the carefree style of a grandmother telling her grandchildren family tales of a favourite uncle who made good.

The book brushes the lives of McCurdy's close associates as well, giving us a glance of the lives of the aeronautical pioneers. Alexander Graham Bell's life at Baddeck is prominently mentioned.

The impact of Bell's arrival at the small Cape Breton village is one of the more enjoyable pieces of Canadian writing that I have come across in a long time. The cautious attitude that the people of Baddeck showed to the mysterious innovation of his indoor bathroom is well understood under the circumstances.

Gordon Green's book is written throughout in this refreshing, "cracker-barrel" style. From Bell's experiment of dropping cats from a high balcony to find out why they always land on their feet to McCurdy's method of providing the then Princess Elizabeth and the Duke of Edinburgh with the rigidly protected Cape Breton partridge at a state dinner, the author retains such a rare intimacy that one feels that he has become a confidant of the family's secrets.

The Silver Dart is not a book that I would recommend to a serious historian in search of factual data concerning Canadian aviation. Other reviewers have pointed out the inaccuracies and with this I have no quarrel. Without hesitation, however, I recommend it as a fanciful book, full of delightful anecdotes, to the reader who would like to spend an enjoyable Sunday afternoon, with nothing better to do than get a few chuckles.

The details of McCurdy's struggle to have the potential of the "aerodrome" (as Bell called the first aircraft) recognized both for com-

**The Silver Dart.* By H. Gordon Green. Published under the authority of the National Co-ordinating Council for the Golden Anniversary of Flight in Canada. Printed by the Brunswick Press Ltd., Fredericton, N.B., where orders should be placed. $4.95.

A WELCOME ADDITION

Although British naval supremacy in the North Atlantic ensured that the Island of St. John (now Prince Edward Island) would not be captured by American or French forces during the American Revolutionary War, enemy privateersmen did land and plunder on more than one occasion. Thus the local citizens must have been overjoyed by an unexpected augmentation to the small garrison of provincial troops at Charlotte Town. This is described as follows by the Lieutenant Governor in a dispatch of 7 December 1779 addressed to the Secretary of State for Colonies in London:

"I am now to acquaint your Lordship that the 29th of last October there arrived here The *Camille* man of war (Captn. Collins) with the *Archer* Transport, which had on board 5 Officers, and 200 Hessians, of General Knyphausen's Corps; They are commanded by Colonel Borok; They were on their Passage from New York, for Quebec, but the Transport being in Bad Condition for Sailing, and Captn. Collins thinking it dangerous to proceed further, he left them here; I have Quartered They Officers pretty well, They Men have Built Warm Comfortable Huts for themselves, and I have procured 71 Head of Black Cattle, besides a sufficiency of Rum, to serve them until the middle of June next. I shall render them every necessary Service, in my power, from the principles of duty, and inclination."—*Contributed by J. Mackay Hitsman, Historical Section, Army Headquarters, Ottawa.*

Jack is Better than His Master

50 Years Ago: Of the two Chinese just graduated from the [U.S.] Military Academy it is said that one is of such high degree that the other came with him as his attendant. Finding that the rules of the Academy would not permit a student to have an attendant, both entered, and on graduation it was found that the attendant had out-distanced his master in scholarship.—*From the files of the Army-Navy-Air Force Journal (U.S.).*

The Story of Canada's First Pilot

(Continued from preceding page)

mercial and military uses have been told and re-told in all the week-end magazines this past year. They are too well known to comment upon them at this late date in the anniversary. The author, however, has given us two wonderful bonuses reinforcing the intimate family atmosphere. One is a thirty-two page selection of photographs covering the more memorable periods of McCurdy's career, and the other an unedited diary of the young twelve-year-old McCurdy covering the period he and his brothers Lucian and George built and sailed their houseboat on Bras D'Or.

Stories like *The Silver Dart* come along too seldom in Canadian writing. The usual biography of a well known or important figure is filled with ponderous passages from official documents. This book happily avoids such boring recital.

RECENT EVENTS IN TIBET

REPRODUCED FROM "EXTERNAL AFFAIRS MONTHLY BULLETIN", DEPARTMENT OF EXTERNAL AFFAIRS, OTTAWA

The outbreak of the Tibetan revolt in March centred world attention upon that remote region. The revolt, which appears to have been the culmination of several years of conflict between the Tibetans, devout followers of the Buddhist religion, and the Chinese Communists, is the latest of many instances of Tibetan resistance to Chinese control and has important implications for Communist China's relations with the nations of Asia.

Escape of Dalai Lama

Fighting between the Chinese and Khamba tribesmen in southern and south-eastern Tibet has been going on for most of the past year. On March 10 disturbances occurred in Lhasa, when the news that the Dalai Lama had been ordered to report to the Chinese Representative there aroused the fear that he would be arrested by the Chinese and removed to Peking. Subsequently, the Dalai Lama escaped, arriving on March 31 after a very arduous journey in India, where he was given asylum at Mussoorie.

The Chinese, meanwhile, blamed the revolt on the "upperstrata reactionary clique", and charged that the Dalai Lama had been "blatantly abducted" and that Kalimpong (in Indian territory in the north-west tip of West Bengal) was the command centre of the revolution. Prime Minister Nehru emphatically denied the latter charge. The Chinese authorities released the texts of six letters, reportedly exchanged between the Dalai Lama and General Tan Kuan-San, Acting Representative of the Chinese Government in Tibet. The gist of these letters was that the Dalai Lama was opposed to the uprising. Finally, the Chinese announced that the Tibetan rebel leaders, who had fled to India, would be tried by a Chinese military tribunal for acting against the "national interests of the motherland".

On April 18, following his arrival at the Tezpur railhead, the Dalai Lama, in a statement to the press, denied that he had left Lhasa under duress. The statement charged the Chinese Government with violating Tibetan autonomy and stated that there had been conflict between the Tibetans and Chinese troops since 1955, resulting in openly strained relations in February 1959. The statement concluded that when, on March 17, several mortar shells were fired at the Dalai Lama's summer palace at Norbulingka, his advisers realized the extent of the danger to him, and it became necessary for him, his family and high officials to leave Lhasa. On April 22, after the New China News Agency had denied the authenticity of this statement, the Dalai Lama asserted that it was issued under his authority and indicated his view. The Dalai Lama did, however, admit writing the letters to General Tan Kuan-San, although he did so, apparently, only in an attempt to maintain peace in Tibet.

Background

The Chinese Communists have controlled Tibet since 1950, when they invaded the region at the request, they claimed, of the Panchen Lama, who had fallen into their hands when they occupied the Chinghai region of China, adjacent to Tibet, in

C H I N A
S I N K I A N G
ALTYNTAGH MTS
MT MUZTAGH 23,890 FT
IAMMU & KASHMIR
KUNLUN MTS
KARAKORAM MTS
CHANG TANG
ALING KANGRI 24,000 FT
R. Indus
R. Sutlej
GARTOK
MANAR 17,890 FT
KAILAS 22,028 FT
GURLA MANDHATA 25,355 FT
TIBET AUTONOMOUS REGION
CHINGHAI (KOKO NOR)
SINING
Hwang Ho
C H A N G H A I
JYEKUNDO
DERGE
KANTZE
CHAMDO
CHAMDO REGION
S Z E C H U A N
R. Mekong
BATANG
KANGTING (Tachienlu)
LITANG
Chin Sha Kiang (Upper Yangtze)
R. Salween
GYAMDA
R. Brahmaputra (Tsang Po)
SHIGATSE
LHASA
TSETANG
NAMCHA BARWA 25,445 FT
GYANTSE
MT EVEREST 29,002 FT
H I M A L A Y A S
N E P A L
SIKKIM
YATUNG
TOWANG
BOMDILA
B H U T A N
I N D I A
DARJEELING
KALIMPONG
R. Brahmaputra
TEZPUR
BURMA
Y U N N A N
P A K I S T A N
LEGEND
Boundaries of Tibet Autonomous Region
Motor Roads
Route of Dalai Lama's Escape
50 0 50 100 150 200 MILES

1949. Tibet appealed to the United Nations in 1950 for assistance against the Chinese on the ground that it had, since the fall of the Manchu dynasty in 1911, been completely independent. A motion by El Salvador that this appeal be put on the agenda of the General Assembly was not acted upon, on the understanding that a peaceful settlement, which would safeguard Tibetan and Chinese interests, could be reached. In 1951, an agreement was signed between China and Tibet which gave the former control over Tibet's defence and foreign policy but guaranteed Tibet's internal autonomy. Shortly thereafter, a Representative of the Chinese Government and Chinese troops were established in Lhasa and in 1955 a Preparatory Committee for the Autonomous Region of Tibet, to which the Dalai Lama's government was subordinate, was created. The main function of the Preparatory Committee was to prepare for the regional autonomy of Tibet "in accordance with the provisions of the Chinese constitution, the agreement of 1951 and the concrete circumstances of Tibet". Since the revolt in March, the Preparatory Committee has taken over all the functions of local government in Tibet.

The most important Chinese achievement in Tibet since 1950 has been the construction of roads to Lhasa from the neighbouring regions of China. In addition, large numbers of Chinese have been settled in Tibet.

Opposition to Chinese Communism

There has been much opposition in Tibet to Chinese Communists. Resistance began in the form of anti-Communist resolutions in the village meetings called by the Communists as part of their propaganda campaign, and from this something in the nature of a national resistance movement developed. In mid-1956 there was a large-scale uprising in eastern Tibet, and in 1957 Tibetan opposition forced the Chinese to postpone their programme of social and economic changes.

China has long maintained that it occupies a special position in Tibet and the basis of the Chinese Communist claim is that Tibet is an integral part of China. The Tibetans, however, claim that they are geographically, racially and culturally distinct from the Chinese and that they have, therefore, a right to at least internal autonomy which, they say, the Chinese Communists have violated.

Tibet, with an average elevation of 12,000 to 16,000 feet, is isolated from the rest of the world by three of its highest mountain ranges (the Himalayas in the south, the Karakorams in the west and the Kunluns in the north). The Tibetans, many of whom live outside the present boundaries of Tibet, are racially quite distinct from the Chinese, and are believed to be related to the Mongols. The warlike Khambas of eastern Tibet and the adjoining areas of China, although easily distinguishable in appearance and language from the inhabitants of central and western Tibet, share their allegiance to the Dalai Lama.

Form of Government

Tibet is a theocratic state in which the Buddhist monasteries exert a great deal of control. In order to preserve their historic rights, the monasteries found themselves, of necessity, in opposition to the imposition of communism. The Chinese, apparently, are directing their attention to removing the monasteries as

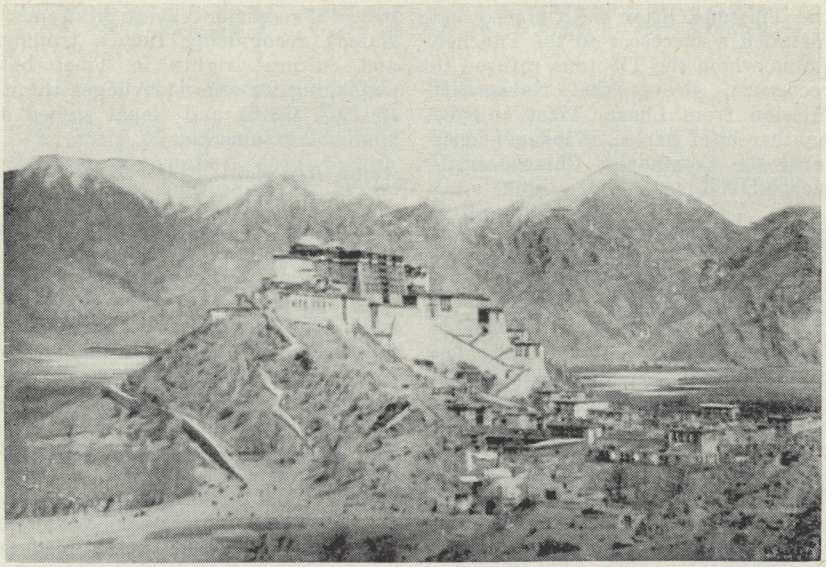
anti-Communist centres and as an effective social force. The successive reincarnations of the Dalai Lama, Tibet's spiritual and temporal leader, began in the fourteenth century. The Dalai Lama is regarded as the reincarnation of an abbot considered to have attained Buddhahood, and of Chenrezi, the patron deity of Tibet. In the seventeenth century the fifth Dalai Lama declared his former tutor to be the Panchen Lama, the reincarnation of the spiritual guide of Chenrezi. The Panchen Lama exerts a spiritual influence comparable to that of the Dalai Lama but is regarded as his subordinate in temporal matters.

After the death of each Dalai Lama, a search is made for the child who is shown, by the recognized signs, to be his reincarnation. Each Panchen Lama is chosen in the same way. The temporal rule of the Dalai Lama is exercised by a regent until the former is about 18 years of age. The Tibetan Government consists of a Council of Abbots presided over by the Dalai Lama, the Kashag or chief administrative body, and a National Assembly attended by representatives of the monasteries and of the aristocracy.

From the seventh century, when the Tibetan civilization began to take its distinctive form, until the ninth century, the Tibetan monarchy ruled large areas outside Tibet pro-

Courtesy External Affairs Bulletin

A Khamba tribesman.



Courtesy External Affairs Bulletin

The Potala palace, the Dalai Lama's official residence in Lhasa.

per. By the tenth century, however, Tibet's military power began to decline and during the thirteenth century it was invaded by the Mongols.

China's Claim

China's claim to a special position in Tibet had its origin in the eighteenth century. In 1718 Chinese forces entered the region to forestall a suspected Tibetan-Mongol alliance against China. Two years later the Chinese occupied Lhasa and introduced two Residents who were to have considerable authority in the administration of Tibet. The Chinese Empire's influence in Tibet, although it was partial and intermittent and steadily weakened in the latter half of the nineteenth century, remained until the fall of the Manchu Dynasty in 1911.

On the condition that Tibet's internal autonomy be preserved, Chinese suzerainty over Tibet was recognized in an Anglo-Tibetan Convention of 1904, an Anglo-Chinese Convention of 1906 and an Anglo-Russian Convention of 1907. The Simla Convention, signed by Britain and Tibet in 1913 after the establishment of the Chinese Republican Government, also recognized Chinese suzerainty in Tibet. Because it refused to accept the Sino-Tibetan border outlined in the agreement, China did not ratify the Simla Convention.

From 1911 until the establishment of the Chinese National Government at Nanking in 1928, Tibet was virtually independent. After 1928, however, the Chinese Nationalists made frequent incursions into Tibet and gained measure of control there. This control lasted until 1949, when

the Tibetans, after the Chinese had installed a successor to the Panchen Lama whom the Tibetans refused to recognize, drove the Nationalist Mission from Lhasa. Tibet enjoyed another brief period of independence until the Communist Chinese invasion in 1950.

India is, perhaps, the country most immediately concerned by the events in Tibet, in view of its cultural links with Tibet and of the strategic location of the region on its northern frontier. Moreover, when India became independent in 1947, it assumed the United Kingdom's rights and duties in Tibet and took over the British Mission in Lhasa. After the Chinese Communist invasion of Tibet in 1950, the Indian Government, in formal notes to the Chinese Communist Government, charged that China had violated Tibet's autonomy. The Chinese Government repudiated these charges, claiming that the Tibetan question was a domestic problem of China. In 1954, India and China signed an agreement (in which the famous Panch Sheel or "Five Principles" of peaceful coexistence were first enunciated) recognizing India's trading and cultural rights in Tibet but abolishing its other privileges there. In 1956 China and Nepal signed a similar agreement.

Asian Reaction

Communist China, as a result of its actions in this year's Tibetan revolt, appears to have lost prestige in Asia and to have caused considerable apprehension there about possible future Chinese aggression. Prime Minister Nehru, although he has declared that he regards the Tibetan affair as the internal concern of China and that India does not intend to abandon its policy of non-alignment, has shown concern for the Dalai Lama and for a peaceful solution to the Tibetan problem. A number of other Asian leaders have expressed their sympathy for the Tibetans and many Asian newspapers have been critical of Communist China's suppression of the revolt. Thus the Tibetan revolt may have effects which will extend far beyond the boundaries of the region itself.

Dogs Liable to Call-up in Russia

. . . The Alsation was liable to call-up, for in the Soviet Union all pedigree dogs must be registered with the authorities and they are technically liable for military service. In practice, this applies mainly to Alsations.

As individuals, Russians are fond of dogs, but the official attitude tends to regard them less as friends of man as animals. Pavlov, one may remember, used dogs to help him establish his theories about conditioned reflexes, and more recently Russia sent up Laika, the world's first space dog, in Sputnik II.

When rationing was in force during the war and for two or three years afterwards, the Russian service dogs had their own ration cards, entitling them to cereals or flour, and meat: puppies up to six months also received a special ration of bone flour. One cannot take an officially registered pedigree dog out of the Soviet Union without special permission from the authorities, and this involves a great deal of red tape, so that in fact the dog's passport is for "internal" purposes, not for foreign travel.—*From "The Listener", BBC.*

CAVALRY VS. INFANTRY — 1813

By
J. MACKAY HITSMAN, HISTORICAL SECTION,
ARMY HEADQUARTERS, OTTAWA

The early history of Canada is a chronicle of conflict, even though most of the engagements may be dismissed as mere skirmishes and the decisive campaigns which were waged by regular troops in the European manner can be counted on the fingers of one hand. Due to the expanse of forest which was interrupted only by the many rivers and lakes, these last were fought without the benefit of cavalry and with only a handful of gunners and engineers to support the infantry. Not until the War of 1812 with the United States had been in progress for almost a year did a first regiment of regular cavalry reach Canada.

Following their arrival from England on 17 May 1813, the 19th Light Dragoons proceeded in a very leisurely manner to get themselves organized for active service. Lieut.-Colonel the Hon. J. B. R. O'Neill and his dragoons seem to have appreciated their position, as the only militarily-*élite* cavalrymen in this backwoods theatre of operations, and decided to make a good thing out of their stay in the Montreal area.

Lieut.-General Sir George Prevost had been an infantry officer, however, and was not duly impressed by the fact that the British Army had finally seen fit to send him a proper cavalry regiment. Moreover, in view of the overwhelming odds facing the regulars and militia then in Upper Canada, the Commander of the Forces can hardly be blamed for eventually losing his temper. Thus a letter dispatched by his Military Secretary on 4 August to Major-General Sir Roger Sheaffe, commanding the Montreal district, read as follows:

"His Excellency having observed with regard the little progress made in mounting the Troops of the 19th Lt. Dragoons is apprehensive of the existence in that Corps of a fastidiousness in the Selection of their Horses highly prejudicial to His Majesty's Service. You are therefore required to hasten the purchase of strong and useful Horses accustomed to the vicissitudes of the Climate of this Country, to the Forage which is to be obtained in it, and inured to its difficulties and Roads for the purpose of rendering them effective as Cavalry or otherwise the men of the Corps unprovided with Horses are to be employed as Infantry."

This was followed by a curt but realistic letter to the Deputy Barrackmaster General:

"In answer to your letter of the 31st ult. enclosing a Return of Lodging Money for the 19th Light Dragoons in which the Subalterns are included for Captns. Allowances and sundry Sergeants for those of Staff Sergeants, I am authorized to signify to you that the Commander of the Forces does not approve of the Subalterns of Cavalry receiving a higher rate of allowances than those granted to Subalterns of Infantry of the Line and he directs that Subalterns allowances only may be made to them accordingly.

"The allowance as staff Sergeants to the several descriptions of Sergeants as stated in the Return is approved by His Excellency."

Soviet Military Art and Science

A DIGEST OF AN ARTICLE WRITTEN BY COLONEL S. KOZLOV AND REPRINTED FROM THE SEPTEMBER 1959 ISSUE OF THE *Military Review* (U.S.)*

It is generally known that any war is prepared first of all in the *political* respect. The preparation of a country for war politically has as its goal the securing of popular support along the road to and during a war, and the overcoming of hostile political influence.

In the Soviet Union the moral-political unity of the people is achieved by the execution of party policy, its organizational work, and its elading role and selfless devotion to the cause of communism and to the entire social and state system.

War also is prepared in the *diplomatic* respect. By means of active diplomatic activity, a state strives to consolidate its external political position, to guarantee the support of friendly countries, to neutralize wavering states, and to isolate hostile ones. The results of military actions are used in diplomatic activities in time of war.

War is prepared and waged in the *ideological* respect, for which all the variety of means and methods of ideological influence on the popular masses (the press, radio, motion pictures, literature, and art) are directed toward the propaganda of one or another idea, mobilizing the masses for armed struggle for definite goals.

War is prepared and waged in the *economic* respect. This is the development of its economy for the achievement of preponderance over the economy of the opponent. Along with this is the application of economic measures which are directed toward the detriment and weakening of the economy of the enemy (embargo, prohibitory duties, and so on).

War can also be waged in the *psychological* respect. As historical experience has shown, aggressors always willingly resort to this form of struggle, attempting by various means—propaganda, for example, or means which operate directly on the psyche ("howling" bombs)—to crush the will to battle of the people of the opponent's country.

Under contemporary conditions war is waged in the *scientific-technical* respect. In the different areas of science and technology, new and more effective means of battle are sought to achieve scientific and technical preponderance over the opponent.

Finally, war is prepared and waged strictly in the *military* respect, that is, with armed forces which are trained and employed as the chief instrument of war. Their actions are subordinated to laws which have a specific character and are distinguished from the character of all other means, methods, and forms of struggle utilized in the interests of war and which assist in the attainment of victory over the enemy.

Military Science

Military science includes a general theory which considers all the broadest questions related to armed struggle, the laws of its conduct,

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and the means, conditions, and factors which influence its course and outcome. The general theory is a statement of the general bases of military science. In it is set forth the structure of military science, the interdependence and connection of all fields and disciplines which comprise it and their subordination. Consequently, *the most important component part of military science is the theory of military art.*

In military science *the theory of the training and education of troops* occupies a great part, for only on a scientific basis in this area can the necessary results be achieved.

Military Art

The study of military art includes the methods and forms of armed struggle utilized by the army, air forces, and navy in battles, campaigns, operations, and in war as a whole. It also is expressed in the practical activities of troops, the command and troop-leading demands from military cadres' high knowledge, definite skills, mastery, and a creative approach to the solution of tasks placed before them.

The theory of military art is a system of scientific views, principles, and rules, accepted in one army or another, on questions of the employment of armed forces in military operations of all scales. The concept of "military *art*" did not occur accidentally. It indicates that not all troop actions or common activities are attributable to art, but only those which are distinguished by originality, a high perfection, and which lead to significant results —to the defeat of the enemy.

In working out the methods and forms of military actions, Soviet military art proceeds from the fact that contemporary wars between large and powerful states have acquired the character of strenuous and protracted clashes. These clashes ordinarily have a world scale and are waged on land, sea, and in the air by a variety of combat means, taken in combination, in interaction, in mass, and in accelerating quantities. Victory against a strong, technically equipped, and skillful enemy can be achieved now only as a result of a series of continuous and shattering blows in a complicated and diverse armed struggle, the main goal of which is the destruction of the vital strength and technology of the enemy, and the undermining of his military, economic, and moral potential.

The most important feature of our military art is its activity. This is explained by the laws of armed struggle wherein, according to the expression of V. I. Lenin, it is necessary to act resolutely, boldly, and offensively.

Applying every possible form and method of military activity and selecting that which is most appropriate to the concrete situation, Soviet miiltary art considers the offensive as the basic form of armed struggle. It also acknowledges the defence but considers it a subordinate method of activity to which to turn when attack is unsuitable or is not remunerative.

At the same time, defence should be active, capable of slowing down hostile troops, and should inflict such heavy losses on them as would force them to give up the continuation of the attack. Thus the most important goal of the defence is the imposing on the enemy of the maximum losses, and depriving him of the initiative, the gaining of time, and the retention of space.

Among other possible methods of

operation is the counter-attack, utilized against an enemy who is still engaged in the attack but who has already been weakened by a stubborn defence. Nor are retreat operations excluded when necessary and when undertaken with the aim of the economy of forces and the improvement of the position of one's own troops.

It is necessary always to remember, however, that only an active, shattering offence is capable of guaranteeing the attainment of the most important goal—the complete destruction of the enemy.

Soviet miiltary art is in an uninterrupted state of development. Under the influence of changing conditions and capabilities, the old methods and forms of waging war are transformed or disappear. New methods and forms appear which are the more effective, the more fully and exactly they reflect the objective conditions and requirements of contemporary war.

Military art usually attains its greatest development in the course of war against a strong and skillful opponent. This does not mean that the experiences of "small" wars are not of value for perfecting military art, but they must be evaluated properly and used boldly in contemporary conditions.

Dogmatism and triteness are foreign to Soviet military art—it is distinguished by flexibility, innovation, boldness and daring, and by the broad initiative of unit commanders and of all troop personnel.

In working out methods and forms of the preparation and waging of various combat operations, Soviet military art considers the uninterrupted development of weapons and technology. Contemporary means of struggle create an unusually dynamic, complex, and tense combat situation in which such factors as surprise and rapidity of movement may play an enormous and, at times, decisive role. The important influence of conditions of locality, weather, and time of year and day should not be forgotten.

Soviet military science studies the features of the various scales of armed struggle (strategic, operational, tactical) where quantitative changes, and also considers the specific characteristics of the various types of armed forces. For example, battle on the sea or in the air has a series of its own special conditions; therefore, the existence of a naval and an air art as a part of the Soviet military art is entirely proper.

At the same time, Soviet military-theoretical thought denies the independent character of war on the sea and equally of war in the air, considering that combat actions, wherever and with whatever means they are waged, are subordinate to a single general goal of war. Because the achievement of this goal is unthinkable only on land, on sea, or in the air, the existence of the concept of "war on the sea" or "war in the air" is unjustified. There can be no talk about military operations on land or on the sea since the operations of each of these usually are closely interwoven.

The theory of military art sets forth its bases and general principles, valid for all types of armed forces, troop arms, and scales of employment in contemporary war. These bases and principles are established on known objective laws and assist in the application of the proper decision in one combat situation or another. In distinction from bourgeois military thought which considers the same principles non-

historically and abstractly and considers them to be the result of the genius of outstanding troop leaders, Soviet military art considers that these principles flow from combat practice as its generalization, altering its contents in co-ordination with changing conditions of armed struggle.

Soviet military art is divided into strategy, the operational art, and tactics. All three of these componponent parts are connnected among themselves and are mutually dependent. With a definite independence each of them investigates only the area of phenomena which have to do with its subject and supplements the other parts while furthering, in this manner, the solution of the general tasks which are placed before the armed forces. However, the leading role in military art belongs to strategy because particular successes in war are subordinate to general goals. The achievement of tactics are not important in themselves but only from the point of view of the attainments and possibilities of the operational art. Achievements of the operational art may exert an influence on the course and outcome of war only in case they are co-ordinated with the goals of strategy and coincide with its interests and opportunities.

Strategy

Strategy is that theory which comprises the leading part of Soviet military art and which expresses the basic method of waging war and its campaigns in co-ordination with its goals which are determined by the policy of the Soviet Union. For its subject, strategy has the study of concrete conditions and opportunies of waging war. It also develops methods for the utilization of armed forces for the achievement of victory on the scale of the war as a whole, and according to its separate stages of military actions and separate theatres.

The goals and tasks of strategy flow directly from the goals and tasks of state policy. With respect to strategy, policy plays a leading role and this situation remains unchanged from the beginning to the end of the war.

Only a full co-ordination of strategy with state policy, as well as full co-ordination of political goals with the resources and means of strategy, make possible the successful waging of armed struggle. In the elaboration and establishment of the goals and tasks of the war as a whole and of its separate stages, policy is obliged to consider the resources of its own strategy and also the strategy of the opponent. Accordingly, strategy should never over-estimate its own powers nor underestimate the powers of the opponent because both involve large errors in the conduct of war which are difficult to correct and which may lead to defeat.

Proceeding from the concrete goals, conditions, and resources of armed struggle, the theory of strategy helps properly to select the basic method of military activities, to determine their forms and general limits, and to indicate the direction of the application of the main forces in co-ordination with military, economic, moral and other resources.

The means of strategy are all the armed forces of the country in an inseparable unity and close combination, for war is waged not by any one type of them alone but by united forces. Therefore, the isolation of types of armed forces and the theory of their utiliziation is out of the

question for Soviet military art.

For deciding the fate of war the actions of every type of armed force are important, not in themselves, but only in their interrelation. This is an objective law of strategy which finds its expression in the concordant development of each of the types of armed forces.

The co-ordination of the development of types of armed forces must not be understood as a proportional development which exists in unchanging correlations. It is apparent that, in accordance with the concrete goals and conditions of battle at the various stages of war, one or another type of armed force may play the leading role. Along with this, the resolution of separate individual strategic missions of war and its campaigns chiefly by some single type of armed force such as the navy or the air, for example, is not excluded.

It is also entirely in order that the success of a campaign or of the war as a whole may depend on the proper selection of the main blow. Along with this it is necessary to consider the entire aggregate of factors which shape the advisability of action precisely in the given direction. As the experience of history shows, among such factors are not only the purely military but also a series of factors of a political and economic nature—the attitude of the population, of the classes and parties of the countries and territories through which the chosen direction of the blow will pass, the presence or absence of definite economic resources, and others. The necessity of taking just this regularity into account is especially made clear and elaborate by Soviet military science.

Operational Art

The theory of the operational art has a short history. Operations as a basic form of armed struggle appear in detailed form in the change from industrial capitalism to imperialism and the proletarian revolution. Its theoretical comprehension has almost coincided with the appearance of Soviety military science. The creative method of Soviet military science and its revolutionary, innovating character have permitted it properly to evaluate that newness which was typical for modern wars, to explain it, and to use this newness in its theory.

The Soviet operational art investigates laws, inherent in modern operations, which are a complex of varied military actions on land, in the air, and on the sea by large groupings of troops. In their composition these groupings include units of various types of armed forces acting in definite operational or strategic directions.

According to their scale, operations are divided into army, front, or group of fronts actions. An operation which is conducted with a preponderance of forces of some type of armed force accordingly may be air, sea, anti-air, air landing, and so forth. Operations in which large units of all the basic types of armed forces participate — for example, landing and anti-landing operations —are called joint operations.

The goal of any operation is the defeat and destruction of large groupings of the opponent's troops or the seizure of an objective of operational importance. In a number of cases, operations—according to their goals, scope, and results—can directly influence the attainment of intermediate strategic goals of war; that is, they may have strategic importance.

The practical application of the

theory of the operational art consists of the organization of combat forces of troop units with the goal of deciding operational goals. This finds expression in the preparation for operations, including the determination of the goals, scheme, and forms, the decision as a whole, the planned utilization of forces and means according to place and time, and the comprehensive direction of the actions of formations and units. Political work among the troops and the population in the region of activity and the material-technical maintenance of units and formations have great significance in this connection.

The operational art of land forces investigates the methods and forms of the utiliziation of operational units of varying scales (army, front, group of fronts) in land theatres of military actions and also joint operations of units of types of armed forces conducted on coastlines.

The operational art of air forces elaborates the theory of the preparation and conduct of independent air operations and also the theory of action of aviation with land troops in naval, air-landing, anti-landing, and anti-air operations.

The operational art of naval forces elaborates the theory of the preparation and conduct of independent operations on the sea, the methods of the utilization of naval forces in joint operations, in sea landing, anti-landing and anti-air operations, and actions of land forces on coastlines.

The theory of the operational art has, in the capacity of an independent subdivision, the theory of the operational rear which elaborates questions of the material-technical maintenance of operations of various types and scales.

For the operational art there are laws which are valid as general laws, similar to the statements in the discussion of strategy. It also has its own specific laws which are engendered by the concrete, material conditions of the conduct of operations.

For example, it is characteristic for strategy to have a co-ordination of the various types of armed forces which operate either jointly in a single theatre of military actions and in a single strategic direction or in various theatres. For the operational art the law is the combination of forces of operational units within the limits of a single operation and in the chosen operational direction.

Tactics

Tactics, which is concerned with the study of the objective laws of battle on land, in the air, and on the sea, and the working out of the methods and forms of conducting military actions on a tactical scale, is an inalienable component part of the military art.

The theory of tactics is closely dependent on the operational art which uses the means of tactics and tactical actions of troops for the solution of operational tasks. Directing, and to a significant degree determining, the developent of tactics in its interests, the operational art does not exclude a relatively independent development of the latter. The guiding influence of the operational art on tactics, is not expressed in the instruction of methods of battle but in the determination of those general goals and results which tactics should achieve with its own means in the interests of the operation. This inevitably

will involve the selection of the forms of battle which are most suitable to the indicated goal.

Battle is an organized armed clash of detachments, units and formations of land troops, and air or naval forces, acting independently or mutually one with the other, pursuing the goal of the destruction and capture of the enemy or imposing on him such losses as would force him to turn from the fulfillment of his mission. Battle is conducted by armed people, basically organized and trained, directly utilized for the imposition of damage on the enemy by a variety of military techniques. It is limited in time and space by a definite quantity of forces and means, the utilization of which engenders specific laws. Therefore, it is possible to distinguish between the tactics of detachments, units, and formations.

Within the limits of contemporary operations or independently, battle can be conducted:

On land (ground battle)—by land troops alone or with the support of the air forces and the navy.

In the air (aerial battle)—by air forces or with the support from the ground (sea), including the resources of anti-aircraft defence.

On the sea (naval battle)—by naval forces or with the support from the land and air.

Tactics are divided accordingly into general tactics which examine the laws of contemporary general troop battles, and tactics of types of armed forces (land troops, aviation, navy).

Each of the tactics of a type of armed forces which has its own general tactics is also divided further into tactics of type of troops. In its turn, the latter is divided into tactics of the detachment, of the unit, and of the formation.

Combat actions of troops should always be secured in the material and technical respect which predetermines the necessity for the existence of a detailed system of the army rear. In accordance with this, contemporary tactics have a division of tactics of the troops of the rear and the latter in its turn is divided into tactics of the organization and establishment of the rear in the various types of battle, tactics of supply, military-medical tactics, and so on.

The successful combat actions of troops are unthinkable without reliable political work which calls for the creation, support, and strengthening of the necessary moral development of the troops, the raising of the steadfastness and persistence the intensification of the onslaught in battle, the mobilization for overcoming difficulties, and the achievement of decisive results.

A real criterion of the level and quality of military art, of its appropriateness to its purpose, is that result which is achieved by the practical application of the theory of the military art in a war against a strong and trained opponent. For us, the past war against Hitlerite fascism was such a severe test. Our military art passed this test with honour, demonstrating its high level, progressive character, and indisputable superiority over the military art of the opponent.

In co-ordination with the development of tactics of battles involving troops and means of battle, new tactical methods appeared for artillery, rifle troops, air landing, engineer, communications troops, and others. The operational art also enriched

the tactics of aviation. The methods of operation of the navy were perfected.

Soviet military art emerged from the Second World War significantly enriched. The experience of this war, unprecedented in its scale, the variety of conditions in which it took place, of methods and forms by which it was conducted, has a great value. However, military affairs move forward quickly and require us always to be equal to contemporary demands.

The Basic Aim

The basic aim of contemporary military art is the skillful application of the means of mass destruction with the help of aviation, rocket weapons, and artillery, and the rapid realization of the results achieved thereby. In connection with this, the role of the air forces and of tank and air-landing troops has grown and the role of the navy changed. Military actions have acquired a swift, dynamic character.

The importance of surprise, of the initiative, and of the independence of all personnel has been sharply raised. Troops, utilizing their mobility which has been acquired by motorization and mechanization, should manoeuvre boldly and quickly, concentrating for the assault in the very process of its execution, perform powerful, shattering blows, and disperse rapidly in the interests of guaranteeing the conditions of the manoeuvre and of preserving forces and means from the blows of the enemy.

The necessity of attacking in the highest tempos, of forestalling the enemy in concentration, of seizing boundary lines, and of preventing the organized withdrawal of his forces and means all make necessary the waging of military actions uninterruptedly night and day. This is made possible by the development of the corresponding auxiliary techniques. A stubborn defence must not be capable of being destroyed by the blows of a strong opponent who employs means of mass destruction, aviation, rocket weapons, large groupings of tank troops, and air landings. The skillful utilization of powerful means of destruction, of fire and manoeuvre, the use of the locality, and camouflage and security measures permit the defenders to solve this problem in short periods and with decisive results such as could not previously have meen achieved by the defence.

The successful and uninterrupted development of Soviet military art also depends on the status of many auxiliary military aspects. These include military history, military administration, military geography, and a series of others.

At the basis of the education and training of Soviet troops lies concern about the raising of the political consciousness of personnel, its combat mastery, and the relating of methods of training to the character and demands of modern war. These demands impose a high responsibility on soldiers with respect to moral steadfastness, physical endurance, technical literacy, and comprehensive military culture. There must be a consideration of difficulties which now arise with the creation in the educational order of conditions more closely connected to military reality. In this connection, officers are urged to seek more inventively for possibilities of creating such conditions in the educational process as would permit the development in every way possible and in all personnel of steadfast-

Capabilities and Vulnerabilities in the Evaluation of Information

A DIGEST OF AN ARTICLE WRITTEN BY COLONEL GIUSEPPE RAIMONDI AND LIEUT.-COLONEL RODOLFO RUFINO AND REPRINTED FROM THE OCTOBER 1959 ISSUE OF THE *Military Review (U.S.)**

The greatest degree of success that the intelligence unit can achieve in war is that the results of its intelligence activities be useful to commanders in making their decisions.

Search for information concerning the enemy would be useless if the intelligence unit were not able to translate this information into terms of *capabilities* and relative probabilities of adoption. These are elements of determinative value in the establishment of the commander's concept of action. The final phase of every informational process—fittingly termed the "utilization of information" — is concluded with the presentation to the commander of the appraisal of the enemy situation.

This concept of the result which must be achieved by offensive intelligence activity recently has been reinforced by a new concept which places the determination of the vulnerabilities of the enemy on the same level of importance as that of the determination of his *capabilities.*

In defining the missions of the chief of the intelligence unit, recent (Italian) regulations require, among other things,, that he present his facts in the following order:

1. Mission of the intelligence unit.
2. Summary of the character of the zone of operations.
3. Enemy situation and capabilities.
4. Conclusions indicative of the probabilities, on the part of the enemy, of putting into action certain operational activities deriving

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Soviet Military Art and Science

(Continued from preceding page)

ness, mobility, endurance, gumption, decisiveness, and boldness.

The inculcation of any patterned methods in those in training is completely inadmissible. The most severe enemies of the military art are triteness and passivism, a lack of creativity, of flexibility, and of the capability of acting in accordance with the situation in order to force and to direct the course of events.

Originality in the combat training of troops consists of the trainees receiving skills in the basic military art and practice in the utilization of methods and forms of battle worked out by it. Along with this it is necessary to keep in mind the fact that military art does not provide ready, unchanging recipes for all cases. The forms and the methods of action recommended by it are good so far as they are appropriate to the real situation. Art is necessary in the education and training of troops as it is in any other complicated matter.

from his capabilities and his *vulnerabilities.*

In the section relative to the enemy situation one of the paragraphs deals with *the enemy's peculiarities and weak points,* (personnel, operations, material, and logistics). The conclusion includes two paragraphs dealing with probable capabilities of action and vulnerabilities.

Strategic Intelligence

The field of strategic intelligence includes the knowledge the civil and military authorities must have in peacetime to safeguard the security of the nation and to carry on military operations in time of war. The capabilities of a foreign nation are represented in peacetime by the lines of action it is able to engage in on its own initiative, or as a retort to the initiative taken by others.

In war, in the field of strategic intelligence activity, the capabilities of an enemy army are represented by its ability to attain a given objective, expressed in terms of force and time. In case the enemy objective is well-defined, as, for example, the attainment of a vital strategic objective (Stalingrad) or the containing of an amphibious operation (the landing in Normandy), capabilities are represented by the strength of the ground, naval, and air forces the enemy is able to put in the field and maintain without diminishing his commitments in other strategic missions.

Vulnerabilities

Vulnerabilities are those weak points or negative qualities that a nation may present in its "strategic stature," that will affect its capabilities, or permit psychological, political, economic, and military weapons to deal it a blow at considerably less cost than a direct attack.

The determination of the vulnerabilities a nation may present is not a simple matter. This is not a reference to the essential indefensibility of its frontiers or to the relative ease with which it would be possible to destroy its cities, its ports, or its industrial establishments. Rather, it is necessary to focus on and evaluate those weak points whose exploitation can lead to very extensive results in comparison with the means employed, rendering the operations useful and, at the same time, economical.

Typical examples of this in the military field are to be seen in the great results obtained by the Allies in Germany by all-out concentration of strategic bomber effort on the targets represented by the plants for the production of synthetic fuel and aircraft. Similar results were obtained in Japan by the attacks conducted against the transportation which carried coal between Hokkaido and Honshu.

The investigation of the specific points of vulnerability of a nation cannot, however, be directed toward the entirety of its internal structure, but must be confined to those fields which can be explored by deduction and on the basis of knowledge of the limits of one's own means of exploitation.

The vulnerabilities of an enemy army may be defined as those conditions of weakness which can render it a particularly easy prey to attack, deception, or defeat. The discernment of a weakness in the enemy camp (a discernment often

linked with the evaluation of the capabilities of that particular enemy force) may lead a command to undertake action not previously planned, or to change an offensive or a defensive concept radically. Such a weakness might be the discovery that a sector of the front is being held by inadequate enemy forces, or that the enemy in a given offensive action has suffered excessive losses of men and material.

Only in certain cases, however, as in the field of psychological warfare, do the search for and the determination of specific vulnerabilities become the methodological essence of the intelligence activity and the basis of attack procedures.

In the domain of strategic intelligence it is apparent that informational activity with respect to a probable or a declared adversary must be oriented toward determining capabilities and vulnerabilities in *the complex* of his strategic structure.

In the field of strategic operational intelligence immediate and tangible results may be attained from the discernment and evaluation of the enemy's vulnerabilities. Results may be sufficient to justify an informational report establishing the enemy's most probable lines of action, and influencing one's own possible courses of action.

Tactical Information

Tactical intelligence is that knowledge concerning the enemy and his circumstances in a zone of operations concerned with tactical objectives, or even strategic objectives, of direct and immediate interest to the commanders and staffs of the units in the field.

Every intelligence problem of a tactical character, as well as those of a strategic character, due to the overlapping and interdependence between strategic and tactical intelligence, always has reference to a situation which constitutes the basis of at least a general knowledge of the enemy and his circumstances. The necessity for resolving a particular intelligence problem arises, for the most part, in reference to a mission which has been entrusted to a unit. It is of a breadth, and requirement in point of details, proportional to the level of the unit itself.

As is well-known, the responsibility of defining to his intelligence unit what he must know concerning the enemy so that he may best accomplish the mission he has received devolves on the commander of the unit. It is incumbent on the commander to frame the intelligence problem with a thought to reducing the gamut of possible surprises to a minimum and of confirming one or more of the hypotheses he has formulated on the basis of the knowledge he already has of the enemy, his own situation, and the terrain.

On the other hand, it is the particular mission of the intelligence unit to succeed in establishing the enemy's situation and circumstances as related to the requirements anticipated by the commander, even to the point of tendering an opinion not only with regard to the capabilities of the enemy but also with regard to the degree of probability of his putting them into action. The intelligence unit must also discover his probable weak points and consequent vulnerabilities that may be exploited.

The determination of the enemy situation is a reply to the requests

of the commander. In this reply the enemy's capabilities and vulnerabilities, as related to the particular mission, occupy the leading place.

In the field of tactical intelligence, enemy capabilities are those lines of action and operational acts the enemy is materially capable of and which, if undertaken by him, can influence the fulfillment of our mission. There are two conditions, then, that define a capability: first, the enemy must have the forces and the means for undertaking that particular line of action; second, if the enemy undertakes it, it will exert a direct influence on the fulfillment of our mission. This represents nothing more than the translation into explicit terms of the enemy's elements of strength — in other words, *what the enemy is able to do against us.* Every capability that can influence the fulfillment of his mission is of interest to the commander for the purpose of his decision and for rendering him as well-prepared as possible for conducting his action with a reduced number of unforeseen occurrences.

In the evaluation which the commander works out for reaching his decision, some enemy capabilities may assume determinative importance in certain cases. In fact, rather than standing in the way of the fulfillment of the mission he has received, they may actually favour it. From the analysis made of the elements of strength of the enemy, there may emerge one element which, if not essentially an element of weakness, is of such a nature as definitely to influence the decision of the commander.

For example, in an attack on an enemy defence position that is strong in static elements but less strong in its ability to react, it could be better to undertake a laborious turning of an exposed flank rather than a frontal attack.

In a situation such as this in which the enemy's, vulnerability is not so much represented by his exposed flank as by his incapability of reinforcing it in time and of reacting by manoeuvre, all elements of weakness would disappear if the enemy received reinforcements in time to increase his reserves. Thus the element of time enters.

There always exists, alongside the elements of strength, elements of weakness which can move the commander to give a completely new physiognomy to his decision if detected in time. In certain situations they may influence his own capabilities of action in a decisive manner.

Principal Aspects

As we have stated, recent (Italian) doctrine points out the principal aspects toward which the research of the intelligence unit must be directed, namely: personnel, operations, means, and logistics.

It seems worthwhile to go into more detail in regard to each subject.

Personnel: deficiency in replacement systems; a disproportionate number of men who are either too young or too old; units made up of troops from a certain region which, in previous actions, have shown themselves to be lacking in combat capacity; a high percentage of men who are ill; cases of epidemic; lack of resistance or of adaptability to the existing climatic conditions; organic strength of the units much below that anticipated; morale especially low.

Operations: habitual repetitions of plans of manoeuvre or of deployment; defective organization of the ground; inappropriate distribution of reserves or inadequate mobility of the same; incomplete training of troops for a particular mission; inadequate artillery support; troop concentrations in the face of atomic conditions.

Means: deficiency in equipment of personnel; lack of certain matériel in certain sectors (mines, anti-tank weapons, tanks, atomic weapons).

Logistics: a scarcity of certain supplies; deficiencies and obstructions in the logistical organization; excessive dependence on a single communication route; especially vulnerable points along communication routes.

Miscellaneous aspects toward which search should be directed include:

Intelligence: whenever there exists, for example, the possibility of deceiving or of neutralizing given intelligence organizations, or if one discovers excessive dependence, on the part of the enemy's intelligence services, on certain sources for their information.

The *personalities* of the enemy commanders who, on the basis of their past actions, may be expected to present particular points of weakness (excessive reliance on the defensive form of combat, or boldness in attack not supported by adequate organization).

This list is necessarily incomplete but may give an idea of the points toward which the intelligence unit must direct its research efforts.

The intelligence unit must then arrive at the determination of vulnerabilities by means of a comparative analysis of the outstanding weak points discovered, calling attention to them for exploitation by the operational units or the commander.

Intelligence activity aimed at the detection of the weak points and vulnerabilities presented by the enemy not only informs us of "what the enemy is able to do," but at the same time, provides a knowledge of "what we should do to the enemy."

This new concept—which gives to the intelligence activity an offensive, and not merely a defensive picture of the situation—finds the chief reason for existence in the necessity for stimulating a permanent offensive attitude, even in defence.

Two Basic Questions

There are two basic questions pertaining to vulnerabilities: one relative to the framing of the intelligence problem by the commander, and one relative to the responsibilities of the intelligence unit.

The first question could be expressed as follows: should the commander in framing the intelligence problem include among his EEI (essential elements of information) definite requests relative to enemy vulnerabilities, as is done with reference to the enemy's capabilities?

At first thought the reply would seem to be negative. It is obvious, in fact, that it would not be possible for the intelligence units, at all levels, to explore all or part of the elements relative to the enemy's points of weakness, or even to be aware of their existence.

But many bits of information gathered by various sources and by the intelligence units at the various

levels can gradually give concrete form to a weak point or a peculiarity of the enemy. The detection of a weak point would be very improbable at the lower levels. The systematic and co-ordinated assembling of numerous bits of evidence, which is possible only at the higher levels, can result in the feeling that there is something in a certain domain which warrants investigation and, as a result, gives rise to intelligence research. Research which is requested and oriented in this direction, whether on the part of the lower or the higher levels, may result in the discovery of the weak point and in providing sufficient material for defining the vulnerability.

It can happen, however, that a commander who has ample time to arrive at a decision may desire the maximum number of items of information to check against one another relative to a given aspect of weakness on the part of the enemy. He may even order investigation in the direction of a particular element which could turn out to be an element of weakness. In this sense, and only in this sense, can an affirmative reply be given to the question posed.

In regard to the second question, one point would seem to be unequivocal: the responsibility of the intelligence unit must be limited to the presentation of a vulnerability without suggestion of how the advantage offered by this or that vulnerability could be exploited. The task of examining the possible exploitation of vulnerabilities must remain the responsibility of the commander or of his operational organization.

Therefore, the activity of the intelligence unit must be confined to pointing out, on the basis of the informational elements in its possession, the enemy's weak points, listing them, explaining why they can be regarded as weak points, analyzing and defining them.

In the catalogue of vulnerabilities there also must be included the vulnerabilities which could be exploited by the higher levels. For example, a division that is boxed in might be incapable of exploiting the incapacity of the enemy for replenishing his unit after suffering especially heavy losses in men and matériel, while this vulnerability could be exploited at a higher level.

One example will give more vividness to what has been said up to this point. The level of the units which will be considered was quite high, for although the intelligence procedures in investigation and evaluation of capabilities and vulnerabilities are quite similar at all levels, they are more striking at the strategic domain.

In the autumn of 1944, 70 Allied divisions were pressing at the gates of Germany over the 800 kilometres of front between the sea and the Vosges. The Allied offensive was aimed at crushing the German defenses of the Western Rampart in order to reach the Rhine and cross it at several points before the arrival of winter. There were clear signs in the German camp which indicated that collapse could be near at hand, and the Allies did not conceal their belief that the war in Europe could be over before Christmas.

The Allies had the four divisions of the VIII Army Corps manning around 140 kilometres of front which, due to its "quiet condition,"

was regarded both by the Americans and the Germans as ideal for the reconstitution of the divisions that already had been engaged and for familiarization of new units entering the fight.

On the east the Russians had not reached the Vistula, and were still far from the German soil, while the Allies were now at the gates of Germany. Once detected, this weak point in the Allied deployment called for exploitation by the German military logic. German doctrine assigned a temporary value only to the defensive form of war.

The German Intelligence Service had been able, in spite of the existing situation, to detect the Allied vulnerability represented by too extended a front. The German Command consequently had considered the possibility of taking maximum advantage of it.

The counter-offensive plan took form in an order emanating on 6 November 1944 from the command of Army Group B of Von Rundstedt to the commands of the Fifth and Sixth Armoured Armies and of the Seventh Army, comprising a total of 14 armoured divisions and 20 divisions of infantry. It was based on a single, fundamental element, *surprise*, for which the operation was prepared with a degree of secrecy, security, and deception, perhaps never before found in any other operation. Suffice it to say that even the commander of the German Sixth Armoured Army, constituted for the occasion and the real protagonist of the battle, was kept in the dark regarding its beginning until four days before the operation commenced. Only during the two days preceding the beginning of the operation was his army permitted to move to the position of departure.

In the Allied camp the danger represented by the Ardennes sector was well-known (the German offensive in this sector in 1940 was still fresh in memory), but this danger was looked on as a "calculated risk" in relation to the possibilities offered of the continuation, with all available forces, of the offensive in other sectors. In spite of the security measures taken by the Germans, many reports indicated the existence of new units in that sector, and many things pointed, especially after 1 December, to the preparation of a counter-attack in force. An example was the interception of an order given to certain air reconnaissance units of the Luftwaffe to reconnoitre the bridges over the Meuse.

In no estimate of the enemy's situation by those of the highest level down to those of the division level was the "possibility" considered of a grand style German counter-offensive. In no case was an acceptable degree of probability given to this course of action. Only in the case of the First Army, to which the VIII Army Corps belonged, is precise reference made to this possibility in the determination of the situation dated 10 December.

In the section relative to enemy possibilities, the commander of the intelligence unit wrote as follows:

1. The enemy can continue his defence of the line of the river Roer. . . .

2. The enemy, with tank and infantry units supported by aviation and special branches, can launch a counter-attack at a point of main effort and at a time chosen by him.

3. The enemy can defend the line

of the Erft and then withdraw back of the Rhine.

4. The enemy may become disorganized or surrender.

In determining, one after the other, the degree of probability of the listed possibilities, he declared that possibility 1 was the most probable; the 2d "to be expected when our forces have passed the river Roer. . . ." In his conclusions, however, he was more explicit: "The continuous increase of enemy forces west of the Rhine leads one to think seriously that the enemy may gamble everything on the counter-attack outlined in possibility 2."

Although this intelligence caused a certain degree of alarm in the Allied commands, it was not given, due to its quasiconcealed prophetic character, sufficient weight to cause counter-measures to be taken. On the other hand, in the determination of the enemy situation of 9 December by the Twelfth Army Group to which the First Army belonged, the estimate of the strength of the enemy forces in the Ardennes zone did not exceed six and a half divisions, as opposed to the seven German divisions which began the offensive and the other 14 which were progressively thrown into the battle, an indication of the success of the security measures taken by the Germans.

Postwar criticism has not been kind to the Allied intelligence organs in this particular contingency. They have been accused, principally, with having allowed themselves to be seized with "attack psychosis," thus losing the capacity for maintaining a constant objectivity of judgment, and of not having been able to carry out their investigations in depth.

Regardless of the results of the German counter-offensive, this much is known: the losses by the Americans were high, and the final Allied victory was delayed perhaps by several months.

Conclusion

For a commander, lack of information can no longer be an excuse, for it is his responsibility to direct the intelligence activity properly.

On the basis of this direction, it must be the definite responsibility of the intelligence unit to attempt, with every means at its command, to present to the commander not only all that it is possible to know concerning the enemy but all that will help in knowing about the enemy in the particular situation. To this end the new intelligence orientation, with which the effort is made to give equal value to the determination of capabilities and to the determination of vulnerabilities, appears logical. Today, in an atomic atmosphere, this seems still more necessary, considering the capabilities and the vulnerabilities of attack and defence as related to the effects which can be achieved with the atomic devices against concentrations of forces.

To succeed, however, in presenting the capabilities and the vulnerabilities of the enemy in a clear, understandable and *honest* manner requires arduous and patient labour, a sifting of results, supported in their evaluation by sure, critical sense.

China Opens a New Chapter

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China dominates the Orient. Its compact terrain is in the centre of an area extending from India to Honolulu and from Siberia to Australasia; its dense mass of population and resources overshadows the under-developed states of Asia and its Red Army looms over the whole area like a colossus. Because the Tibetan revolt and its suppression by Peking opens a new and dangerous chapter in Asian history, now is a suitable time for a review and re-appraisal of the "Yellow Peril".

Imperial Dynasty

By the early 19th century the imperial dynasty which ruled this rich and powerful land was already far decayed. Its overthrow, from the outside by the colonizing Western powers and from the inside by progressive Chinese dismayed at its cowardice and corruption, was only a matter of time. The Republican government which succeeded it in 1911 was unable to arrest the slide into anarchy and by the middle nineteen-twenties China had reached the nadir of its fortunes.

At this time the Russian revolution had not struck any answering note in China but Russian aid, encouragement, sympathy and equal treatment (whatever the long term motives) made a favourable impression on influential Chinese. Thus, the re-organized Koumintang (or Nationalist party) accepted the aid of Russia and the alliance of the infant Chinese Communist party, which had been founded in China in 1921 and almost simultaneously in Paris by some Chinese students there. Mao Tse-tung a library assistant in Peking and, in Paris, Chou En-lai.

Chiang Kai-shek

By 1928 the Koumintang armies under General Chiang Kai-shek had brought almost all the country under the control of the central government. The general had been sent for advanced training to Moscow and on his return had created and commanded the military college at Whampoa. (From this college have come not only the leading generals of the Nationalist armies but also their rivals and victors, the leading Communist generals.) When complete success for Chiang seemed to be in sight a part of the 4th Army, one of the best fighting units, mutinied under its Communist officers and after an unsuccessful attempt to oppose the Nationalists in normal warfare, took to the hills where it was eventually joined by such of the Communist leaders, including Mao Tse-tung, as had managed to escape Nationalist vengeance.

The many vicissitudes of the Communists from then until their triumph in 1949 have become part of Chinese legend and folklore and do not concern this article. What is important is Mao Tse-tung's success, firstly, in adapting the rigid Marxian theory to a system which was likely to succeed in China and, secondly, in formulating a theory and practice of guerilla warfare which has since become a successful blueprint for revolutionary "freedom fighters" throughout the world.

Revolutionary War

Generally, in modern war the civilian population does not constitute the main, and certainly not the first object of attention. It is usually thought necessary to deal with the enemy's armed forces and his war-making potential before the population, as such, can be subjected to direct pressure.

In revolutionary war this order is reversed. Revolutionary war had as its aim the take-over of power in the state. It is internal conquest, made possible through the active help of a population that the insurgents have physically and morally conquered. Military power plays a secondary role in such a contest; the decisive factor is the population which is both the strongest force in the struggle as well as its primary object. Marshal Chu-Teh summed this doctrine up as "The people are the sea, we are the fish; as long as we can swim in that sea we shall survive".

The conquest of the population is, therefore, the indispensable opening of insurrectional war. Once this has been achieved, once the population has been schooled and organized for revolutionary purposes, it becomes possible to go on to a second stage — open warfare — under conditions which are unfavourable to the enemy even though his military forces may be larger and, according to traditional standards, better trained and equipped than those of the insurgents. The unusually close connection and interdependence of military, political and psychological means constitute an outstanding characteristic of this type of war which in recent years has generally proved superior to the orthodox methods opposing it.

It was not only the Western democracies who did not realize the scale and significance of this doctrine. After the war in Europe was over it is said that Stalin sent Mao Tse-tung a Russian book on partisan warfare, the fruit of Russian experience during the German invasion. Mao showed it to Lin Piao, his best commander and the greatest expert on guerrilla warfare in China, who having read it remarked, *"If we had had this as our textbook we would have been annihilated ten years ago"*.

New Régime's Aim

The Chinese Communists were not annihilated. They conquered the population to such good effect that within two years of their triumph in 1949 the whole of China was under a stronger and more centralized government than ever before. Their aim was to give China an industrial and technological society so powerful as to assure for it the hegemony of Asia. To do this, and at the same time keep China's enormous population from starving, required a huge increase in both consumer and capital goods. Such an increase, of course, is the traditional problem of underdeveloped countries and its solution usually envisages massive injections into the economy of money and "know how" by some outside agency.

Apart from a modicum of Russian aid no such Santa Claus was available to China. Of the traditional factors of production, land, capital and, to a lesser extent, enterprise, they were in inelastic supply.

Labour alone was susceptible to increase and this factor China pushed to the limit. Men, women and children were everywhere sub-

stituted for capital equipment until they literally got in each other's way. Low wages and military-type organization ensured that the system worked, and production in China rose. What is more, throughout Asia it was seen to rise, particularly in those countries where the best capitalist efforts did not give an equally good result.

Armed Forces

What of the cutting edge of China's power, the armed forces? When the civil war ended the Red Army comprised three or four million men. There was practically no navy or air force. With the intervention in Korea the army exchanged its successful guerilla tactics for training in sustained positional warfare and was equipped with automatic weapons and A.F.V.'s on a large scale. A vigorous recruiting campaign, especially for new officers, was also conducted and the air force was rapidly expanded using Soviet jet aircraft.

In keeping with tradition the navy lagged behind but was reportedly equipped with Russian submarines.

After Korea drastic re-organization took place. The army was reduced in size from about five million to its present strength and conscription was introduced on a regular basis with an annual intake of 450,000 men. Officers were given standard ranks and uniforms. The country was divided into military districts on the Soviet pattern; separate artillery and airborne units were set up. Russian help was given to build up an armaments and aircraft industry and, in August 1958, Russia supplied China with atomic bombs.

Current Strengths

Best current estimates place the land army as between 2½ and 3 million men, the air force has some 2,000 to 3,000 aircraft and the navy—still lagging—about 300 warships. These figures are not accurate and give little reliable idea of the strength of the Chinese forces. Their real strength is to be found in the integration—born of Communist guerilla days—of the army and the people. Everyone is both soldier and civilian. The Chinese army is still committed to the concept of numbers over that of strategy and armaments, just as the Chinese economy is committed to labour over enterprise and capital. Fortunately for the West the type of war which a Chinese army so organized is likely to win is becoming increasingly anachronistic.

Revolt Unlikely

In summing up it is possible to list Communist China's advantages and disadvantages as of now. Politically the balance is favourable. The Chinese people have never known true democracy and informed observers consider that despite the incredible hardships they are at present suffering in the cause of economic advancement, a major internal revolt is unlikely.

Economically, in spite of its tremendous efforts in raising itself by its bootstraps, most of China is still only emerging from the wheelbarrow age. The economy is in no position to support a major war effort in the near future and even a limited war could cause tremendous economic strains and set-backs.

Militarily, the Chinese Red Army is best equipped to fight a limited conventional war on the lines of

Korea, or a semi-guerilla operation on the classic Communist model as in Viet Nam. The former is largely ruled out now by tactical atomic weapons while an increasing awareness among China's neighbours of the realities of Communism makes the latter less and less of a possibility, especially if these neighbours can call on the West for aid. The Chinese certainly do not possess the air and naval strength necessary to menace the Pacific island chain or the Continental U.S. itself. However, the Chinese leaders dispose of one great asset. They are not deterred by the "great deterrent". They calculate that in a nuclear attack, of the 650 million or so Chinese peasants scattered over 3,000 square miles of territory, 100 million more or less would survive to inherit the earth. This gives Chinese foreign policy a certain hardness and quality of "brinkmanship" which the West—and Russia—find difficult to match.

Conclusion

Finally, it should be admitted that an attempt to reach conclusions on China is to aim at a swiftly moving target. Very little was known about what went on inside Russia until *Sputnik I* went into orbit. Even less is known about what is going on inside China but it is impossible to shut one's eyes to the existence of the largest, hardiest, most fertile, and potentially most productive, nation on earth. The unchanging East is so no longer.

R.A.H.

Today It's Large Weapons, Small Units

Successful offensive action by division, corps, and army against an enemy strong in nuclear weapons is accomplished by the co-ordinated action of dispersed, highly mobile small task forces, not larger than battle group size, to produce situations which fire-power can be applied with decisive results. The density of the ground manoeuvre element generally is geared to the enemy's nuclear capability. The threat of nuclear weapons precludes troop densities even approaching previous scales. Fortunately, this same restriction applies equally to the enemy.

While larger units (corps and army) still may effect a manoeuvre of large bodies of troops, the manner of making the movement is changed vastly. It must be recognized that divisions no longer can be moved simultaneously in set patterns or converged as such. It should be evident today that troop concentrations in a nuclear war have a definite, positive limitation.

The powerful new fire-power available to divisions, corps, and army has increased the offensive capability of these units. However, it must be recognized that the nature of the offensive at the higher echelons has changed. In brief, yesterday it was small weapons and large units—today it is large weapons and small units.—*Lt.-Col. A. B. Lathrop in the June 1959 issue, "Military Review" (U.S.).*

Leadership in Management

FIELD MARSHALL SIR WILLIAM SLIM IN THE NOVEMBER 1957 ISSUE OF THE *Australian Army Journal**

The problems encountered at the top of any great organization, whether military or civilian, are basically the same — organization, tranportation, equipment, resources, the selection of men for jobs, the use of experts, and, above all and through all, human relations. While the problems are much alike, there are certain differences between the military and the civilian approach to them and the climates in which they have to be solved.

In the army we do not talk of "management," but of "leadership." There is a difference between leadership and management. The leader and the men who follow him represent one of the oldest, most natural, and most effective of all human relationships. The manager and those he manages are a later product with neither so romantic nor so inspiring a history. Leadership is of the spirit, compounded of personality and vision—its practice is an art. Management is of the mind, more a matter of accurate calculation, statistics, methods, timetables, and routine—its practice is a science. Managers are necessary; leaders are essential.

A good system will produce efficient managers but more than that is needed. We must find managers who are not only skilled organizers, but inspired and inspiring leaders, destined eventually to fill the highest ranks of control and direction. Such men will gather closely knit teams of subordinates like themselves and technical experts whose efficiency, enthusiasm, and loyalty will be unbeatable. This is increasingly recognized and the search for leadership is on.

What should we look for? Where are we likely to find it? When we have found it, how shall we develop and use it? Can the experience of the army be any help?

Some Differences

In this matter of leadership the fighting services have, of course, certain very marked advantages over civil life which are that:

1. The principle of personal leadership is traditional and accepted.

2. There exists a strict legal code for the enforcement of obedience to lawful direction.

3. Officers and men recognize that they are on the same side, fighting together against a common enemy.

4. Commanders do not, in war at any rate, have to pay so much regard to the financial effects of their action.

A business man might say, "If we had all that, management would indeed be simple!" Lest you think military management is too easy, I would remind you that:

1. Personal leadership exists only as long as the officers demonstrate it by superior courage, wider knowledge, quicker initiative, and a greater readiness to accept responsibility than those they lead.

2. Military command is not just a matter of bawling orders that will be obeyed for fear of punishment. Any commander's success comes more from being trusted than from

**This digest is reprinted from the December 1958 issue of the* Military Review *(U.S.).—Editor.*

being feared—from leading rather than driving.

3. Officers and men feel themselves on the same side only as long as the officers show integrity and unselfishness in all their dealings, and place the well-being of their men before their own.

4. In war the general may not be haunted by finance, but his is the responsibility for good management and economy in matters more important than money — his men's lives.

These things, not stars and crowns or the director's limousine, are the badges of leadership anywhere.

Army Leaders

When we ask of leaders in the army what kind of men do we picture? Not the explosive old generals of the comic strips, whose complexions are indicative of blood pressure and of the consumption of port—both high, whose conversation is limited to reminiscences of Poona and of blood-sports, and whose only solution to any political or social problem is "Damn it, sir, shoot 'em." If those generals ever existed in real life they were well on the way out before I joined the army.

No, the first things we require in a leader are character and an alert mind. Of course, it will be a military mind. Every profession produces its own type of mind which shows itself in its trained approach to any given question. A scientist for instance, if you ask him something, will probably answer:

I cannot tell you now. Come back in six months when the experiments I am engaged in will, I hope, be completed and I shall have compared my results with those of other research workers in the same field. Then I may be able to tell you.

If you ask an engineer what type of bridge should be put across a river, his answer will be, "Before I can give an indication I must have exact information. What is the width of the river, its depth, its flow? What are its banks like, its bottom, what is the highest recorded flood? Is the site accessible; is labour available? What is the climate? How much traffic will the bridge be expected to carry in the future?"

But the general cannot answer like that. He knows the information he has is far from complete; that some of it is bound to be inaccurate. He is only too well aware that there are all kinds of factors over which he has no control—the enemy, the weather, and a dozen others. Yet he must say promptly, clearly, and with every appearance of complete confidence, "We will do this."

Other professions are trained quite rightly not to reply until they have the exact and correct answer, some to give an answer made up of alternatives or possibilities. The military mind has to provide not necessarily the perfect answer but, considering what is known of the situation, one that will work. That given, the commander has to back his judgment, face the risks, force his plan through, and stand or fall by the result. It seems to me that wouldn't be a bad kind of mind to initiate and carry through enterprises in other fields—possibly even in those of commerce and industry.

Leadership

Leadership is the projection of personality. It is that combination of persuasion, compulsion, and example that makes other people do what you want them to do. If leadership is this projection of personality then the first requirement is a

personality to project. The personality of a successful leader is a blend of many qualities—courage, will-power, knowledge, judgment, and flexibility of mind.

Courage is the basis of all leadership, indeed of all virtue in man or beast. It is no less in the higher than in the lower levels of command, but the greater the responsibility the more the emphasis shifts from physical to moral courage—a much rarer quality, but essential to higher leadership.

Will-power is the most obvious requirement in a leader's make-up. Without it no man can remain a leader, for he will have to force through his purpose, not only against the enemy but against the weariness of his troops, the advice of his experts, the doubts of his staff, the waverings of politicians, and the inclinations of his allies. These obstacles no doubt are duplicated in industry; will-power is as needed in the board room as in the council of war.

The main task of a leader is to make decisions, but if he does not have the judgment to make the right decisions, then the greater his strength of will and the higher his courage, the more tragic will be his mistakes. When looking for your leader make sure of his courage and his will-power, but, above all, see that he has judgment—that he is balanced.

I said he must have knowledge. A man has no right to set himself up as a leader—or to be set up as a leader—unless he knows more than those he is to lead. In a small unit —a platoon or a workshop gang— the leader should be able to do the job of any man in the outfit better than he can. That is a standard that should be required from all junior leaders.

As the leader rises higher in the scale he can no longer, of course, be expected to show such mastery of the detail of all the activities under him. A divisional commander need not know how to coax a radio set, drive a tank, preach a sermon, or take out an appendix as well as the people in his division who are trained to do those things. But he has got to know how long these jobs should take, what their difficulties are, what they need in training and equipment, and the strain they entail.

As the leader moves toward the top of the ladder, he must be able to judge between experts and technicians, and to use their advice although he will not need their knowledge. One kind of knowledge that he must always keep in his own hands—is that of men.

"Flexibility of mind" is becoming more and more important to leadership. The world, in material and scientific matters, is advancing much more rapidly than most men can keep up with. A leader is surrounded by new and changing factors. What it was wise to do yesterday may well be foolish today. Some invention, some new process, some political change may have come along overnight and the leader must adjust himself and his organization to it speedily. The only living organisms that survive are those that adapt themselves to change. There is always the danger that determination becomes only obstinacy; flexibility, mere vacillation. Every man must work out the balance between them for himself; until he has he is no real leader.

If a man has all these qualities—courage—courage, will-power, judg-

ment, knowledge, and flexibility of mind—he cannot fail to be a leader in whatever walk of life he is engaged. Yet he is still not the leader we seek; he lacks one last quality—integrity. Integrity should not be so much a quality of itself as the element in which all the others live and are active, as fishes exist and move in water.

Integrity

Integrity is a combination of the old Christian virtues of honesty and unselfishness—thinking of the people we lead, before ourselves. Moral reasons, strangely enough, are the ones that both in war and commerce tell most in the long run. Apart from its spiritual aspect, this attitude—and there need be nothing soft or sloppy about it—has a practical material value. The real test of leadership is not whether your men will follow you in success, but whether they will stick by you in defeat and hardship. They won't do that unless they believe you to be honest and to have care for them.

I once had under me a battalion that had not done well in a fight. I went to see why. I found the men in the jungle, tired, hungry, dirty, jumpy, some of them wounded, sitting miserably about doing nothing. I looked for the commanding officer —for any officer; none was to be seen. Then as I rounded a bush, I realized why that battalion had failed. Collected under a tree were the officers, having a meal while the men went hungry.

Those officers had forgotten the tradition of the service that—they look after their men's wants before their own. I was compelled to remind them. I hope they never again forgot the integrity and unselfishness that always permeate good leadership. I have never known men fail to respond to these.

Finding Leaders

So much for the type of man we want as a leader. How, in a big organization are we to find him?

In the army we believe it is vitally important to recognize the potential leader at an early stage of his career. Then, while cultivating the natural root of leadership in him, we graft on to its growth the techniques of management. That is, we attempt to uncover the natural leaders in our own ranks—to attract them from outside as well—and then give them the chance to get out in front and lead.

I think we have done this more deliberately, more systematically, and more constantly in the army for the last 40 years than has been done in industry.

From the day he joins, a recruit is scanned constantly for signs of potential leadership. Within a few weeks, if his alertness, intelligence, education, and general character justify it, he finds himself in either the potential officers' or potential non-commissioned officers' squad. When he joins his unit, watched for leadership all the time, he may be recommended for a commission.

A selection board tests him, and, if he satisfies their requirements, he moves on either to an officers' training school for a National Service commission or a cadet college for a Regular one. Over that hurdle, the young officer joins his unit where, for some time in decent obscurity, he learns the nuts and bolts of his trade, and, equally important, gains his first real experience of leadership.

Our aim is to extract the potential officer at the start of his career and

begin his grooming for leadership as soon as possible To be too long in the ranks is not good for him—the sooner he enters junior management the better. Responsibility breeds responsibility—the best training for leadership is leadership.

Schools, where the use of weapons and tactics are taught and staff colleges which study not only the techniques of staff work, but the principles and practice of command leadership, all help to turn the young officer into a leader. In this the annual confidential reports submitted on every officer help a great deal. A study of his reports over a period of years will give a very fair ideal of an officer's character, capabilities, and what kind of post he will fill best. Eventually he may be placed on the select list of officers, whose careers are planned some years ahead to give them the kind of experience they will need to be fitted for high command. Such officers are well up in management and the very highest appointments are coming within their reach.

Of course, the pyramid narrows rapidlly toward the top, and on the climb there many are dropped out. But by starting in management early, being watched all the time and given varied experience, the best men do get to the top. One of the most difficult but nonetheless important things about estimating a man's capacity is to be able to recognize his ceiling—the point beyond which he will be tested too highly.

Keeping in Touch

In have talked so far about those destined for the higher appointments, but the army in which the only leaders are the generals will win no victories. All down the line there must be leaders. We have the equivalent of the supervisors and foremen of industry; they are our warrant and noncommissioned officers. You will note we call them officers. They are very definitely a part of the management. They feel that they are, and are recognized by others as such. It has seemed to me that the position of the equivalent ranks in industry, suspended as they often are between management and workers, must be terribly difficult. I have sometimes thought the American system where they are made to feel much more a part of management has advantages.

The greater the size of an army or any other organization, the more difficult it becomes for the leaders to make their ideas and intentions clear and vivid to all their thousands of subordinates. All kinds of ways of doing this have been attempted. There has even grown up in industry a special class of officer whose job roughly is to keep touch between management and work. I think there is some danger they may interpose rather than correct. Leadership is a very personal thing — like some germs it is weakened by passing through other bodies.

In my experience there are many things that can be done to keep touch, but if they are to be effective they must all be based on two things:

1. The headman of the army, the firm, the division, the department, the regiment, and the workshop must be known as an actual person to all under him.

2. The soldier or the employee must be made to feel he is part of the show and what he is and what he does matters to it.

The best way to get known to your men is to let them see you and hear you by going among them and

talking to them. The headman should be able to walk on to any parade ground in his command or into any factory in his firm and be recognized—even if it is only "Here comes the old so-and-so." It is surprising how soldiers and workmen can use an uncomplimentary expression as an endearment.

The boss should talk to individuals as he moves about and occasionally—only occasionally, as it should be something of an event—assemble his staff and workers, mixed together for preference, and tell them something of what he is trying to do. It's not more difficult to talk to a meeting of employees than to one of shareholders—and I believe it is worth more. To talk to men like that does not require great eloquence. Only two things are needed—to know what you are talking about and to believe it yourself. That last is important.

To make anyone feel part of a show you have to take them into your confidence. We soldiers have long grown out of the "theirs not to reason why" stage. Any intelligent man wants to know why he is doing things and what for. It is not a bad idea to tell him—let him look a bit further along the chain of which he is a link.

A good system which passes on to every man information of what is going on outside his immediate view is worth more than such things as joint consultations, which really only reach a few. Security may enter into this as it does in military matters, but a little risk with security is more than repaid by the feeling chaps get that their leaders have confidence in them, that they are let into the know, and that they belong.

Conclusion

From washing machines to electronic brains we live increasingly by technology. Technicians are vital to our industry. However, we do not make a man a general in the field because he is an expert in explosives; the most brilliant surgeon is not necessarily the best man to run a great hospital; nor the best selling author to run a publishing business. The technically trained man is not the answer to the management problem.

The only way in which the growing need for leadership in management can be met is to find the potential leader and then start his training and give him his chance to lead.

Industry never has to ask men to do the stark things demanded of soldiers, but the men employed are the same men. Instead of rifles they handle tools—instead of guns they serve machines. They have changed their khaki and jungle-green for workshop overalls and civilian suits. But they are the same men and they will respond to leadership of the right kind as they have always done.

If management is infused with leadership these men will show their mettle in the workshop as they have on the battlefield. Like me, they would rather be led than managed. Wouldn't you?

IMPROVED READING

CAPTAIN N. F. CLARKE, AUSTRALIAN ARMY EDUCATION CORPS, IN THE JULY 1959 ISSUE OF THE AUSTRALIAN ARMY JOURNAL.

According to the last edition of the *Year Book of the Commonwealth of Australia*, about 186,000 tons of wood pulp was converted to paper in Australia, the bulk of which will pass through a printing press. The finished product will be read in the form of newspapers, books, journals or jam-tin labels. While much of this vast flood of printed material is dedicated to the murder of time, there will be an imposing volume of instructive matter positively valuable to the engineer, the chemist, the soldier, the scientist or the farmer who wishes to keep pace with the advance of knowledge in his particular field. Instructive literature will not only engage his interest as a specialist but as a citizen enjoying the decent living of democracy for, if he is to retain his identity as a free individual, he must read widely to evalute the economic, social and political issues hammering upon his mind through eye and ear by a multiplicity of media: issues which may seriously threaten the democratic ideal. Knowledge is endless: life is brief.

Professor F. J. Schonell states: "Few people could challenge the statement that reading is the most important subject in the curriculum of the elementary school; success in this subject conditions, to a large extent, progress in most other subjects and, as recent studies show, influences the whole attitude of the pupil towards school life". But learning to read also influences the future habits of the reader. The fact that university students need to be taught to read is startling. That most of us are reading cripples has recently received a good deal of publicity in the popular press for the simple reason that, in Australia, the idea is rather novel. In Melbourne, at any rate, commercial interests have not been slow to cash in on it. Reading clinics have been set up and business executives and students are being urged to attend courses in their professional interests. They are doing so, and some spectacular claims have been made in respect of their improvement.

Consequent upon the reading improvement programme carried out at the United States Air Force Air University Command, the Royal Australian Air Force inaugurated the Staff College Reading Clinic in June. On 24th November, 1958, the Army commenced a Reading Improvement Pilot Course at Army Headquarters, based initially upon the technique developed at Point Cook. Realizing that there is often a good deal of loose thinking and exaggerated press publicity about innovations generally, this course was an experiment, the aim of which was to assess the objective realities of the claims made for this technique, by testing the efficiency of the apparatus and methods used in reading improvement training. It was soon felt that, in order to make the course more meaningful, greater emphasis should be placed on comprehension so, instead of giving a test every fourth period, it was decided to administer a test each period. Moreover, it was considered

(Continued on page 114)

BATTLE HONOURS AWARDED

Supplements to Canadian Army Orders issued at Army Headquarters, Ottawa, contain lists of Battle Honours awarded to the undermentioned regiments by Command of Her Majesty the Queen. The Battle Honours which have been selected to be borne on Colours or Appointments are printed in heavy type. Further lists will be published as they are promulgated. Those listed below appear in the order of date of promulgation.—Editor.

THE KING'S OWN CALGARY REGIMENT (RCAC)

The Second World War

"Dieppe", "Sicily, 1943", "Motta Montecorvino", "San Leonardo", "The Gully", "Cassino II", "Gustav Line", "Pignataro", "Liri Valley", "Aquino", "Trasimene Line", "Arezzo", "Advance to Florence", "Cerrone", "Italy, 1943-1945", "North - West Europe, 1942, 1945".

THE IRISH REGIMENT OF CANADA

The Second World War

"Liri Valley", "Melfa Crossing", "Gothic Line", "Montecchio", "Coriano", "Lamone Crossing", "Fosso Munio", "Conventello - Comacchio", "Italy, 1943 - 1945", "Ijsselmeer", "Delfzijl Pocket", "North-West Europe, 1945".

THE CANADIAN SCOTTISH REGIMENT (PRINCESS MARY'S)

The Second World War

"Normandy Landing", "Putot-en-Bessin", "Caen", "The Orne", "Falaise", "The Laison", "Calais, 1944", "The Scheldt", "Leopold Canal", "Breskens Pocket", "The Rhineland", "Waal Flats", "Moyland Wood" "The Rhine", "Emmerich-Hoch Elten", "Deventer", "North-West Europe, 1944-1945".

FIRST CANADIAN ARMOURED PERSONNEL CARRIER REGIMENT (Disbanded)

The Second World War

"Le Havre", "Boulogne, 1944", "The Lower Maas", "The Roer", "The Rhineland", "The Reichswald", "Cleve", "Moyland Wood", "Coch-Calcar Road", "The Hochwald", "Xanten", "The Rhine", "Croningen", "North-West Europe, 1944-1945".

Nothing in War is Fixed

The only way to prevent ossification of mind is to accept nothing as fixed, to realize that the circumstances of war are ever-changing, and that consequently organization, administration, strategy and tactics must change also . . . Adherence to dogmas has destroyed more armies and lost more battles and lives than any other cause in war—*Maj.-Gen. J.F.C. Fuller.*

CANADIAN ARMY ORDERS

Listed below is a resume of Canadian Army Orders for the information of military personnel. Details of these orders are available in all Army units.—Editor.

CAO 13-2

Honorary Aides-de-Camp to the Governor General of Canada and to the Lieutenant-Governors of Provinces
(Issued: 7 Sep 59)

This revision clarifies who will be appointed Honorary Aide-de-Camp to the Governor General and authority to appoint Honorary Aides-de-Camp to Lieutenant-Governors of provinces has been delegated to officers commanding commands.

CAO 20-1

Regular Officer Training Plan
(Issued: 10 Aug 59)

This revision reflects changes in policy in the Regular Officer Training Plan, which were previously notified by other media, and provides that allocation to corps will no longer be based solely upon the choice of the officer cadet, and that transfer from ROTP to OCP is now permitted under certain conditions.

CAO 51-10

Civil Employment— Service Personnel
(Issued: 21 Sep 59)

This new order amplifies QR (Army) 19.42 "Civil Employment", and specifies some types of civilian employments and undertakings that will not be entered into by officers and men on full-time service.

CAO 63-2

Boards of Inquiry and Summary Investigations— General Instructions
(Issued: 21 Sep 59)

This revision brings the order into line with the new Chapter 21 of QR(Army). It expands the order to include summary investigations, reference to offences before a board of inquiry, and provides for the distribution of minutes upon request.

CAO 64-2

The Canadian Army Badge
(Issued: 27 Jul 59)

This amendment provides for the use of the Canadian Army Badge design for official purposes by the Canadian Army as a whole with the sword blades shown in blue when the design is shown in colour, and the sword blades shaded on the right hand edges when the design is shown in black and white.

CAO 77-3

Designation of Service Prisons and Detention Barracks
(Issued: 24 Aug 59)

This new order notifies the places designated by the Minister as service prisons and service detention barracks.

CAO 83-13

Service, Pay and Medical Record Book—CAB 2
(Issued: 24 Aug 59)

This revision provides that the service books will be held and maintained by the unit for issue to the individual when proceeding on posting, on course or on leave.

CAO 93-9

Terminology Connected with Maintenance of Electrical and Mechanical Equipment
(Issued: 7 Sep 59)

This revision defines terms "servicing" and "repair" as they pertain to the maintenance of electrical and mechanical equipment used in the Canadian Army.

CAO 174-42

Medical Care—Civilians in Army Medical Establishments
(Issued: 27 Jul 59)

This revision notifies that the regulations relating to the medical care of civilians made by Order-in-Council PC 1954-2065 of 31 Dec 54 have been revoked and replaced by Order-in-Council PC 1958-1525 of 5 Nov 58. It defines the frequency of deposits to the Receiver General Transfer Account for all revenues received from medical services, and specifies the rates to be chargd civilians who are provided with service ambulances or similar transportation.

CAO 201-17

Holding of Spare Parts and Control of Stock Levels—Division of Responsibility RCOC—RCEME
(Issued: 24 Aug 59)

This revision combines in one document the policy on the control of stock levels and the policy on holdings of spare parts now contained in QMG Instruction 58/3.

CAO 212-12

Separated Family's Allowance
(Issued: 21 Sep 59)

This amendment implements the policy authorized by amendments to QR(Army) 205.24 and the Orders in Council governing the payment of separated family's allowance which provide with effect 1 July 59 an entitlement to separated family's allowance for an other rank who is not in receipt of marriage allowance because he is not of the required age.

CAO 212-14

Outfit Allowance—Officers and Warrant Officers, Class 1—Active Force
(Issued: 24 Aug 59)

This amendment incorporates the increase in Outfit Allowances for officers from $375.00 to $450.00 effective 10 Oct 58.

CAO 218-5
Use of Registered Mail
(Issued: 19 Oct. 59)

This new order regulates the use of registered mail for transmission of documents by the Army.

CAO 219-20

Powers—Designation as Commanding Officer
(Issued: 5 Oct 59)

This revision includes an authorization from the CGS to officers having the powers of a GOC or Area Commander to designate officers as commanding officers.

CAO 255-1

Security of Information
(Issued: 21 Sep 59)

This amendment provides that, where a large volume of material is concerned, the security classification may be typed in special block capitals. Where a small volume is concerned the security classification will be stamped in letters larger than the block capitals of the typewriter, preferably in a contrasting colour.

CAO 271-1
Movement of Dependents, Furniture and Effects
(Issued: 24 Aug 59)

This amendment provides for administrative control on the movement of a male child over the age of twenty-one years in the circumstances specified in QR (Army) 209.81(3) (b), and outlines the entitlements governing the movement of dependents, furniture and effects for which Ministerial authority is required, with the procedure for obtaining that authority. In addition, entitlements for members of the Reserves on Continuous Army Duty to move dependents, furniture and effects have now been brought into line with those of members of the Canadian Army (Regular).

CAO 286-3
Vehicles — Issue of Tires
(Issued: 19 Oct 59)

This amendment permits vehicles used on NWHS to be equipped with two spare wheel and tire assemblies, and notifies revised restrictions on the use of recapped tires on army vehicles.

AGI 59/4
Non-Public Property Movement and Storage
(Issued: 8 Jul 59)

This instruction outlines the existing policy concerning the movement/storage of non-public property at public expense.

Invisible Tanks

What kind of a tank does the Army need for its future battlefield operations?

The answer was given by General Bruce C. Clarke, Commander of the (U.S.) Continental Army Command, before the Second Annual Industry Missile and Space Conference in Detroit.

For tanks, General Clarke said, "our requirements are simple. We want a fast, highly mobile, fully armoured, lightweight vehicle. It must be able to swim, cross any terrain, and climb 30-degree hills. It must be air transportable. It must have a simple but powerful engine, requiring little or no maintenance. The operating range should be several hundred miles."

And, said General Clarke, "We would also like it to be invisible."— *From the "Army-Navy-Air Force Journal" (U.S.).*

THE ROYAL REGIMENT OF CANADIAN ARTILLERY

Canadian Army Photograph

As his first official act in office, His Excellency Major-General Georges P. Vanier, DSO, MC, CD, Governor General of Canada, passes the Artillery Memorial unveiled by him on 21 September in Major's Hill Park, Ottawa. He is accompanied by Brigadier P. A. S. Todd, CBE, DSO, ED, CD, Honorary Colonel Commandant of the Royal Regiment of Canadian Artillery.

Governor General Officiates

Artillery Memorial Unveiled

Gunners of all ranks joined with civilian dignitaries in Major's Hill Park, Ottawa, on the afternoon of 21 September last to pay tribute to the men of the Royal Regiment of Canadian Artillery who gave their lives in the service of Canada.

The occasion was the unveiling of the National Artillery Memorial by His Excellency Major-General Georges P. Vanier, DSO, MC, CD, Governor General of Canada.

Those attending the solemn ceremony included gunners now serving with the Regular Army and the Militia, and former members of The Regiment. Together with civilian leaders from many walks of life, they came from many parts of the world — Canada, the Commonwealth and foreign countries.

Two Lieutenant Governors, both former artillerymen, were present. They were Lieutenant-Colonel the Honourable J. Keiller MacKay, DSO, VD, QC, of Ontario and Major-General the Honourable Edward Chester Plow, CBE, DSO, CD, of Nova Scotia.

Members of the Cabinet and Parliament who served with the artillery were present, together with the general public who had been invited to attend the ceremony, during which His Excellency the Governor General inspected a Guard of Honour from the 4th Regiment, Royal Canadian Horse Artillery, Camp Petawawa.

Guns of the 30th Field Regiment (M), RCA, fired the Royal Salute on the arrival and departure of His Excellency, and salvoes while wreaths were laid at the base of the Memorial. The band of the Royal Canadian Horse Artillery played "The Regimental Slow March" immediately after the laying of wreaths, and marched off to "The British Grenadiers".

Official wreaths were laid by the following:

On behalf of the Armed Forces by His Excellency the Governor General, Commander-in-Chief.

On behalf of the People of Canada by the Prime Minister's representative, the Honourable George R. Pearkes, VC, PC, CB, DSO, MC, MP, Minister of National Defence.

On behalf of The Regiment by Brigadier P. A. S. Todd, CBE, DSO, ED, CD, Honorary Colonel Commandant.

On behalf of the Canadian Army by Lieutenant-General S. F. Clark, CBE, CD, Chief of the General Staff.

On behalf of the mothers and widows by Mrs. Alexander Haggerty, Fruitland, Ont., who lost two gunner sons during the Second World War.

On behalf of the Royal Regiment of Canadian Artillery (Regular) by Colonel H. W. Sterne, DSO, MBE, CD, Director of Artillery.

On behalf of the Royal Regiment of Canadian Artillery (Militia) by Brigadier R. T. Du Moulin, ED, CD, President of the Royal Canadian Artillery Association.

On behalf of the Artillery Veterans by General the Honourable A.

A description of the Memorial appeared in the April 1959 issue of the Journal.—Editor.

G. L. McNaughton, CH, CB, CMG, DSO, CD.

On behalf of the Royal Regiment of Artillery by Lieutenant-Colonel R. C. Laughton, OBE, RA.

The address delivered by His Excellency the Governor General at the ceremony follows:

Today we are gathered on the site of this Memorial to honour the memory of Canadian gunners who made the supreme sacrifice. Men of many races, creeds and colours, from the forests and plains, from the countryside and the mountains, but all united in one family—"the gunners", men proud to serve their country in its hour of need, men willing to lay down their lives in its defence.

"Ubique Quo Fas Et Gloria Ducunt". How well this inscription on its Arms and Badge describes the Royal Regiment of Canadian Artillery. It is fitting, for the guns and those gallant men who manned them

Canadian Army Photograph

His Excellency Major-General Vanier is accompanied by Captain G. N. R. Olson, Guard Commander, on an inspection of a Guard of Honour from the 4th Regiment, RCHA, Camp Petawawa, prior to the unveiling of the National Artillery Memorial.

have protected their country and their homes "Everywhere Whither Right and Glory Lead".

The sound of guns first echoed through Canadian forests as early as 1636 when settlers in Quebec readied themselves for defence against Indian attack. Indeed, there is one artillery unit now existing which traces its lineage back to 1793. The War of 1812-1814 saw Canadian militia gunners fighting in the defence of their country. For some 200 years before the coming into existence, in 1855, of the authorized Volunteer Militia and the Regiment as we now know it, Canadian gunners have fought and died for their country. All this, long before Confederation became a reality, was only the beginning of the great regiment in which those whom we honour today served with such devotion and distinction.

Since 1855 further great events have occurred. The year 1871 saw the organization of Regular Army Batteries. In 1873, volunteers from these batteries were transferred to the newly-organized North-West Mounted Police, now the justly famed Royal Canadian Mounted Police. Gunners are proud that the first Commissioner of the Force was previously the Officer Commanding "A" Battery, Canadian Artillery, and that NCOs and men of "A" and "B" Batteries were among its first members.

The Canadian Artillery saw action in the North-West Campaign of 1885: in 1899 three batteries were sent to fight in the South African War.

In the First World War, the gunners suffered almost 10,000 casualties, of which over 2000 were fatal. What deeds of sacrifice and valour are recalled with the names of Ypres, the Somme, Passchendaele, Cambrai, Mons and Vimy Ridge. Let us not forget the gallant men who fought in 1919 in far-off North Russia and Siberia.

In the Second World War once more the gunners distinguished themselves—in Sicily, Italy, France, Belgium, Holland and Germany. Again they suffered grievous losses —over 5000 casualties of whom more than 1500 lost their lives. Finally there was the campaign in Korea where the gunners once more played a noble part.

(Nombreux sont les Canadiens de langue fran çaise qui ont combattu auv côtés de leurs frères artilleurs de langue anglaise, et nombreaux sont ceux des deux races qui sont morts ensemble pour un idéal commun qu'ils partageaient avant même de l'avoir traduit dans la langue de l'autre. L'unité du Canada doit se faire dans le sacrifice librement accepté des Canadiens de toutes origines, au service de la patrie.)

Ubique—how true the word, the gunners have fought everywhere. And so we come today from all parts of Canada, from the Commonwealth and from foreign countries to pay tribute to those members of the Royal Regiment of Canadian Artillery who gave up their lives that we might live in freedom.

Let us remember them by ensuring that their ideals are not forgotten.

Let us honour them by devoted service to our country.

Let us humbly and reverently thank them in our hearts.

Let us recall in their memory and to their glory the cry of hope which has risen on so many occasions from Infantry and other arms:

The Guns, Thank God, The Guns.

IMPROVED READING

(Continued from page 104)

by the Director of Military Training, who initiated the course, that efficient reading for comprehension must not fall below a standard of eighty per cent. In effect, the trend was away from comprehension as a function of reading speed to reading speed as a function of comprehension: pursuit of this deviation has led to further variation of the earlier technique.

Course No 1 showed a percentage increase in reading rate of fifty-five per cent, Course No 2 one hundred and fifty-six per cent. To correct undue weighting for a low initial rate, averages were expressed as an index for each group; the mean of the final five tests is taken to represent the degree of improvement and, since the starting attainment is assessed as the mean of an easy and a difficult test, this tends to give a more conservative estimate of improvement than would be the case if only the last two tests, similar to the first two, were used to obtain the improvement figure. Course No 3 is now proceeding; however, two students have completed the course with three hundred and twenty and two hundred and sixty per cent improvement respectively. Another student who has almost completed the course has read his last three tests at an average speed of 1,150 words a minute. All comprehension tests measure equally reading for detail, criticism and reflection.

Some reference to the apparatus and its limitations may not be amiss. A reading rate controller holds a book under a moving shutter which covers a line of print at a time. Set at specific rates of speed, it forces the reader to his capacity, increases concentration; and by cutting off the lines read, prevents regression.

A tachistoscope speeds up the reader's ability to see and comprehend words flashed on a screen. It is derived from a 35-mm. slide or film strip projector fitted with a shutter allowing images to be thrown on a screen at controlled speeds. Practice with this machine increases effective eye-span by sharpening peripheral vision. Each machine is a useful aid but, like the electronic brain, you cannot get more out of it than you put into it. Man's perennial hope of getting without giving is dashed again: the machines will not increase his vocabulary; they will not teach him the methods by which writer's develop their themes; they will not enable him to read paragraphs for ideas rather than words; they will not practise for him between periods. All these things and others are required of the student. And it must never be forgotten that speed itself is a variable.

Talking of variables, the whole field of reading improvement is an almost undifferentiated expanse of variables: the facts are empirically determined. To carry out a scientifically controlled experiment, the theorist would need to have access to large groups in a similar IQ band; use all methods singly and together; employ teachers with, at least, similar personality profiles; and have a lot of time and statisticians at his disposal. The obstacles to carrying out such a project are not insurmountable but they are formidable.

THE CORPS OF ROYAL CANADIAN ENGINEERS

A Canadian Army Development

How Long to Erect a Job Shack?

A Paper Written by A. W. Smith and R. F. Legget, Division of Building Research, National Research Council of Canada, Ottawa*

Sponsored by the Chief Engineer, a project to produce a prefabricated hut for general and temporary use in temperature climates was begun by the former Directorate of Engineer Development in 1948. Trials of prototype items included their erection and use during winter exercises and at job sites on the North-West Highway System, at Fort Churchill, at the Royal Canadian School of Military Engineering, Camp Chilliwack, B.C., and at Calgary and Edmonton. Technical and user trials established that this barrack-type hut, of insulated plywood stressed skin construction, was suitable for use in Canada. On 9 March 1951 the hut was formally accepted for use by the Canadian Army, designated "Hut, Prefabricated, General Purpose", and classified as "Standard". A large number was procured and stocked, and many have been used by the Armed Services and by contractors in various parts of Canada, including the Arctic.—Editor.

One of the problems of the contractor in all branches of construction is the provision of his office accommodation for the job and allied temporary buildings. It is a usual requirement of contract specifications that the contractor shall provide also similar accommodation for the job representatives of architects and engineers.

These temporary buildings are usually necessary right at the outset of jobs. All too often they are rushed up because of this urgency without much preliminary study or planning. Not infrequently the final cost is greater than that originally contemplated and little or no salvage return is obtained.

For smaller jobs there has developed the very convenient practice of utilizing old buses or large trailers for providing this temporary accommodation. The use of such mobile buildings is strictly limited to small jobs so that the problem of providing necessary temporary accommodation for larger jobs still awaits a convenient solution.

The Division of Building Research of the National Research Council faced a somewhat similar problem at the start of its operations ten years ago. It had no building to use and the accommodation kindly made available for it in buildings of the Division of Mechanical Engineering, at the Montreal Road Laboratories of the Council, at the eastern outskirts of Ottawa, was soon utilized to the full.

At about this time the Canadian Army was experimenting with prefabricated wooden hut buildings designed for general military use and so fabricated that they could be erected and dismantled easily and with little risk of damage. The Division of Building Research was able to procure three of the Army prefabricated huts Mark II.

Appreciating the corresponding

Reproduced from the April 1959 issue of Engineering and Contract Record, Toronto, by permission of the Editor of that publication.—Editor.

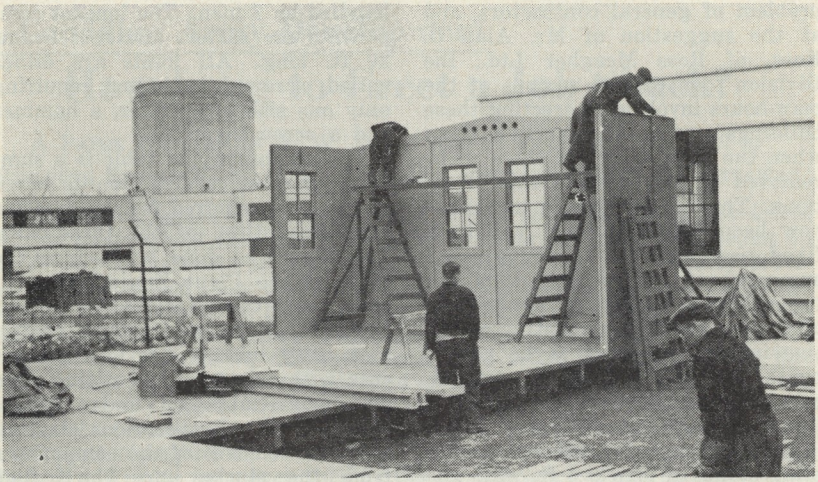
problem of general contractors, and at the suggestion of Mr. Alan C. Ross, of Ross Meagher Ltd., the Division took careful records of the man hours involved in erecting these buildings and in dismantling them when the time came for them to be removed or moved from their locations. The two permanent huts have now been placed in what will be a fixed position. This paper gives a summary of the records thus obtained in the hope that they will be of service to general contractors as showing the economy to be gained by the use of this type of prefabricated building for the provision of temporary accommodation.

The huts are formed by assembling standard panels 4 ft. wide and ranging in length from 10 ft. wall panels to 11 ft. roof panels, easily handled by 2 men. The longest components are rafters and roof beams 20 ft. long. All joints are either nailed, screwed or bolted requiring only one size of spanner, a hammer and a screwdriver.

The accompanying table is a summary of most careful records taken of the time required for the erection and dismantling of the three huts. The work was done by men on the staff of the Plant Engineering Division of the National Research Council. Although trained craftsmen, they had no previous experience with this type of building. The man-hours tabulated under "Erection" include all operations starting with the removal of the components from the stacks into which they were placed on delivery, up to the complete erection of the building in

Courtesy National Research Council of Canada

A truck loaded with prefabricated panels for walls and roof arrives at the site where the Division of Building Research held time studies on erection. Panels are 4 feet wide and either 10 or 11 feet long. Longest rafters are 20 feet.



Courtesy National Research Council of Canada

Prefabricated parts for the job shack fit together quickly. Each panel or rafter can be handled by two men.

a state ready for the installation of services. The "Dismantling" man-hours include all operations down to the stacking of the individual components, the work starting after services had been removed from the building.

Foundations varied with the site and the use to which the huts were to be put, but the final erection of the two permanent buildings was on a plain concrete slab. Variation in foundation type did not appear to affect the erection time after the floor had been completed.

In some cases specially made garage doors were required for storage access, and in the case of M13D the restricted site area dictated on L-shape instead of the regular rectangular shape. In order to give a more representative comparison of man-hours and building area, the extra work required in these particular instances has not been recorded, although the custom made connection between the wings of the L-shaped building added almost 20 man-hours.

No serious difficulty was encountered in any of the operations, despite the inexperience of the workmen. It was noted that some of the panels were not as "square" as desired and did not line up as expected. This minor distortion of the roof panels in particular, accenuated in extremely cold weather, emphasized the importance of the caulking operation required to waterproof the roof joints. Some of the leaks that occurred made it difficult to separate the rafters from the wall panels because the wall joints had become wet. In only one case was it found necessary to jack the rafters out of their wall slots and to use screw clamps for those more solidly wedged.

The only modification made to these buildings during their use by

TIME FOR ERECTION

BUILDING	WALLS	RAFTERS	ROOF	MISC.	TOTAL	FLOOR etc.
M13D*	33.6	28.3	22.2	4.0	88.1	Concrete
M13F	←		85 →		85.0	88
No. of Men	4	2-4	6-11	2-3	—	

TIME FOR DISMANTLING

BUILDING	ROOF	WALLS	RAFTERS	FLOOR etc.	MISC.	TOTAL
M13D	11.8	24.4	9.5	16.5	2.5	64.7
M13E	7.8	— 29.0	—	19.0	1.7	57.5
M13F	18.7	— 41.2	—	7.9	1.8	69.6
No. of Men	6-14	6-8		2-6	2-4	—

ALL RECORDS IN MAN-HOURS
ALL BUILDINGS 20 FT. X 84 FT.

*But 13D arranged as an 'L' 20 ft. by 48 ft. and 20 ft. by 32 ft. (Misc. items includes entrances, all skirtings, facing, and flashings but excludes roof caulking, painting and all interior work.)

Courtesy National Research Council of Canada

Distortion of roof panels emphasized the importance of caulking. The shack was ready for use in 88 man-hours.

NEW FUEL CELL

A new fuel cell that produces electricity economically through conversion of the chemical energy of gases is now a reality and may be adapted to power the [U.S.] Army's new "Silent Sentry" miniature radar set. When fully developed the new battery is expected to eliminate the need for bulky, noisy motor generators in many other types of equipment.

Electricity is produced directly from hydrogen and oxygen in a fuel cell which is from sixty-five to eighty per cent efficient when operated at normal temperatures and pressures. In operation, hydrogen and oxygen are pumped through hollow, porous carbon electrodes that extend through a sealed case filled with potassium hydroxide. The electrolytic process that results produces the electric current. At the hydrogen electrode, the electrochemical reaction with the potassium hydroxide produces water and releases an electron that enters the electric circuit.

The water produced by the reaction is evaporated. The amount of current depends on the size of the cell and the pressure of the hydrogen and oxygen. One cell yields about one volt.—*Condensed from "Ordnance" (U.S.).*

Fast Camera Shutter

A camera shutter so fast it makes possible the taking of photographs at the rate of one exposure in five billionths of a second has been developed by the [U.S.] Army.

The secret of the new shutter is in a hermetically sealed, large-aperture, wide-angle cell which has no moving parts. This cell contains a chemical which has the capability of being "pulsed" electronically. The molecules of this chemical will not permit passage of light in "closed-shutter" condition, but an electrical impulse will realign them to permit transmission of the image to make the picture. With further refinements it is hoped that a camera may be designed capable of making pictures with an exposure time of only a fraction of a billionth of a second. — *Condensed from "Ordnance" (U.S.).*

How Long to Erect a Job Shack?

(Continued from page 119)

the Division on Building Research throughout the period of eight years has been the introduction of small steel angle brackets connecting the roof panels to the rafters near the walls, purely as a precaution against lifting of the roof panels in wind gusts over 60 m.p.h. When the two permanent buildings were re-erected on their concrete foundation a layer of rolled felt roofing was installed over the original roof panels to avoid the rain leaks previously mentioned.

The Division's use of prefabricated buildings represents just the type of service that would be required by contractors. It is therefore hoped that this record of actual service use and actual erection and dismantling times will prove of assistance to contractors in Canada faced with the problem of providing temporary accommodation on their construction jobs.

THE ROYAL CANADIAN ARMY SERVICE CORPS

THE NORMAN WELLS-CANOL PROJECT

By

LIEUT. J. R. LISS, No. 4 COMPANY, RCASC, EDMONTON, ALTA.

Born of the desperate need for oil to keep the Allied war machine functioning, the Canol Project undertaken at Norman Wells in the North-West Territories during the Second World War undoubtedly was one of the greatest engineering feats of its kind in North America, perhaps in the world.

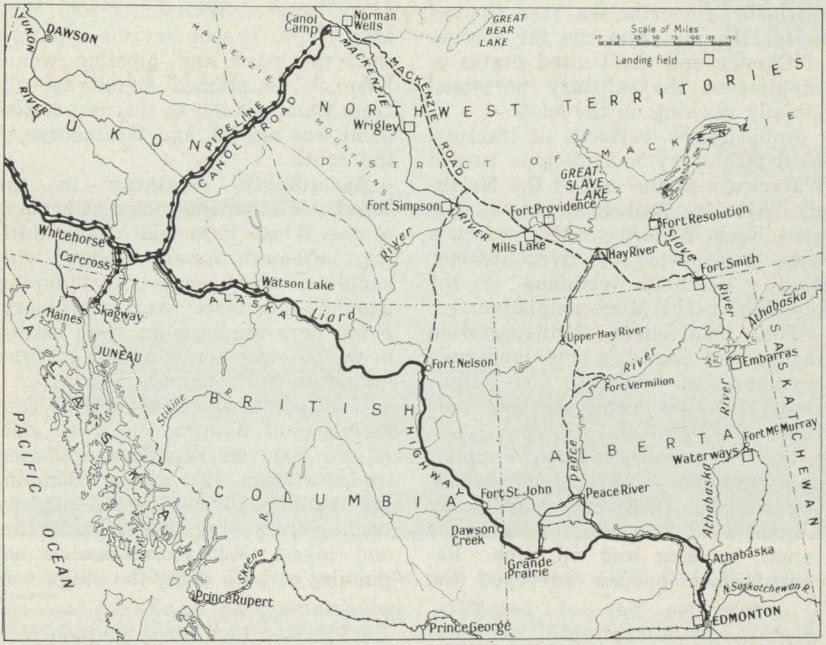
Some twenty years before, Imperial Oil geologists had pushed their way into the hitherto unexplored reaches of the Yukon and the North-West Territories following the discovery of telltale formations of salt domes which lay beside the huge tar-sand deposits in the Athabasca region farther to the south.

The first wildcat well in the area was drilled just below the Arctic Circle in 1919, near Fort Norman, on the Mackenzie River, hence the name Norman Wells. Several more wells were drilled and were capped. There was little market for the oil in the immediate vicinity of the field and little activity in the region until the Second World War. By the time the Japanese had pointed their guns at Alaska in 1942, an alarming situation was developing. A steady supply of oils and lubricants was required to feed the countless trucks hauling war machinery to Alaska. Giant trucks trying to haul a gasoline supply to the north along the newly created Alaska Highway ate up their own loads going and coming. Oil was desperately needed, and the only known field in the area was Norman Wells.

The strategic possibilities of the field were investigated, and it was estimated that 3000 barrels of fuel per day could be produced. This would be sufficient to meet the needs of the mechanical highway monsters, and so it was decided to go ahead with the project.

The oil field lay 400 miles from the new Alaska Highway, already under construction. Between the points where the pipeline would begin and end, lay numerous, unmapped mountain ranges—in fact the area had never been completely surveyed. It was known that pipeline builders would have to fight muskeg, permafrost, glaciers, landslides and flash floods, and that this would no doubt be the toughest construction project of its kind ever attempted. A crude oil pipeline would be built to Whitehorse in the Yukon and a refinery to process the oil was also to be constructed there. From Whitehorse the oil would be transported again via pipeline along the Alaska Highway both north and south to reach the refuelling stations. Through the supplementary pipelines gasoline was to be pumped to supply fuel not only for ground vehicles and aircraft engaged in local operations, but also for the swarms of American lend-lease fighters and light bombers that were being ferried to the Soviet Union for use against the Germans on the Eastern front.

Before work was started on the Alaska Highway, the Canadian Government had established airports



Courtesy Royal Canadian Geographical Society

along the route—the North-West Staging Route. Long stretches of the road had actually been pioneered between airfields, and the remainder of the existing road was joined by winter tractor trails. By comparison the Canol Project was vastly different. Before construction of the pipeline began, contractors had to create their own supply system through the under-developed area. More airfields and roads were constructed for Canol (a contraction of Canadian Oil) than for the Alaska Highway.

Some nine thousand miles of northern routes were used on the Canol Project. Two thousand miles of this was pioneered, the remainder was over existing water and ground lines. More than a hundred thousand tons of freight were moved using these facilities.

Today in the Mackenzie region there are eleven airstrips and several emergency fields, all of which were constructed in conjunction with Canol. There are campsites, town-sites, oil wells, pipeline and telegraphs, many rotting with disuse, but they will serve as a reminder of the project for years to come.

As the construction began, contractors advertised for workers, with warnings that living conditions would be as difficult as those encountered on any construction job undertaken anywhere in the world. Working conditions would be rigorous, with temperatures ranging from 90 degrees above to 70 degrees below zero and swarms of mosquitoes and flies to make existence even more

difficult. Nevertheless, men flocked in for the job from the far corners of Canada and the United States to supplement the military personnel already working on the spot.

Immediately, carloads of tractors, road machinery and oil pipe turned Waterways at the end of the Northern Alberta Railway into a turmoil. From Waterways the materials were transported by river steamer to the northern terminus of the pipeline on the Mackenzie River.

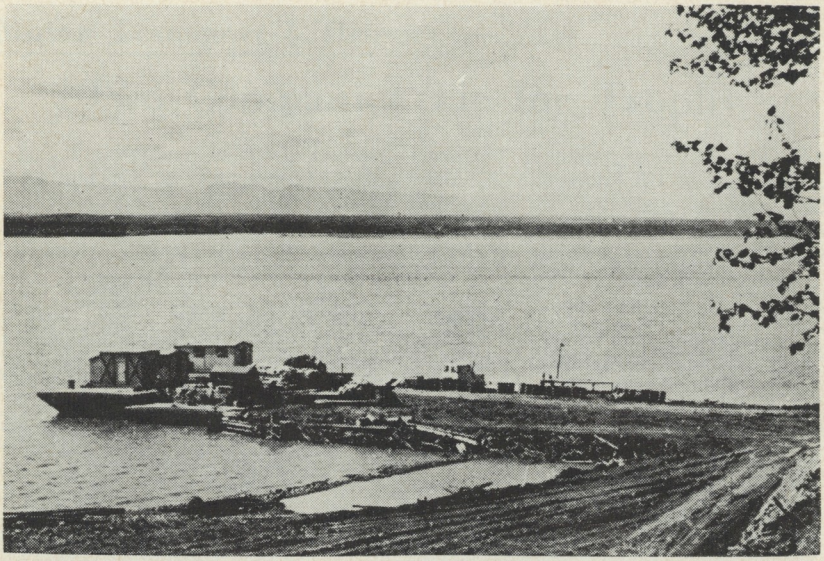
The insufficient transportation facilities of Canada's northland were supplemented by boats and barges from the Mississippi and Missouri Rivers in the U.S.

The first loads of men, supplies and equipment were piled ashore opposite the Discovery Well on 14 August 1942 in a chaotic jumble of forest, muskeg and oil pipe. Reconnaissance parties surveyed the route between Whitehorse and Norman Wells. It soon became apparent that the road and pipeline would have to be started simultaneously from Camp Canol, as the new settlement was named, and Whitehorse to the south.

Accordingly, Skagway in the Alaska Panhandle, ocean terminus of the White Pass and Yukon Railway, although already clogged with supplies, also became a dumping ground for more war machinery. From here the supplies were hauled over an old narrow-gauge railway inland to Whitehorse.

During the winter of 1942-43 construction of highways at both ends of the line was rapidly overcoming transportation difficulties. Remaining supplies were hauled up by tractor train over the frozen rivers and lakes. With construction beginning at both ends, the stage was

Courtesy Standard Oil Co. (N.J.)
The tent colony adjacent to Camp Canol.



Courtesy Standard Oil Co. (N.J.)
Unloading a barge. Camp Canol was just across the river from this point.

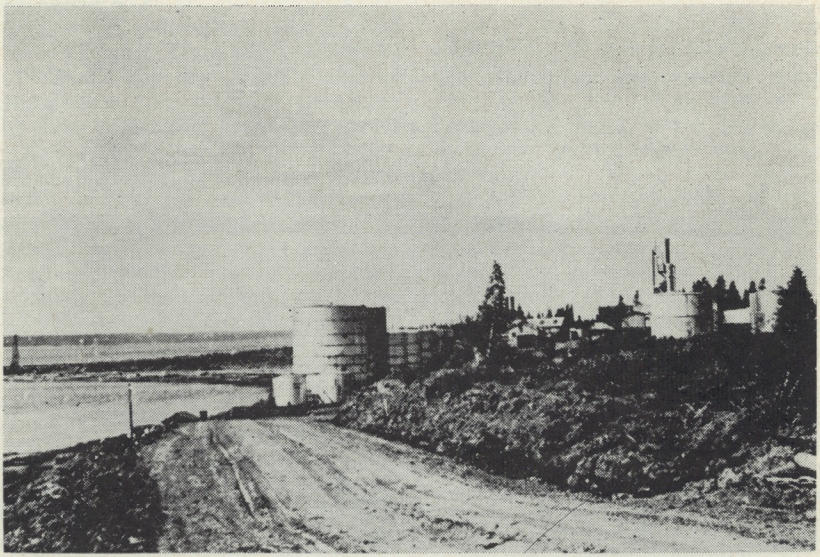
now set for one of the most amazing engineering feats ever attempted.

Construction started immediately after arrival of the supplies and continued through the winter. Diesel oil pumped through the partially-completed pipeline was used for the trucks and bulldozers on the access road. Thirty-foot lengths of pipe were welded into a continuous steel ribbon as the line increased its length. Although the route from Norman Wells was 400 miles, about 550 miles of pipe were laid because of the devious route that had to be followed.

Fortunately, the oil had a paraffin base and would flow at sixty degrees below zero. The line could therefore be laid on top of the ground: it did not have to be buried for protection against the cold.

Because of the extreme winter cold, diesel fuel in the tractors stiffened to the consistency of vasoline. Light motor oil became as hard as cup grease. Sleigh runners scraped jagged surface rocks and wore out in no time. Bulldozer blades snapped like matchsticks on the large rocks.

When the diesel oil in tractors froze and the fuel supply was cut off, mechanics had to clear the lines, often in 70-below zero weather. The problem was solved finally by running the motors 24 hours a day. When a motor stopped, it stopped for good. The only way to start the machine again was to build a large bonfire beneath, and hope that the apparatus itself didn't ignite before it got rolling. Even today, along the scar that remains of the Carol Project, abandoned machinery bears mute testimony of the extreme effort and haste that was thrown behind the project.



Courtesy Standard Oil Co. (N.J.)

Oil storage tanks between Camp Canol and the refinery.

The access road from Camp Canol to Whitehorse, which complemented the pipeline, was no doubt the most awesome part of the whole project. Snorting bulldozers laid down a primary grade of moss and scrubby timber to form a roadbed on the permafrost. Upon this was piled sand and gravel to make, theoretically, an all-weather road. Sometimes when making a side-hill cut, the whole hill-side would come sliding down the grade upon the slippery ice-like base on which it lay.

But every obstacle fell before the relentless pressure of the pipeline builders. Over the almost insurmountable Mackenzie Mountains, the pipeline snaked its way along in one long continuous line of steel.

During the middle of the night of 16 February 1944 the line was completed. Next came the test for the project. Although 3000 barrels of oil per day had been promised before the project was begun, as much as 4000 barrels was pumped through on some days.

Hardly had the project been completed when the war ended.

The line and refinery at Whitehorse were partially abandoned. The section of line from Whitehorse to Fairbanks is still in use, but the remainder is nearly forgotten. Across the river from Norman Wells lies the ghost town of Camp Canol, now a tangle of rotting huts and warehouses jammed with spare parts long since obsolete. The pipeline and road still wind along the muskeg and mountains. The right-of-way is jammed by slides and the bridges have been washed away.

The entire Canol Project is reported to have cost 137 million dol-

(Continued on page 128)

Motor Transport Efficiency

Two Companies Tie for Trophy

No. 1 Company RCASC, London, Ont., and No. 2 Company, RCASC, Lakeview, Ont., this year tied for the MacQueen Trophy for Motor Transport Efficiency. No. 2 Company, winner of the competition in the three preceding years, will hold the trophy for six months. It will then be turned over to No. 1 Company for the balance of the year.

The trophy was donated by Major-General J. H. MacQueen, CBE, CD, former Master General of Ordnance, and is awarded annually to the RCASC (Regular) Static Unit which obtains the greatest number of points based on the maintenance grading, accident rate and the number of miles travelled per vehicle.

The Officer Commanding No. 1 Company is Major B. E. Kyle; Major J. V. Baker commands No. 2 Company.

The first winner of the competition (1943) was the First Canadian Motor Ambulance Convoy RCASC.

Canadian Army Photograph

Colonel G. F. Stevenson (second from the right), Director of Supplies and Transport, Army Headquarters, Ottawa, presents the MacQueen Trophy for Motor Transport Efficiency to S/Sgt. William Vincent, NCO in charge of transport, No. 2 Company RCASC. Colonel Stevenson is flanked by Lieut.-Colonel H. B. Brodie (right), Supply and Transport Officer, Headquarters Central Command, Oakville, Ont., and Major J. V. Baker (left), Officer Commanding No. 2 Company.

NORMAN WELLS—CANOL PROJECT

(Continued from page 126)

lars. Altogether, 1000 miles of roads and telegraphs and 1600 miles of pipe-line were constructed. The project took 20 months and did not really live long enough to justify its existence.

Scavenging salvage crews have since picked the line clean of brass fixtures and fittings. Anything of value which could be hauled away was taken out before the road was closed. All that remains is the pipe. Even the refinery at Whitehorse has since been partially hauled away to Edmonton.

Production today is 1300 barrels per day at Norman Wells. During the summer 90 people are employed there, and during the winter the town is staffed by 30 people, a far cry from the booming war years.

The products of Norman Wells today are largely transported by boat. Along the Mackenzie river, at Hay River, Providence, McPherson, Simpson, Good Hope, Resolution and Arctic Red River and in tiny camps alongside silent mountains and lakes, beside the tents of lone prospectors, stand the oil drums from Norman Wells.

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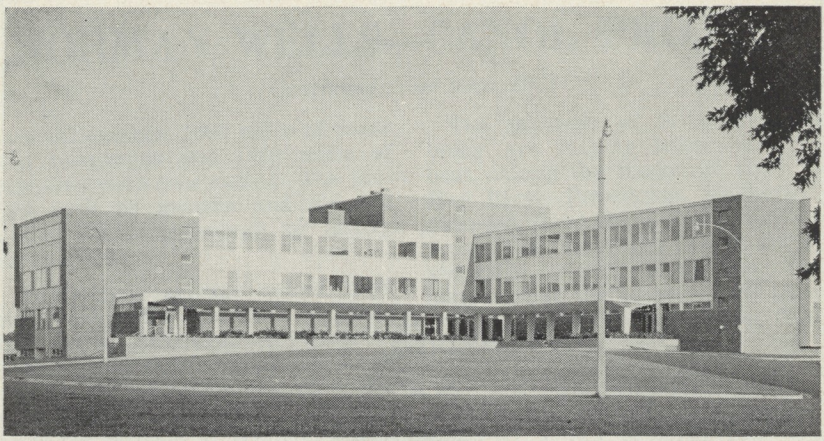
Communist Foreign Aid

According to a West German study, the Soviet Union has loaned or granted seven billion dollars in aid to Communist bloc nations since 1945, and committed herself to about one billion dollars in aid to other under-developed nations. There are 2000 Communist technical experts working on projects in 19 foreign countries, of which 80 per cent are working in Afghanistan, Egypt, India and Syria. About 500 of these were military specialists assigned to Egypt and Syria. Communist China has provided aid to foreign countries as follows: 190 million dollars in 1955, 171 million in 1956 and 215 million in 1957. North Vietnam and North Korea each received the equivalent of 85 million dollars in aid, the remainder going to Nepal, Outer Mongolia, and Hungary in 1957. Figures for Communist Chinese aid include credits, loans and gifts.

The Soviet Union has announced a loan of 120 million rubles (30 million dollars) to Afghanistan for use in development projects.

United States aid to Afghanistan was reported to be almost 80 million dollars a year ago, and Soviet assistance offers were estimated to be between 136 and 147 million dollars at that time.—*From a news item published in the January 1959 issue of the "Military Review" (U.S.).*

THE ROYAL CANADIAN ARMY MEDICAL CORPS



Canadian Army Photograph
The Canadian Forces Hospital at Kingston, Ont.

New Forces Hospital Opened

FROM A REPORT ISSUED BY THE DIRECTORATE OF PUBLIC RELATIONS (ARMY), ARMY HEADQUARTERS, OTTAWA

One of the most modern 125-bed general hospitals in North America was officially opened at Kingston, Ont., on 9 October last by the Minister of National Defence, The Honourable G. R. Pearkes, V.C. This $2,500,000 structure is part of the unified Canadian Forces Medical Services, and not only provides care for patients from the Royal Canadian Navy, the Canadian Army and the Royal Canadian Air Force, but is staffed by personnel from each of the three Services.

The Canadian Forces Hospital is commanded by Colonel J. W. B. Barr, CD, who previously was Commanding Officer of Kingston Military Hospital, which was disbanded earlier this year when the patients were moved to this new building.

The initial studies that led to the final plan began six years ago under the direction of the present Surgeon General, Major-General K. A. Hunter, OBE, CD, QHP. Following his recommendation, the Quartermaster General arranged for the civilian architectural firm to work with Army engineer and medical staffs to develop the plans and specifications for the hospital. The building was erected under Defence Construction (1951) Limited and military supervision.

As a regional full-care hospital, it is staffed and equipped to provide care and treatment of the most difficult cases. The staff includes specialists in surgery, medicine, ophthalmology, ololaryngology, psychiatry, anaesthesiology and radiology. In addition, civilian consultants are available when their services are required.

(Continued on page 144)

THE ROYAL CANADIAN ARMY CADETS

1959 Bisley Shoot

Cadets Make Excellent Showing

By

CAPTAIN D. G. MACKINNON, ROYAL CANADIAN ENGINEERS,
ARMY HEADQUARTERS, OTTAWA*

The 1959 Royal Canadian Army Cadet Bisley Rifle Team was one of the most successful teams sent to the National Rifle Association Matches in recent years. On virtually every prize list, in the individual matches, one or more of the team members names appeared. This is quite an accomplishment for cadets whose ages range from 16 to 18 years, particularly when it is realized that they are competing with the top marksmen from all parts of the Commonwealth, some of whom have shot in competition for decades.

Under command of a Senior Cadet Services of Canada officer, Lieut.-Colonel G. E. Armstrong, DSO, CD, a former member of the Argyll and Sutherland Highlanders of Canada (Princess Louise's), the team concentrated at Montreal for equipping and final briefings.

The Director of Militia and Cadets, Colonel J. M. Delamere, MBE, ED, CD, saw the team off at Dorval Airport as they left for England.

After "settling in" at the Honourable Artillery Company Pavilion at Bisley, the team commenced practice as individuals and as a team on the ranges. The first team match was a friendly shoot with the team of the Honourable Artillery Company on 10 July. The Cadet team of six men posted a score of 129 points at 900 yards, but this was not good enough to beat the Artillery's score of 146.

On the same date the first of the Service Rifle (b) Matches commenced with the firing of the "Century" Match at 500 and 600 yards. The highest possible score in this match was 70 points. Cadet Capt. C. W. Bolton of Lytton, B.C., Cadet WO 2 William Baker of Val D'Or, P.Q., and Cadet WO 2 P. B. Barclay of Victoria, B.C., with scores of 67, placed on the prize list. Cadet Cpl. Harry Kleiner's score of 66 points also placed him on the prize list. Corporal Kleiner is from Hamilton, Ont.

The next morning the "Donegall" Match was fired from 200 yards. In spite of pouring rain two of the team members posted scores of 49 points out of a 50-point possible to place in the prize money. They were Cadet Cpl. Kleiner and Cadet Lieut. Jan Parks of Amherstburg, Ont. Other cadet winners were Cadet Sgt. Cameron Begg and Cadet Cpl.

**The author, who accompanied the Cadet Team to Bisley as adjutant and coach, is himself a Bisley shot. He organized, was captain and shot as a member of the Western Command (Royal Canadian School of Military Engineering) Rifle Team which won the Canadian Army (Regular) Rifle Championship at Connaught Ranges, Ottawa, in 1957. In 1958 he took this team, representing the Canadian Army, to Bisley to shoot in the National Rifle Association's Commonwealth Matches.* — Editor.

Canadian Army Photograph

Cadet Cpl. M. Johnson marks the score for Cadet Sgt. C. Begg on the firing point at Bisley.

Michael Johnson, both of Hamilton, who scored 47 points each.

By the time the next match, "The Daily Telegraph", was fired at 300 yards the weather had cleared. The only team member who was able to place on the prize list in this competition was Cadet WO 2 Baker who posted a score of 48 points out of 50. In the very difficult "Conan Doyle" Match, fired at 900 yards on the tricky Stickledown range at Bisley, Cadet WO 2 W. C. Younghusband of Ottawa scored 42 points out of a possible 50. However, this score was not good enough and was one of the 42's "counted out".

The team fared better in the "Alexandra" Match, 10 shots at 600 yards giving an H.P.S. of 50 points: Cadet Prize winners were Cadet S/Sgt. William McRae of Hamilton and Cadet Lieut. D. L. Perry of Lancaster, N.B., both with scores of 46 points; Cadet Cpl. Johnson with 45 and Cadet Sgt. Winston MacKelvie of Verdun, P.Q., also with 45 points. These achievements for the cadets continued throughout the meet.

Outstanding accomplishments were the placing of three cadets in the second stage of "Her Majesty the Queen's Prize" — Cadet Sgt. Begg, Cadet Capt. Bolton and Cadet S/Sgt. McRae who succeeded in qualifying for "The Queen's Hundred". There were more than 1200 competitors in in the Queen's Prize Match, and these were reduced in two stages to 100—"The Queen's Hundred". Cadet Capt. Bolton was also successful in reaching the third stage of the "St. George's" Match. Cadet WO 2 Barclay placed first in the "Tyro Extra Prizes" competition by scoring a "possible" 35 at 200 yards. In the tie shoot-off he scored 22 consecutive "bulls-eyes" before getting an inner for a score of 114 out of 115!

In the Cadet Matches which commenced on 20 July, the team and

individual members were very successful. In the "Wellington" match, Cadet WO 2 Younghusband won the challenge cup presented by His Grace the Duke of Wellington with a "possible" of 35 points at 200 yards and another "possible" of 25 in the tie shoot-off. In a field of 114, Cadet Sgt. Begg placed 4th, Cadet Cpl. Kleiner, 5th, Cadet Capt. Bolton, 8th, and Cadet Lieut. Perry, 12th.

Cadet Cpl. D. A. MacQuarrie of Regina, Sask., scored a "possible" at 500 yards to win the Countess of Iveagh Trophy. His score was 35 out of 35 with a score of 24 out of 25 in the tie shoot-off. In the "Spencer-Mellish" cup which is 10 shots at 500 yards, Cadet Sgt. Begg tied for first place with a "possible" 50 points. In the shoot-off he dropped to an "inner" on the fourth shot thus placing second to Cadet L/Sgt. J. F. Jackson of St. John's School, Leatherhead, England.

The Royal Canadian Army Cadet Team fired alongside 98 teams from British Public Schools and won the "Ashburton" Competition by one point! However, due to the rules of the competition, they were unable to receive the "Ashburton Challenge Shield" which is open to School Cadet Teams only. The H.P.S. in the shoot was 560 points, the Canadians getting 518 points and the team from St. Lawrence College, Ramsgate, England, 517 poinnts.

The first portion of the Ashburton Competition is known as the "Kinder" and is fired at 200 yards with

Canadian Army Photograph

Cadet WO 2 P. B. Barclay "reads the wind" for Cadet/Capt. C. Bolton on the Bisley Ranges. WO 2 Barclay scored 29 consecutive bulls-eyes to win the 200-yard "Tyro Extra Prize" match and Captain Bolton was successful in qualifying for the third stage of the "St. George's" match.

Planet News Ltd. (London) Photograph

The Royal Canadian Army Cadets Bisley team are shown here during a visit to The Mansion House, residence of the Lord Mayor of London. *Left to right:* Cadet Lieut. D. L. Perry, Cadet Sgt. W. MacKelvie, Cadet S/Sgt. W. McRae, Cadet WO 2 W. Younghusband, Cadet Sgt. C. Begg, Captain D. G. MacKinnon, team adjutant and coach, Cadet Cpl. A. D. MacQuarrie, Sir Harold Gillett, the Lord Mayor, Lieut.-Colonel G. E. Armstrong, team commandant, Cadet Cpl. H. Kleiner, Cadet WO 2 P. B. Barclay, Cadet WO 2 W. Baker, Cadet Capt. C. Bolton, Cadet Lieut. J. M. Parks, Cadet Cpl. M. Johnson.

an H.P.S. of 280 points. The Canadians broke a 262-point record made by Eton College in 1947 by one point, scoring 263 points! Here again the team was ineligible to take the challenge cup, which was won by St. Lawrence College with a score of 260 points.

The main aim in sending a cadet rifle team to Bisley is to compete against the British cadets in the "Alexander Graham Bell Match". This competition is open to a team from the Royal Canadian Army Cadets and one composite team from the United Kingdom Combined Cadet Forces or the Army Cadet Force. This trophy was presented by the late Director of Militia and Cadets, Colonel Donald Buell, DSO, CD, for perpetual competition between the Army Cadets of Canada and Great Britain. Except for 1955, the British Army Cadets have retained this trophy each year. The composition of the Canadian Team is determined each year by a number of competitions conducted by the Dominion of Canada Rifle Association during the Annual Meet at Connaught Ranges, Ottawa, and which are grouped to form a Cadet Bisley Team Aggregate. From this aggregate cadets are selected for the Royal Canadian Army Cadet Bisley Team.

There is a time limit of 70 minutes per team at each range. Each team member is required to fire two sighting shots and 10 shots on score at each range. The distances are 200 and 500 yards and the dress is uniform. Eight shooting members plus two in reserve constitute the team. The Team H.P.S. is 800 points. Coaching is allowed by team members only.

This year's competition was fired under sunny skies but with fairly tricky wind conditions. In the first stage of the competition at 200 yards the British Cadet Team took a lead of 2 points—378 to 376 for Canada. In the second stage at the long range, the Canadian Team began to catch up until one team member had the misfortune to draw a defective round which gave him a miss on his ninth shot after shooting five bulls plus three inners. However, his tenth shot was a bullseye for a score of 42 out of a possible 50. The final count showed the British Cadets winners by three points! It was a tough competition to lose. The final score was British Cadets 742 points and Canadian Cadets 739 points.

The "Schools' Hundred" is shot concurrently with the "Ashburton" competition and awards "N.R.A. Schools Hundred Badges" to the 100

Canadian Army Photograph

The Hon. George Drew, Canadian High Commissioner to the United Kingdom, congratulates Cadet S/Sgt. William McRae on winning a place on "The Queen's Hundred" at Bisley.

Canadian Army Photograph

Cadet W. C. Younghusband, 17, of Ottawa poses with his parents after receiving the Wellington Natal Challenge Cup from Lieut.-General S. F. Clark, CBE, CD, Chief of the General Staff, at Ottawa last August. Cadet Younghusband became the first Canadian cadet to win this coveted trophy after defeating more than 120 cadets from other Commonwealth countries at the National Rifle Association Matches at Bisley, England, last summer. The cup was presented in 1909 by the Duke of Wellington for annual competition.

high-scoring competitors of the 800 shooting the competition. The H.P.S. is 70 points. Four members of the Canadian team qualified for a badge —Bolton, 68; Barclay, 67; Kleiner, 66; MacKelvie, 65.

Whilst at Bisley the team made social visits to the nearby cities of Woking, Guildford and Brighton. Visits were also made to Windsor Castle, Eton College and the London Zoo in Regent's Park. On 7 July the Commandant, Adjutant and Team Members were hosts to senior officers of the British Armed Forces, National Rifle Association Officials and the Team Captains of the United Kingdom and Overseas Teams at a reception given in the "Long Room" of the Honourable Artillery Company's Pavilion.

At the conclusion of the Cadet Matches the team travelled to London and were quartered in the Tower of London as guests of the Royal Fusiliers. On 24 July they were flown by the Royal Canadian Air Force to Germany to visit the 4th Canadian Infantry Brigade. While there they visited the cities of Soest, Dortmund and Winterberg. A visit was also made to the Mohne Dam. After returning to England and the Tower of London

the cadets were guests of the Imperial Cadet Association which arranged visits to the Guildhall, Mansion House to meet the Lord Mayor of London, Sir Harold Gillett, The worshipful company of Vintners' Hall, The Honourable Artillery Company's Armoury House, the London Docks, the Guard Mounting Ceremony at Buckingham Palace and the London Airport.

The team met the Vice Chief of the Imperial General Staff, Lieut.-General Sir William H. Stratton, KCB, CVO, CBE, DSO, at the War Office, and the Canadian High Commissioner to England, Mr. George Drew. A day's trip to Paris via RCAF was arranged, and here the cadets were luncheon guests at SHAPE Headquarters and were taken on a tour of the city.

The team returned to Canada on 3 August.

* * *

HIGH STANDARD OF SHOOTING OBTAINED BY CADETS AT DCRA ANNUAL MATCHES

A REPORT PREPARED BY THE CADET SECTION OF THE DIRECTORATE OF MILITIA AND CADETS, ARMY HEADQUARTERS, OTTAWA

Eighty-five Royal Canadian Army Cadets, representatives of five Cadet Leader Rifle Coach Courses conducted at Command Cadet Camps across Canada, took part in the 77th Annual Dominion of Canada Rifle Association Matches at the Connaught Rifle Ranges, Ottawa, from 9 to 15 August 1959.

The DCRA matches are a culmination for some selected Army Cadets attending a seven-week Rifle Coach Course at the Command Cadet Camps. After approximately one month's instruction in service rifle shooting, each Command Rifle Coach Course sends a select group of cadets to Connaught Ranges where they take part in a number of individual and team matches. The experience gained in competition with other cadets, as well as with senior rifle shots from Canada, the United Kingdom and the United States is invaluable.

The DCRA matches provide the basis on which the Royal Canadian Army Cadet Bisley Team is selected for competition during the following year at the National Rifle Association Annual Meeting, Bisley, England. The selection is made from an aggregate of scores obtained in a series of matches known as the Cadet Bisley Aggregate.

The results obtained by cadets this year at DCRA was up to the usual high standard set in previous years' matches. When one considers that a majority of the cadets attending Command Rifle Coach Courses, and subsequently competing in the DCRA, have little or no experience in firing the service rifle, the standard of shooting, both as individuals and as teams, reflects their ability to learn and the first-class instruction they receive on their courses.

An article on the Buell Trophy appeared in the July issue of the Journal and the first competition was held this year. A team of eight cadets from Prairie Command, the last team to represent this Command, won the trophy with a score of 656.

The Lieut.-General Otter Cadet

Canadian Army Photograph

The Buell Trophy

Canadian Army Photograph

This team of eight cadets from Prairie Command won the Buell Trophy. *Front row, left to right*: Cadet Stephen Yacko, Cadet Kingsley Downs, Cadet James Thompson, Cadet Ivan Kulbisky. *Back row, left to right:* Cadet Ronald Brehm, Cadet Leonard Proctor, Cadet Gary Snell, Cadet Nicholas Ostash.

Team Match was won by a team of four cadets from Central Command.

The United Empire Trophy was won by a team of four cadets from Central Command. This trophy is awarded to teams making the highest aggregate scores in the Tyro, MacDougall and Bankers competitions.

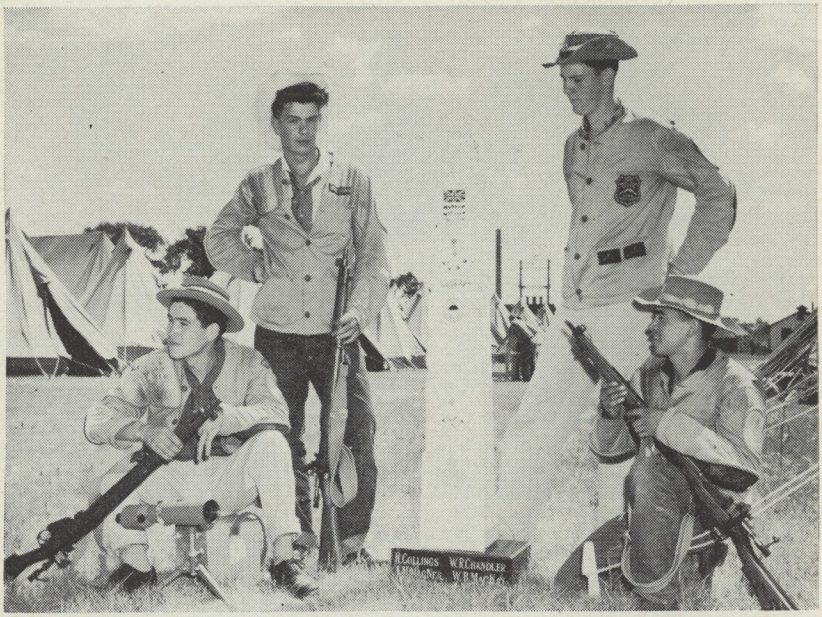
The Viscount Wakefield Cadet Aggregate Match was won by a team of four cadets from Western Command. This trophy is awarded to the four cadets with the highest aggregate scores in the Tyro, Connaught and MacDougall matches.

Due to the unfortunate absence of an Imperial Cadet Association Rifle Team (The Athelings), a competition between a team of British and Canadian cadets for the Michael Faraday Trophy, a highlight of past DCRA matches, was not conducted this year.

The following is a summary of the excellent results obtained by cadets at the DCRA matches this summer. *(Note:* (a) The open figures represent individual or team standings in the match, while those in brackets indicated the number of competitors or teams. These standings have been obtained from the

These four marksmen from Central Command won the United Empire Trophy. Left to right, they are Cadet Blair Cornwall, Cadet George McCullogh, Cadet Bob Dearborn and Cadet Lloyd Bishop.

Winners of the Lieutenant-General Otter Trophy and representing Central Command, these marksmen are, left to right, Cadet Grant Fish, Cadet Ralph Lawrenson and Cadet Jack McKellar. The fourth member of the team was Cadet Harry Kleiner.



Canadian Army Photograph

The Western Command team won the Viscount Wakefield Cadet Aggregate Match. They are, left to right, Cadet Clifford Bolton, Cadet Sgt. Bruce Wilkinson, Cadet WO 2 Patrick Barclay and Cadet Sgt. L. Bolton.

official DRCA results; (b) members Cadet Bisley Team; (c) team of the 1959 Royal Canadian Army matches).

Match	Standing (a)	Name		HPS	Score
Cadet Open Match	1 (41)	Cdt Scantland D	Quebec	35	35
Cadet Green Shot	1(23)	Cdt Vallee P	Quebec	35	35
Cornwallis	20(75)	Cdt Batter JE	Western	35	33
Uplands	30(76)	Cdt Brehm RR	Prairie	35	33
Borden Memorial	39(75)	Cdt Thompson JN	Prairie	50	40
The Standing	10(74)	Cdt Thompson JE	Prairie	50	45
The Tyro	2(125)	Cdt Younghusband W (b)	Central	50	50
	5(125)	Cdt Bolton C (b)	Western	50	50
	6(125)	Cdt Perry D (b)	Eastern	50	50
	7(125)	Cdt McLean HW	Central	50	50
	14(125)	Cdt Phillips R	Quebec	50	49
The McDougall	8(200)	Cdt MacKelvie W	Quebec	100	98
	13(200)	Cdt Yacko SA	Prairie	100	98
	16(200)	Cdt Downs JK	Prairie	100	98
The Bankers	25(253)	Cdt Perry DL (b)	Eastern	100	96
	46(253)	Cdt Barclay PB (b)	Western	100	95
	79(253)	Cdt Phillips R	Quebec	100	94
	96(253)	Cdt Ferris DM	Eastern	100	94
The Presidents	35(200)	Cdt Scantland D	Quebec	75	71
The Connaught	10(200)	Cdt Thompson JN	Prairie	75	74
	11(200)	Cdt Barclay PB (b)	Western	75	74
	27(200)	Cdt Perry DL (b)	Eastern	75	74
	70(200)	Cdt Whale WE	Western	75	73

Match	Standing (a)	Name		HPS	Score
The MacDonald Tobacco	5(244)	Cdt Younghusband W (b)	Central	125	122
	38(244)	Cdt Ferris DM	Eastern	125	120
	88(244)	Cdt Scantland D	Quebec	125	119
Alexander of Tunis	6(200)	Cdt Ostash NF	Prairie	50	47
Alexander of Tunis	38(200)	Cdt Carriere S	Quebec	50	44
Lt-Gen Otter (c)	1(9)	Cdt McKeller JR	Central	400	366
		Cdt Kleiner H (b)	Central		
		Cdt Fish GH	Central		
		Cdt Lawrenson RS	Central		
The Buell (c)	1(5)	Cdt Ostash N	Prairie		
		Cdt Downs JK	Prairie		
		Cdt Yacko AS	Prairie		
		Cdt Snell GE	Prairie		
		Cdt Thompson JN	Prairie		
		Cdt Kubisky IJ	Prairie		
		Cdt Proctor LF	Prairie		
		Cdt Brehm RR	Prairie		
Governor-General's (Qualifying Stage)	57(300)	Cdt Bolton C (b)	Western	150	144
	142(300)	Cdt Downs JK	Prairie	150	141
The Letson	30(137)	Cdt Bolton C (b)	Western	105	100
		Cdt Kleiner H (b)	Central	105	99
City of Ottawa	5(200)	Cdt Thompson JN	Prairie	100	97
	45(200)	Cdt Bishop LCA	Central	100	95
	74(200)	Cdt Billingsley RS	Western	100	93
The Consolation	10(45)	Cdt Reatherford CP	Central	50	46
	12(45)	Cdt Michaud KR	Central	50	46
	17(45)	Cdt Best R	Eastern	50	44
Governor-General's (Final Stage)	72(294)	Cdt Thompson JN	Prairie	250	228

The Real Stuff — A Prepared People

The real stuff of national solvency and a buoyant diplomacy, in the atomic era as formerly, is a prepared people. Nothing weighs in the power scale so much as how they look and whether or not they are trained, coiled and ready to spring in decisive numbers.

That means armies. The bedrock of national firmness is that kind of military training given the basic soldier and progressively broadened throughout the nation. The great paradox of this super-weapons age is that even while its strident voices proclaim the obsolescence of the self-starting rifleman, its greatest brains have devised no substitute for him as the soul and spiritual symbol of manageable collective resistance. You don't get butter without churning cream: you can't have military élan and mobility in any part without first widely winnowing the fields of trained courage. Science will never find a way to keep today's shock forces primed and ready to outdo Superman, if they come from an ill-trained, badly-disciplined society. It would be a greater miracle than splitting the atom. Unless man functions superbly under any and all conditions of war as is now envisaged, all our highly destructive means and all our complex new methods will be useless.—Brig.-Gen. S. L. A. Marshall in *Army*. (U.S.).

New Forces Hospital Opened

(Continued from page 130)

Patients are sent here from as far west as Port Hope, as far east as Cornwall and as far north as Peterborough. In an emergency, the helicopter ambulance from the RCAF Station at Trenton delivers patients right to the hospital grounds. In addition to caring for 125 in-patients, there are large out-patient facilities, which are supplemented by regular clinics held at Trenton by the hospital staff each week.

The Canadian Forces Hospital is an integral part of the teaching complex of the Queen's University Medical School. It also trains para-professionals and technical tradesmen in several skills, including certified nursing assistants.

In the event of a national emergency, the building is capable of ready expansion to more than 500 beds by simple additions to the present hospital. A permanent addition of up to 90 beds has been allowed for by adding another floor to the present three-storey structure.

The opening of the Canadian Forces Hospital, Kingston, by Mr. Pearkes marked a historic achievement by the Armed Forces, as this unit is the first new hospital building to be operated by the Canadian Forces Medical Service, a single medical organization looking after members of the Royal Canadian Navy, the Canadian Army and the Royal Canadian Air Force.

The hospital is constructed of reinforced concrete, brick and curtain wall construction with the porcelain panels in a light shade. The entrances are accessible from either the main highway, on which it borders, or through the net work of camp roads behind it.

The hospital has suffient space surrounding it to allow the helicopter ambulance to land close by.

Individual Study

It used to be supposed, indeed it may still be supposed in ill-informed circles, that the army officer requires to know very little beyond the mechanics of his profession. This was probably not true at any time; it is certainly not in the revolutionary epoch in which we live. Today no soldier can effectively discharge the duties of a senior command or staff appointment without a wide knowledge of what is going on in the world, in particular without a sure grasp of those aspects of political, economic and scientific affairs that impinge on national security and defence.

The professional education of an officer cannot be confined to the instruction he receives at Army Schools. Individual study is essential to the acquisition of that breadth of knowledge and understanding required of today's army officers. And, even when it has been acquired, individual effort is still necessary to keep it up to date.—*Lieut.-General A. R. Garrett, Chief of the General Staff, Australian Army.*

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