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CANADIAN Army JOURNAL

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

CANADIAN MILITARY LAW

By
BRIGADIER W. J. LAWSON, EM,
JUDGE ADVOCATE GENERAL OF THE CANADIAN FORCES,
NATIONAL DEFENCE HEADQUARTERS,
OTTAWA*

Military law and its administration in the armed forces of the United Kingdom, the United States and Canada has, since the conclusion of the Second World War, been the subject of considerable inquiry. In both the United Kingdom and the United States commissions were set up to investigate the subject and they have made comprehensive reports. Although no formal inquiry has taken place in Canada, the matter has been under careful study by the Government and in the Department of National Defence. As the result of these inquiries, there has been or will be enacted in all three countries legislation materially changing the administration of military law.

The new Canadian legislation is The National Defence Act, which was enacted during the first session of Parliament in 1950.[1] The purpose of this article is to examine briefly the history of military law and its place in the general law and to examine the National Defence Act in relation to them.

Canadian Military Law is that part of the law of Canada that applies to persons serving in or with the Royal Canadian Navy, the Canadian Army and the Royal Canadian Air Force. The ordinary law that applies to all citizens applies to the members of the forces also, but by joining the forces they subject themselves to additional legal liabilities and disabilities and acquire certain additional rights.

These additional liabilities and additional rights are prescribed in the special code of law that is called military law.

In order to have discipline and organization in an armed service, it is essential that there be a special code of law prescribing that certain acts or neglects that are not offences under the ordinary law shall be offences under the special code and treating

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[1] *14 Geo. VI, c. 43.*

Brigadier Lawson
A graduate of the University of Toronto and the Osgoode Hall Law School with the degrees of B.A. (Political Science), LL.B., and M.A. (Law), Brigadier Lawson was called to the Ontario Bar in 1934. He was commissioned in the Non-Permanent Active Militia in 1936, and in 1942 was appointed a legal officer. Through a series of promotions, he finally received his present appointment as Judge Advocate General of the Canadian Forces; he is also Chairman of the Defence Services Pension Board and Director of Estates. Brigadier Lawson did considerable work in the drafting of the new National Defence Act.

acts that may be minor offences under ordinary law as major offences. Many examples of offences of this nature can be found in Canadian Military law. One of the most jealously guarded rights of the ordinary citizen is the right to refuse to work, that is, to strike in a peaceful manner, but a strike under military law is mutiny, the punishment for which, in certain circumstances, is death. Again, a fundamental right enjoyed by every Canadian citizen is the right to leave his employment at any time, subject only to a civil liability for breach of contract, but for a soldier to leave his employment with no intention of returning to it is desertion, which, in certain circumstances, may be punished by imprisonment for life. Mutiny and desertion are examples of new offences created by military law. An example of an offence regarded by the civil law as minor and by military law as serious is the act of striking a person. For one man to strike another a blow causing no actual bodily harm is in civil law a common assault, but for a soldier to strike his superior or for an officer to strike a soldier is, under military law, a serious offence involving a heavy punishment.

History of Military Law

Military law, as we know it today, did not exist as a permanent part of the law of England until 1689. Before that date, military law was not enforceable in Britain in time of peace. It was, however, a part of the royal prerogative to issue what were called "Articles of War for the government of His Majesty's forces", but this prerogative could only be exercised

in time of war or in respect of troops serving out of the country. It was, therefore, impossible for the King to maintain a standing army in England in time of peace. As soon as the war came to an end or the troops returned to England, the power to discipline the army disappeared. If a man deserted, he could not be punished for his desertion; if he struck a superior officer, he had to be brought before a civil court on a charge of common assault. Under these conditions, it was impossible to keep the army together. It is of interest to note that one of the causes that led to the revolution under Cromwell was the attempt by Charles I to extend the royal prerogative to the issuance of such Articles of War in England in time of peace.

Some of the old Articles of War are extremely interesting and many of the present provisions of the Army Act of the United Kingdom and of the new Canadian National Defence Act are forecast in them. The earliest Articles of which we have any record are those issued by Richard I to his Crusaders. Most of the offences dealt with in Richard's Articles are prescribed as offences in the National Defence Act, but the punishments for them are no longer barbarous. For instance, Richard dealt with the serious military offence of stealing from a comrade by providing that if one of his Crusaders was guilty of this crime, his head was to be shaven and over it was to be poured a pot of boiling pitch. He was then to be put ashore at the next port, where his decorations would be self-explanatory and would enable him and his crime to be known to all men.

In 1689 the first Mutiny Act was passed. It is only from that date that there existed a permanent code of military law making it possible for the King to maintain a standing army in England in time of peace. In addition to the Mutiny Act the King could still exercise his prerogative to issue Articles of War. This dual system of military law persisted until 1803, when the royal prerogative was merged into an act of Parliament known as the Army Act and a system was developed that persists to this day, that is, an act of Parliament governing each of the services and establishing a code of military law applicable both in peace and war.

A code of law is ineffective unless there are courts charged with the duty of enforcing it. It has therefore been necessary from the earliest times to have military courts to enforce military law. Such a court was first set up at the time of William the Conqueror. It was known as the Court of Chivalry. In addition to administering military law, it had jurisdiction over matters of honour, armourial bearings and other matters of that nature. Its members were the two highest mili-

tary officials in the land, the Lord High Constable and the Earl Marshal. The Lord High Constable was the Chief General of the King, equivalent to the Chief of staff of a modern service and the Earl Marshal was the forerunner of the present Adjutant-General. The court came to be known as the Court of the Constable and Marshal and it is from the Marshal that courts martial derive their name. The Court of Chivalry existed until 1521 when the office of the Lord High Constable was discontinued, its encumbent, the then Duke of Buckingham, having been beheaded by Henry VIII. Subsequently, military law was administered by what might be called a permanent court martial appointed by the King to accompany the army and to administer law each time Articles of War were issued. From this basis our present system of courts martial in the army and air force has been developed.

Naval law goes back to the time of Richard I, who laid down a code of law to govern a fleet raised by him for a crusade. There was in early times no fixed code of naval law. For each expedition the Lord High Admiral or the Commander-in-Chief issued regulations for the punishment of offences and the maintenance of discipline. These were characterized by the considerable summary powers of commanding officers and the severity of the punishments prescribed. No formal provision seems to have been made for courts martial, but councils of war appear to have been contemplated to advise the commander in connection with serious offences and it is probably out of these bodies that naval courts martial grew. The Royal Navy, as a regular force, dates from the time of Henry VII, but it was not until the Long Parliament that an attempt was made to codify the naval disciplinary system. In 1648 ordinances were enacted authorizing the Lord High Admiral and his Council of War to inflict punishment "according to the Civil Laws, Law Martial and Customs of the Sea". In 1653, provision was made for councils of war of captains or other officers attended by a judge advocate to try members of the Navy and army at sea who had offended against the Articles of War. In 1661 Articles of War were passed by Parliament laying down a code of laws for the enforcement of discipline in the navy. This Act, for the first time, referred to a naval court as a court martial. The naval code, which had been amended on several occasions since 1661, was consolidated in 1749. In 1880 an act, which may be considered as the first edition of the present Naval Discipline Act, was passed. This legislation retained the principal features of the 1749 Act, but modified the severity of some of the punishments to conform with the civil law.

When the Royal Air Force was formed at the conclusion of the First World War, the Air Force Act was passed by the British Parliament. It is in practically the same terms as the Army Act and applies to the Royal Air Force the same code of service law as applies to the army.

Throughout their history, the people of England have taken great care to ensure that the armed services should never take control of the civil government, as has happened so often in other countries. Such care was not considered necessary in the case of the navy since it was out of England. The Naval Discipline Act is, therefore, a permanent statute, but the Army and Air Force Acts are only in force for one year and, if they were not renewed annually by Parliament, the whole system of military law in the United Kingdom would collapse and the army and air force would disintegrate. The Canadian Parliament did not think it necessary to perpetuate the system of an annual act in The National Defence Act, since modern methods of financial control give Parliament the final word as to the size and composition of the forces. If supply is not voted each year, the forces cannot be maintained, for there would be no money with which to pay the men or purchase supplies. In Canada, therefore, Parliament under the National Defence Act has the same effective control over the forces as has the United Kingdom Parliament under the Army and Air Force Acts.

The Judge Advocate General

The history of the Office of the Judge Advocate General is interesting in that it illustrates the growth of the military legal system. Articles of War issued in 1639 by Charles I contain the first mention of the Judge Advocate General. They gave the Council of War and the Advocate of the Army authority to inquire into offences committed in the army. Orders issued in 1662 by Charles II gave authority to the "Judge Advocate of the Forces" to take informations and depositions, as occasion should require, in all matters triable before a court martial. After the passing of the Mutiny Act in 1689, the Judge Advocate General acted as legal adviser in all matters to the Commander in Chief. He and his deputies advised on the charges and the evidence in cases of difficulty before a court martial was convened. Provision was also made for the attendance of a judge advocate at general courts martial both as a prosecutor and as legal adviser to the court. This combination of duties came to be regarded as undesirable and the judge advocate gradually ceased to act as prosecutor. It was not, however, until 1860 that it was provided that the judge advocate should no longer be the prosecutor. For over a century before 1893, the Judge Advocate

General was a privy councillor, a member of the government and usually a member of parliament. He had direct access to the Sovereign on matters pertaining to his office. In 1893 the office ceased to be a political appointment and from that year until 1905 was held by the President of the Probate, Divorce and Admiralty Division of the High Court. In 1905 it was decided that the office should in future be filled by a person having suitable legal attainments who would be subject to the orders of the Secretary of State for War. In 1948, a further change was made and the Judge Advocate General in the United Kingdom was made responsible to the Lord Chancellor and given largely judicial, as distinct from advisory and administrative functions.

In Canada, the Judge Advocate General is responsible to the Minister of National Defence and, as well as exercising judicial functions in connection with courts martial in the navy, army and air force, acts as legal adviser to the Department, the three services and the Defence Research Board. He is assisted by three deputies, one from each service, and a staff of officers stationed in Ottawa and at key centres throughout Canada where acting for him, they sit as judge advocates on courts martial and advise service commanders on legal questions.

History of Defence Legislation in Canada

The first military force organized in Canada was the Canadian Army. It was organized under the Militia Act which was passed by the Parliament of Canada in 1868, the year after Confederation. The present Militia Act is chapter 132 of the Revised Statutes of 1927, and it is substantially the same Act as the one enacted in 1868. It has become, because of changed conditions, quite inappropriate as a basis for the organization of the Canadian Army and very little of it has been carried forward, without substantial change, into the National Defence Act.

The first Naval Service Act was passed in 1910, when the Royal Canadian Navy was organized. Under it discipline was administered pursuant to the provisions of the Naval Discipline Act of the United Kingdom. It remained the basic statute of the Navy until 1944, when a new Naval Service Act was passed. This Act differs materially from the Militia Act and the Royal Canadian Air Force Act, in that it contains a Canadian disciplinary code for the Navy. The disciplinary codes in force in the United Kingdom Army and Air Force, as embodied in the Army Act and Air Force Act, respectively, are applied to the Canadian Army and Royal Canadian Air Force by the Militia Act and the Royal Canadian

Air Force Act. The naval disciplinary code embodied in the Naval Service Act was used as the basis for drafting many of the sections of the National Defence Act.

The first legislation dealing with the Royal Canadian Air Force was the Air Board Act of 1919, the title of which was changed in 1927 to the Aeronautics Act. This Act dealt not only with the Royal Canadian Air Force but also with civil aviation. The Aeronautics Act is still on the statute books but the Royal Canadian Air Force is now organized and administered under the Royal Canadian Air Force Act, which was first enacted in 1940.

Until 1922, each service also had a separate civil administration. The Army was administered by the Department of Militia and Defence, the Navy by the Department of Naval Service, and the Air Force by the Air Board. In 1922, Canada took its first step towards service unification when the Department of National Defence Act was passed. This Act set up one civil department of government, the Department of National Defence, to administer the three armed services.

Before the enactment of the National Defence Act in 1950, anyone who wished to ascertain the law as it applied to the Canadian forces had to look at no less than six basic statutes, the Militia Act, the Naval Service Act, the Royal Canadian Air Force Act, and the Department of National Defence Act, all acts of the Parliament of Canada, and the Army Act and the Air Force Act of the United Kingdom.

Purpose of The National Defence Act

The purpose of the National Defence Act was clearly explained by the Honourable Brooke Claxton, Minister of National Defence, when he introduced the Bill in the House of Commons on April 18th, 1950. On that occasion he said:

> The purpose of the legislation is far more than simply to consolidate existing defence measures. The purposes are:
>
> (1) to include in one statute all legislation relating to the Department of National Defence and the Canadian forces;
>
> (2) to have a single code of service discipline so that sailors, soldiers and airmen will be subject to the same law;
>
> (3) to make all legislation applicable to service personnel, Canadian legislation;
>
> (4) to obtain uniformity in the administration of service justice;
>
> (5) to provide a right of appeal from the finding and sentences of courts martial;
>
> (6) to abolish field general courts martial;
>
> (7) to provide for a new trial on the discovery of new evidence;
>
> (8) to provide in the administration of the department more efficient and expeditious means for the transaction of routine business;
>
> (9) to establish the position and functions of the chiefs of staff;
>
> (10) to abolish, as obsolete, provisions for levee en masse and enrolment by ballot; and
>
> (11) to authorize the employment of the regular forces to meet a national disaster, such as a major flood, and to permit the use of reserve forces for these purposes.

The National Defence Act represents some three years of study by officers of the Department and of the services. In drafting the new Act, advantage was taken of the investiga-

tions into service law that were conducted in the United Kingdom and United States, and many of the recommendations made by the investigators there were embodied in the Act.

The drafting of an entirely new and comprehensive bill such as the National Defence Act was an intricate and formidable task. It was undertaken by a group of service legal officers under the supervision of the then Judge Advocate General, Brigadier R. J. Orde. This group was assisted by a senior officer of each of the services who was in a position to advise authoritatively on the various service considerations that arose during the preparation of the Bill. Meetings were held almost daily between the service advisers and the draftsmen over a period of many months. Every section of the new Bill was thoroughly discussed and, in many instances, drafted and redrafted at these meetings. When the first draft was completed, the whole Bill was gone over by the draftsmen with senior counsel of the Department of Justice and further changes made. All provisions having financial implications were examined by the Department of Finance. The Minister, who is a lawyer with considerable experience in and a great knowledge of military law, carefully studied every section and made many valuable suggestions, as did also Colonel Hugues Lapointe, the present Minister of Veterans Affairs, then Parliamentary Assistant to the Minister of National Defence, and Mr. C. M. Drury, the Deputy Minister.

The Bill, having been drafted in final form, was introduced in the Senate by the Minister on November 8th, 1949. This incident is of interest in that it was only the second occasion on which a Minister of the Crown who was not a member of the Senate appeared on the floor of the Senate to introduce a government bill. The Bill was referred by the Senate to a standing committee of experienced senators. This committee examined the Bill clause by clause and made many useful suggestions for its improvement.

The Bill was passed by the Senate, but it was not possible to get it before the House at the 1949 session. It lapsed and had to be reintroduced at the first session of 1950. At that session it was introduced in the House of Commons and a Special Committee on National Defence, under the chairmanship of Mr. R. O. Campney, now Parliamentary Assistant to the Minister of National Defence, was set up to examine the Bill. This Committee was composed largely of members who had seen military service. It sat almost daily for several weeks and examined the Bill clause by clause. Many valuable amendments were suggested by the Committee and incorporated in the Bill. The Committee reported favourably on the Bill and it was

passed by the House of Commons and the Senate, and on June 30th, 1950, received Royal Assent. Royal Assent did not bring the whole of the National Defence Act into effect, however, since section 251 of the Act provides that apart from the five sections mentioned in it, the Act should only come into force on the day or days to be fixed by proclamation of the Governor in Council. Sections 1, 211, 248, 249 and 250 came into force on the passing of the Act; sections 2 to 14 inclusive, 53, 54, 55, 190, 195, 205 to 210 inclusive, 212, 213, 214, 228, 229, 230, 238, 244, 246, and 247, on August 1st, 1950; sections 15 to 37 inclusive, 47 and 48, on August 7th, 1950; and sections 38, 42, 46, 50, 51, 52, 57, 61, 62, 126, 150, 154, 155, 156, 159, 161, 163, 166, 167, 182, 183, 199, 200, 215, 216, 231 to 237 and 239 to 243 inclusive, and 245, on February 1st, 1951. Before all the Act could be brought into effect, the new King's Regulations required to implement it had to be written. These could not be prepared before the Act was passed because they were dependent upon the provisions of the Act. The Regulations have now been completed and it is expected that they will shortly be approved and issued to the forces. When this is done, the remainder of the National Defence Act will be proclaimed and the three Canadian forces will be wholly administered under this new Canadian statute and the new regulations.

The National Defence Act

The National Defence Act is an attempt to amalgamate in one statute all legislation relating to the Canadian Forces and to unify in so far as is possible, having regard to differing conditions of service, the fundamental organization, discipline and administration of the three armed services. The Act is divided into three divisions, thirteen parts and 251 sections. The first division deals with organization for defence, the second contains the Code of Service Discipline and the third the general rules respecting defence.

Part I deals with the Department of National Defence and replaces the Department of National Defence Act. In it provision is made for the organization of the Department, the appointment and powers of the Minister, the deputy ministers and other civilian employees, and the appointment of a judge advocate general. Probably the most interesting feature of this Part is the provision for additional ministers and deputy ministers in time of war or other emergency. Two possibilities are contemplated. One is the appointment of additional ministers of National Defence, all of whom would have equal status and among whom would be divided the powers vested in the Minister by the Act, probably on a service basis.

This was the scheme adopted during the Second World War. The second possibility is the appointment of associate ministers who could be ministers of the Crown but subordinate to the Minister of National Defence. This is the system now in use in both the United Kingdom and the United States, in each of which there is a minister of defence with three subordinate ministers or secretaries, one in charge of each of the three services. By section 13, the Governor-in-Council and the Minister are given very wide powers to make regulations for the organization, training, discipline, efficiency, administration and good government of the forces, and generally for carrying the purposes and provisions of the Act into effect.

Part II of the Act deals with the constitution of the Canadian Forces. The Canadian Forces are defined as the naval, army and air forces of His Majesty raised by Canada. They consist of three services, the Royal Canadian Navy, the Canadian Army and the Royal Canadian Air Force. Each service is divided into two components, the regular or full-time service component, and the reserve or part-time service component. Provision is also made for the constitution in an emergency of an active service component in which the regular and reserve components, together with persons enlisted from civil life, could be placed. The numbers in each component are controlled by the Governor-in-Council. Section 19 provides for the appointment and powers of the chiefs of staff and a chairman of the chiefs of staff committee. The Chairman of the Chiefs of Staff Committee and the three chiefs of staff are the principal service advisers to the Minister. The chairman is responsible for the co-ordination of the training and operations of the Canadian Forces. The chiefs of staff are charged with the control and administration of their respective services and are the medium through which the orders and instructions required to give effect to the decisions and directions of the government and of the Minister are issued to the forces. Provision is also made in this Part for the enlistment, promotion and release of personnel by the services and for the redress of grievances. The types of service which the forces may be called upon to perform are also dealt with. The first of these is active service. All members of the forces are liable to be called out on active service by the Governor in Council in the event of war, invasion, riot or insurrection, real or apprehended, or in consequence of any action taken by Canada under the United Nations Charter, the North Atlantic Treaty or any other similar instrument for collective defence. If any part of the forces is placed on active service, Parliament, if not in session, must be summoned to

meet within ten days. The regular forces have been placed on active service under this section and in September last Parliament was called into special session to approve this and other action taken by the government to deal with the then existing military situation. In addition to their liability to be placed on active service, the regular forces are at all times liable to perform any lawful duty and the reserve forces may be ordered to drill or train periodically and may be called out on full-time service to perform any naval, army or air force duty. A third type of service is also contemplated by the Act. This is service in a national disaster. In such an event the regular forces may be used at once and the reserve forces may be used if authorized by the Governor-in-Council.

Part III of the Act deals with the constitution and organization of the Defence Research Board. The Board is composed of a chairman, vice-chairman and representative of the services, the Department, universities, industries and other research interests appointed by the Governor-in-Council. The Chairman of the Board is its chief executive officer and has a status equivalent to that of a chief of staff.

Part IV of the Act deals with the disciplinary jurisdiction of the services. The first section, 56, sets out the persons who are subject to the Code of Service Discipline. They include all officers and men, persons attached to the forces, persons accompanying the forces, spies, as well as service convicts and service prisoners notwithstanding that they may have been released from the service. From the civilian standpoint, the most interesting of these categories is "persons accompanying the forces". This category includes war correspondents and other persons who in fact live with the forces. Since, under the Interpretation Act, any expression including the male also includes the female, women in the forces are subject in all respects to the Code of Service Discipline. Provision is made, however, permitting the Governor-in-Council to limit the application of the Code to women. From the standpoint of constitutional practice, section 62 is extremely interesting. In it is set out the well established principle of the supremacy of the civil over military courts. It provides that nothing in the Code of Service Discipline shall affect the jurisdiction of any civil court to try persons for any offence triable by that court, notwithstanding that such persons may have already been tried by a military court for the same offence.

Part V of the Act sets out the service offences and the punishments for them. The offences prescribed in this Part do not differ materially from the offences prescribed in the Naval Service Act, the Army Act and the

Air Force Act. The wording has been modernized and complete uniformity achieved among the three services. By section 119 all civil criminal offences are made service offences and may be tried by service courts, but this does not affect the supremacy of the civil courts in any way. Punishments prescribed for all offences have been brought in line, so far as practicable, with punishments prescribed by the Criminal Code for similar civil offences. The distinction between punishments which may be awarded to officers and to men for various offences has been largely eliminated. Section 125 specifically provides that all defences available before a civil court shall be available to an accused before a military court.

Part VI of the Act deals with arrest and custody. Provision is made in the Part for this issue of warrants and for the appointment of service police. Under section 132 a person who is held in custody for twenty-eight days without a summary trial having been held or a court martial having been ordered to assemble is entitled to petition the Minister to be freed from custody and in any event must be freed after a period of ninety days. It is hoped that this will eliminate the delays in trials that have caused some criticism of the administration of service justice in the past.

Part VII of the Act deals with service tribunals. Under it three classes of tribunals are set up—general courts martial, disciplinary courts martial (which replace the old district courts martial in the Army and Air Force and the disciplinary court in the Navy) and commanding officers and superior commanders with power to try accused persons summarily. General courts martial have power to try any person subject to the Code of Service Discipline for any service offence and to impose any punishment prescribed by the Act. Disciplinary courts martial are limited by the Act in the punishments they can award and may be limited by regulations as to the persons they may try and the offences with which they may deal. Commanding officers have power to try men serving under their command and to award minor punishments, and superior commanders have power to try junior officers and warrant officers summarily and to award minor punishments. Provision is made for the appointment of judge advocates and for their powers, duties and functions. An interesting feature of the new Act is that findings and sentences of courts martial are no longer subject to confirmation. Findings and sentences are now to be pronounced at the conclusion of the trial and the sentence commences to run immediately. They are still subject, however, to review by superior authorities in the service. An interesting new departure is made in section 163, which provides that a

court martial may, at the request of the offender and in its discretion, take into consideration, for the purpose of sentence, other service offences similar in character to the one the offenders has been found guilty of, which are admitted by him, and impose punishment in respect of those offences. If this is done, the offender is not liable to be tried again for the similar offences he has admitted.

Part VIII contains a number of provisions applicable to findings and sentences after trial. Provision is made here for quashing of findings and mitigation, commutation and remission of punishments by senior authorities.

Part IX is one of the most interesting parts of the Act. It provides for a right of appeal to a civilian court known as the Court Martial Appeal Board. This Board has recently been established under the chairmanship of the Honourable Mr. Justice Cameron of the Exchequer Court of Canada. The other members of the Board are Mr. D. K. MacTavish, Mr. B. M. Alexandor, Mr. Louis Audette and Mr. Leonce Plante. Any person convicted by a court martial has the right to appeal to the Board on any question relating to the legality of all or any of the findings of the court or the legality of the whole or any part of the sentence. Counsel may appear before the Board to argue the appeal in the same manner as before any other court of appeal. Any three members of the Board may hear an appeal. It is contemplated that in time of peace only one tribunal of the Board will be required for appeals, but that in war several tribunals will be set up at convenient places both in Canada and overseas so that appeals may be heard and disposed of speedily. On the hearing of an appeal the Board may set aside any or all findings or direct a new trial. If they find the sentence to be illegal they are not empowered to substitute a new sentence but must refer the proceedings to the Minister or such authority as he may appoint, who may substitute a new sentence. A further appeal is permitted to the Supreme Court of Canada, with leave of the Attorney General, where there has been dissent in the Board. The accused is also given the right to appeal against the severity of the sentence, but this appeal is dealt with by the service authorities, since it is considered that only they can appreciate the service considerations affecting the sentence. Apart altogether from the right to appeal to the Court Martial Appeal Board, the Judge Advocate General is charged with the duty of reviewing the proceedings of all courts martial, whether or not an appeal has been taken, and of advising the chiefs of staff of the services as to what, if any, action should be taken to quash the findings or to mitigate, commute or remit the

sentence. The accused is also given the right to petition for a new trial on the ground that new evidence is available that was not available at his trial. The Judge Advocate General is also charged with the duty of examining such petitions and referring them with his recommendations to the appropriate chief of staff, who may order a new trial.

Part X contains miscellaneous provisions of general application. Such matters as the conduct of witnesses and counsel at courts martial, disposal by civil authorities of deserters and absentees without leave, the imprisonment of service offenders in civil prisons, the conduct of manoeuvres, emergency powers in relation to property, salvage and limitation of civil liability are dealt with.

Part XI deals with the important subject of aid to the civil power. Very little change in substance is made from the provisions formerly contained in the Militia Act, which have proved satisfactory in the past. Liability to aid the civil power is however extended to both the air force and navy as well as the army, although it remains primarily an army responsibility and a matter for overall direction by the army authorities.

Part XII contains a number of sections which, since they establish civil offences that may be committed by any person in Canada in relation to the services, might appropriately be in the Criminal Code. They deal with false answers on enrolment, false medical certificates, personation, interruption of drill or training, hampering manoeuvres, assisting or harbouring deserters and other miscellaneous offences.

Part XIII contains certain unrelated special provisions which can ultimately be dropped from the Act. Section 250, which deals with the repeal of the existing legislation, provides that it may be repealed by proclamation of the Governor-in-Council. This provision was necessary because the services have had to operate under the old legislation pending the completion of the new regulations and proclamation of all the new Act.

The National Defence Act effects three major changes in Canadian military law. These are:

(1) Canada's armed forces will henceforth be governed entirely by Canadian law and not in part by the law of the United Kingdom. In the future, when a Canadian soldier is accused of theft, the charge against him will be framed under the Criminal Code and not under the English Larceny Act; at his trial Canadian and not English rules of evidence will be applied and, if he is convicted, the sentence will be that prescribed by Canadian and not by English law. The National Defence Act provides a single source of statutory law relating

to the armed forces and it will no longer be necessary to refer to several Canadian and United Kingdom statutes to ascertain the law.

(2) The same code of service discipline will apply to all servicemen irrespective of the service to which they belong or whether they are officers or men. Although in the past the army and air force have been subject to very similar codes, the naval code has differed materially. Under the National Defence Act only a few minor differences, necessitated by differing conditions of service, remain. The punishments prescribed for officers and men are the same and have been brought into line, so far as practicable, with those prescribed by the Criminal Code.

(3) The administration of military law will be subject to review by a civilian court of appeal and, in certain circumstances, by the Supreme Court of Canada. Lawyers will appreciate the salutary and far-reaching effect the right of appeal will have on the whole administration of military law.

It is likely that as the Canadian forces grow, as it seems they inevitably must under existing world conditions, the subject of military law will become of increasing interest to members of the legal profession in Canada. Many lawyers will be called upon to appear before courts martial and the Court Martial Appeal Board as counsel and to advise their clients on matters of military law. It is important that lawyers practising in this field should appreciate that military law is not, as many seem to think, a code of law separate and apart from the ordinary law. It is an integral part of the law of the land based on the same fundamental principles of justice and giving the same protection to an accused as our civil law.

BRITAIN'S ARMED FORCES

Britain's armed forces are rapidly approaching the million mark. Regular forces, made up of professionals and conscriptees, number nearly 800,000. Territorial and auxiliary services contain about 150,000 trained men. In addition, numerous reserves will be called up for refresher training this summer. The Army will call up 235,000 specially trained men for 15 days' duty. The Royal Air Force will call 11,000, 1,000 of these for three months' duty, and the Royal Navy call will 6,600, all of these for 18 months' service. The 4,000,000 veterans of World War II have not been formally demobilized and serve as an additional reserve. — *Marine Corps Gazette (U.S.).*

RATION RUN— KOREA STYLE

By
MAJOR D. L. BURLESON,
DEPUTY DIRECTOR OF PUBLIC RELATIONS (PHOTOS), ARMY HEADQUARTERS,
OTTAWA *

The old adage that "an army marches on its stomach" has been true for centuries. Today, it applies equally well to United Nations' troops in Korea.

However, a new twist has developed. Royal Canadian Army Service Corps transports are literally rolling on their stomachs to move the rations forward and keep the Canadians marching.

Main supply bases for both British Commonwealth and United States troops are located in Pusan, southern gateway to the peninsula. Spider-webbing north to the 38th parallel are two "main arterial highways", the "Red Diamond Route" and the "Green Diamond Route".

Neither route is paved. Neither route is much more than 12 feet wide at any point. Neither route is very highly recommended for tourist travel!

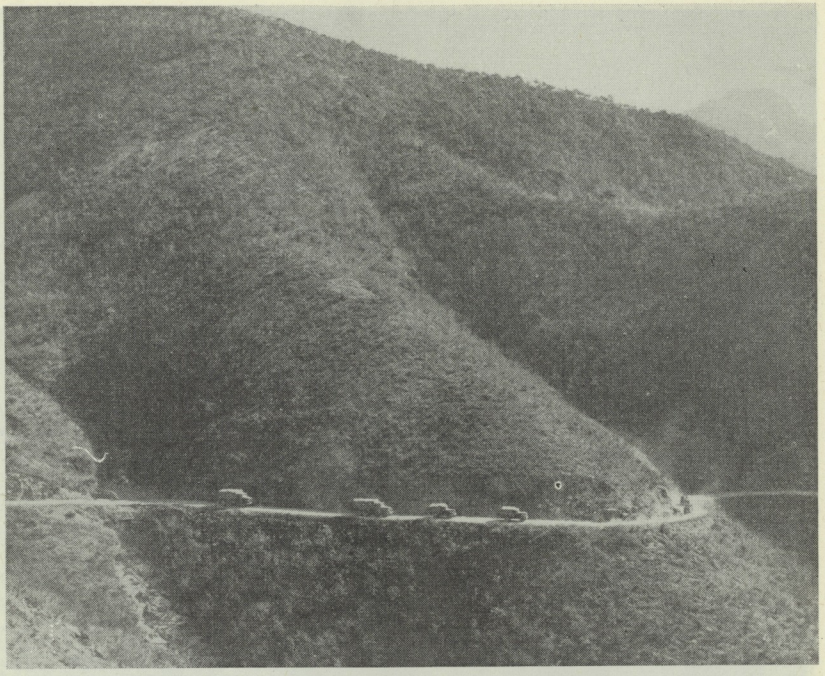
Skirting the fringe of guerilla territory, each road becomes a ribbon of muck during the spring rains and a treacherous trail of ice during the winter months. The cliff-climbing roads wind around steep Korean hills, dropping sharply into picturesque valleys. In places they snake through one-way tunnels and bounce over railway bridges on the 200-mile run to the front. One hundred miles is considered fair distance for a day's run in convoy.

Over one of these rough routes on alternating days, Captain Gordon Boothe, MC, RCASC, Ottawa (who operates a transport section in Pusan),

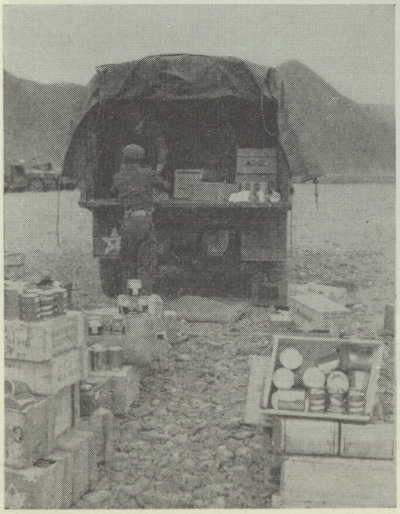
(*Continued on Page 21*)

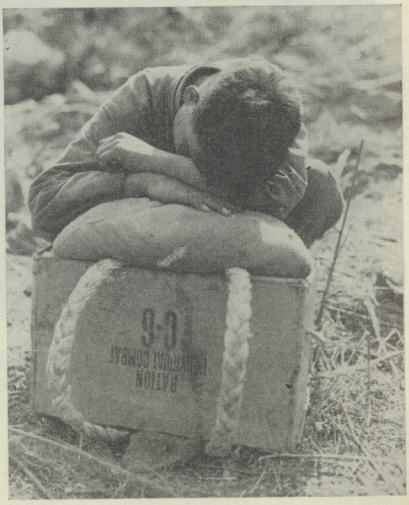
* *Formerly with No. 25 Canadian Public Relations Unit (Special Force), the author spent 3½ months in the Far East with the Canadian Military Mission based in Tokyo, from which base he made periodic liaison trips to the Second Battalion, Princess Patricia's Canadian Light Infantry, in Korea. While in Tokyo he helped to organize the* Forces' Edition of Japan News *and the* Commonwealth Broadcast of Home News *for the benefit of Canadian troops in Korea. On his return to Canada recently he was given his present appointment as D/DPR (Photos) in the Directorate of Public Relations (Army).*—Editor.

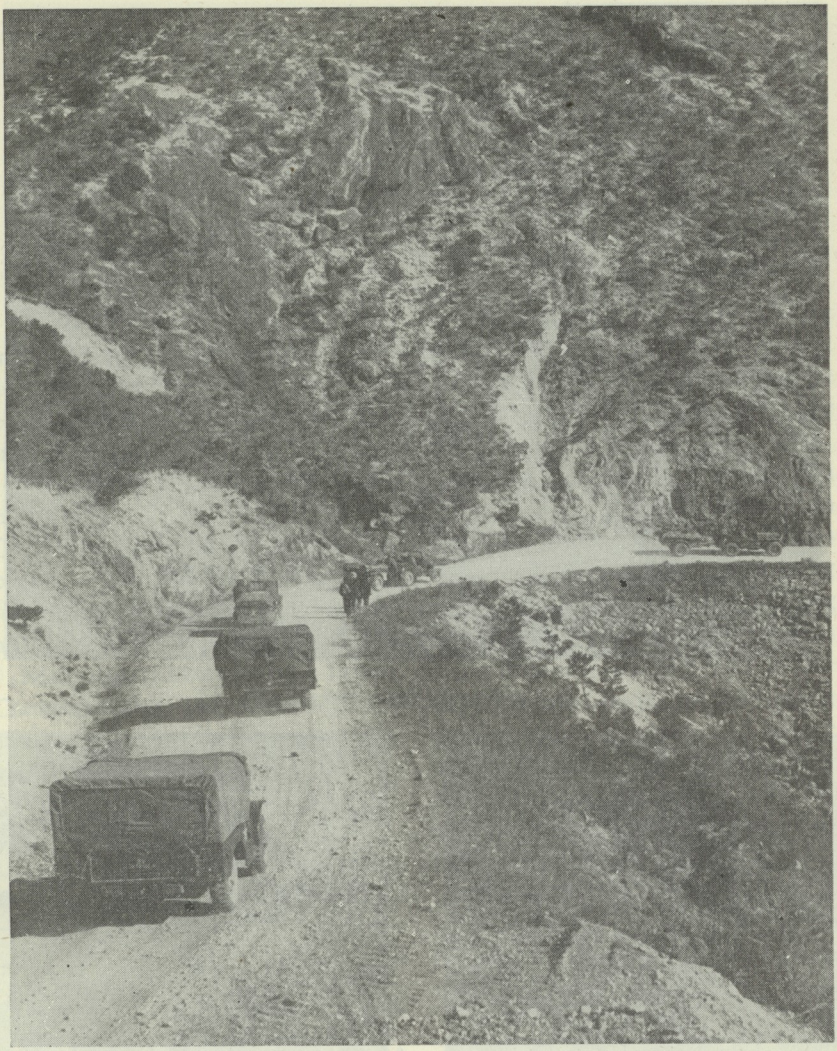
Top: RCASC "ration run" moving over the Red Diamond route. Enemy snipers are a constant threat. *Bottom Left:* Canned and fresh rations are unloaded in a rear echelon. *Bottom Right:* A South Korean boy rests while carrying a heavy carton to forward Canadian troops. (The "boy" is 19.)



National Defence Photos







National Defence Photo

Cliff-climbing and winding, almost every turn on this trail offers a spot for ambush by guerilla bands who roam the hills.

National Defence Photo

A human pack train: South Koreans carry compo rations from forward bulk breaking points to company areas. This work means extra food for the labourers.

National Defence Photos

Narrow, muddy roads, not built to carry the heavy traffic of mechanized warfare are a hazard for jeeps and trucks during spring rains in Korea. Vehicle recovery during this season is a 24-hour job every day of the week.

sends the supply run. Drivers move off in close convoy at dawn, never travelling alone and generally carrying two men in the lead vehicle. The trip to Taegu will take the full day.

From Taegu, supplies move forward to 27 Commonwealth Brigade in a number of ways. Railroads are used to some extent and, where necessity demands, supplies are dropped from the air.

During their training period in the Miryang area, 2 PPCLI were provided mainly with fresh rations of a very high standard. Menus that included such battlefield luxuries as shrimp and roast turkey were not uncommon. Dehydrated potatoes put in their inevitable appearance, but in a much more palatable form than during the Second World War.

The U.S. Army is supplying all fresh rations used by United Nations troops, and the bulk of combat rations. Recently, Commonwealth troops changed to "compo" field rations from British resources, with fresh rations coming up periodically or during rest periods behind the lines.

Catering to the eating peculiarities of the many nations fighting under U.S. Eighth Army command in Korea posed many difficult problems for the American Quartermaster Corps. The situation became so serious that the U.S. Army formed a special "catering team" to study the eating habits, likes and dislikes, of the many nationalities they were required to supply.

The Turkish troops, because of religious beliefs, will not eat pork. U.S. Army field rations contain a considerable amount of pork and pork products. It was necessary for the Americans to package a special field ration in Japan for issue to the Turkish brigade; this special ration contains mainly mutton or beef and the inevitable heavy spices.

Moreover, Turks will not eat margarine. They must have butter which is left in the open until it turns rancid before eating.

Indian troops must have their curry powder and rice. Phillipinos, Thailanders, etc., prefer heavily spiced foods and strong brands of tea or coffee.

Canadian and British troops subsist very well on the U.S. type of rations, but normally require extra issues of tea and potatoes.

The complexities of integrating supply lines, providing the amazing variety of rations and amenities to meet the tastes and peculiarities of so many nationalities, constitute problems perhaps never faced before within a single army. Yet in Korea these difficulties are being overcome with great success.

Few troops have ever been fed so well in battle, or at rest in a battle area, as those serving under the United Nations' flag in Korea.

WHAT IS TANK COUNTRY?

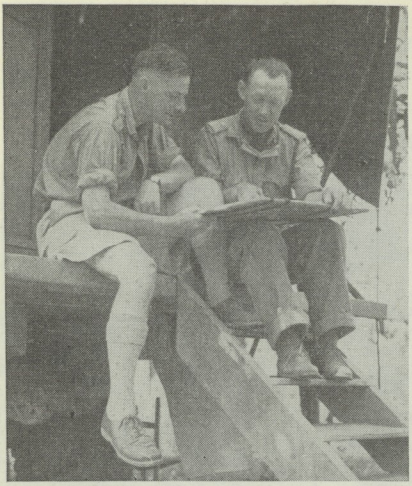
By
BRIGADIER WILLIAM MURPHY, CBE, DSO, ED*

In the early days of the Korean conflict a fact came to light which was surprising, to say the least, to many Canadian tankmen of the last war. The old and hoary question of what is and what is not tank country seems to have reared its ugly head at the time American officers were training the South Korean army against the day when American troops would be withdrawn. It appears, if the reports on the matter can be given credence, that the officers responsible for the organization of the South Korean forces decided that a tank element was not necessary, on the ground that Korea was no place for tanks.

The writer has not had the opportunity of personally surveying the terrain of that distressed country, but from relief maps, photographs and reports of present operations it would appear that a large portion of the peninsula is mountainous. As in most mountainous countries it has valleys, some broad, some narrow. Communications are fairly primitive, there being a lack of roads and very little in the way of railways. Roads generally follow the valleys. Rice is grown fairly extensively, which suggests a good deal of soggy ground, at least during some parts of the year. Doubtless it was these factors which lead the Americans to decide that tanks would be an expensive luxury rather than a practical weapon of war.

Apparently the Russians, responsible for the organization and training of the North Korean forces, took exactly the opposite view. Tanks were used in the initial stages of the North Korean attack, and, it would appear, spread considerable alarm and despondency among the tankless South Koreans, and later the American infantrymen rushed in to slow up the advance. No one can blame them for their poor view of the situation. Most infantrymen who have been up against tanks, having no tank support

*The author commanded the 1st Canadian Armoured Brigade in Italy and Northwest Europe until the cessation of hostilities. In 1946 he was appointed to command the 22nd Armoured Brigade (Reserve Force), and since July 1950 has been on the Supplementary Reserve. A King's Counsel with the degrees of B.A. and LL.D., he is at present a partner in a Vancouver law firm.—Editor.



Canadian Army Photo

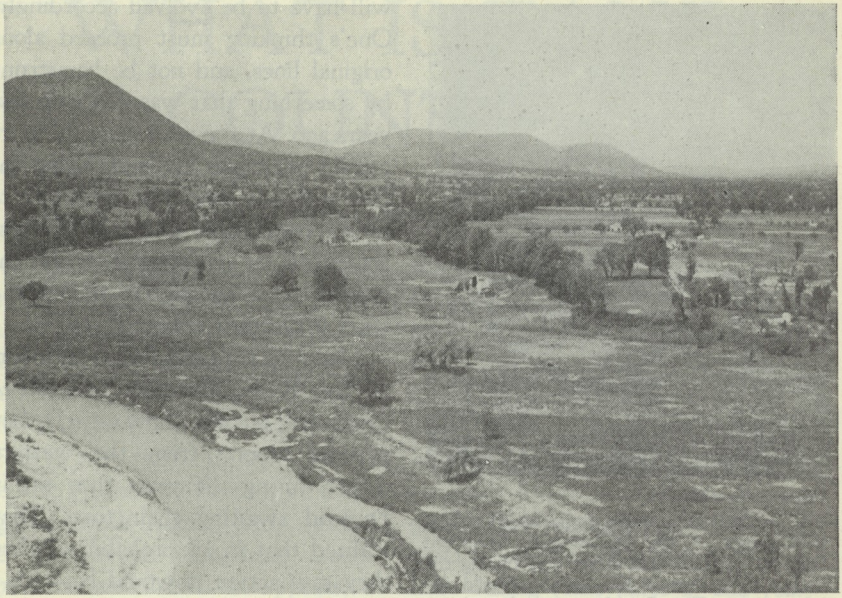
The author, left, briefs Brigadier Ruddick, Commander of the 9th British Armoured Brigade, on the Melfa River area during the Italian Campaign in the Second World (27 May 1944). The British unit relieved 1st Canadian Armoured Brigade.

themselves and little in the way of effective weapons to meet heavily armoured vehicles, have probably had similar feelings. It turned out that tanks could be used effectively in Korea, and a considerable number of United Nations tanks have been moved to that country.

To return to the opening sentence of this article, it is hard to understand how the initial mistake was ever made. When one remembers the lessons of the war that is past, and contemplates applying them to a war of the future, he must be careful indeed. Future war will usually be fought with many new weapons. New tactics will have to be evolved accordingly. One's thinking must proceed along original lines, and not be hamstrung by something that was proper a few years ago. At the same time there are certain principles evolved during the past war that should be applicable to future operations, and one of these principles, it is suggested, is the answer to the question of what is and what is not tank country.

Many serving and former members of the Royal Canadian Armoured Corps will recollect how eagerly they perused reports from the western desert during the years they sat in England awaiting their turn. They realized that in all probability when they saw action it would be with a better vehicle and in totally different country. But the only reports available, so far as tanks were concerned, dealt with their use in the desert. Such country permitted commanders to exploit the mobility of this particular weapon to the full, and it played a great if not predominant part in every victory won, no matter by which side. In very rocky country, or where the going was too soft, tanks could not operate, but there was

Another aspect of tank warfare (and to some extent an answer to Brigadier Murphy's argument) is dealt with in an article "Don't Jump to Tanks" by Lt. Col. W. R. Kintner of the United States Army. It will be published in the next issue of the Journal.—*Editor.*



Canadian Army Photo

An Observation Post view of the Hitler Line and the area near Pontecorvo (24 May 1944).

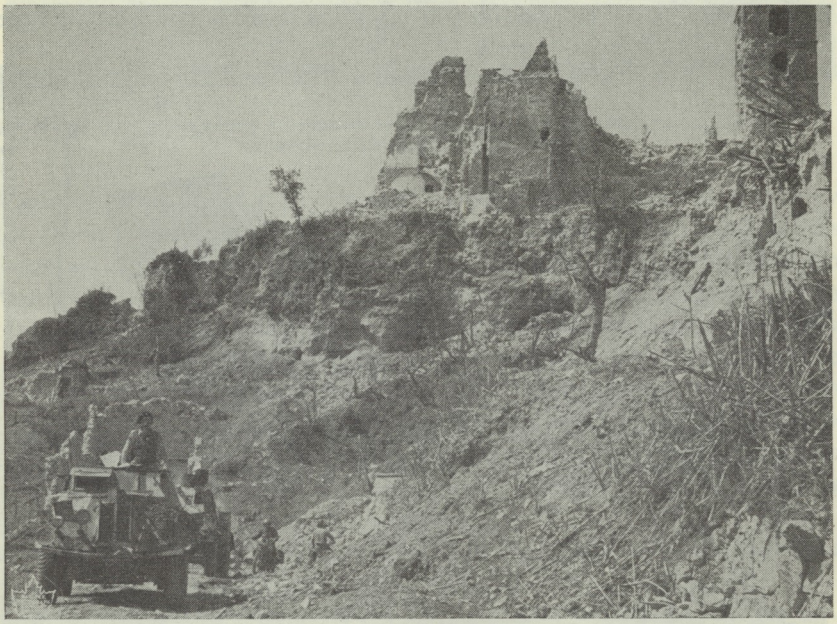
always plenty of other portions of the front where the going was good. Thus the question of what was, or what was not, tank country did not receive the early consideration that it otherwise might have.

When Canadian tanks landed in Sicily it was soon realized that this mountainous country called for far different tactics, so far as tanks were concerned, than did a wide open country such as the desert. In almost every case the infantry were the predominant arm and the tank's job was to support them to the best of its ability. Both arms had much to learn in actual warfare in difficult country, and it was hardly surprising that infantry thought tanks should do more than they were prepared to do, and the tanks thought infantry were hopelessly ignorant of the tank's capabilities. To begin with, neither really appreciated what a tank could or could not do to give the infantry a helping hand in the varied country that was fought over. Nor did either realize the tremendous help that infantry could afford tanks in close going.

Italy, with its mountains, valleys, olive groves, vineyards, crops, walled cemeteries, and other detestable features (that is, from a tank point of

view) further complicated relations between the two arms. After all, the infantry wore cloth jackets, and the tankmen had several inches of steel to protect them, so why should not the tanks fight where the infantry had to go? But at first the tank men were reluctant. Their steel was not much good against the well-concealed anti-tank gun or the boldly handled infantry anti-tank weapon. In close country they could not see them and therefore could not protect themselves. The gunner's telescope was masked by olive groves and vines, and he was unable to give effective support to the infantry in any event. So the inter-service battle raged, and at times there was considerable feeling between the two arms.

But experience was bearing fruit. The tank men, who had been taught that tank country was that country which afforded the best going, and contained successive features permitting good fields of fire from hulldown positions, and support, tank by tank or troop by troop, began to learn that it was just such country that was the best protected by anti-tank weapons.



Canadian Army Photo

Vehicles of the 4th Princess Louise Dragoon Guards pass by the ruins of a church in the town of Pontecorvo after advancing through the Hitler Line (24 May 1944).

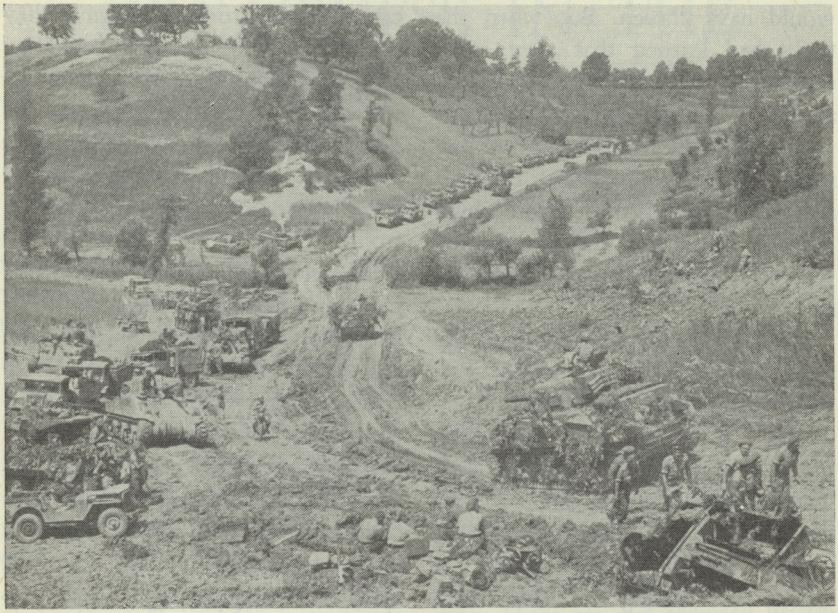
Few forces can have sufficient tank stoppers to be strong in them at all points. The anti-tank weapons were usually concentrated to cover the best tank approaches. The tank men started to experiment. They found they could climb slopes they thought were impossible. It was just a matter of skillful driving. They found that much rocky ground could be traversed with care and attention. They found that even terraced hills could be topped by driving the terraces until a low point was found and then charging a path to the next terrace, and so on. Sunken roads and other obstacles could be overcome by the use of explosives, so they took along tank sappers, trained in demolition and mine clearance, and carried them in cut-down Honeys moving with squadrons. They used the tank dozer well forward to help clear the way where necessary.

Time and again they found these tactics won them that pearl beyond price—surprise—and soon they were looking not for good going, but the going where only skill and experience could get them through.

The policy was laid down, at least in the writer's formation, that every request of the infantry must be met if it was humanly possible to get the

Canadian Army Photo

A 1st Canadian Armoured Brigade tank moves up Route No. 6 in pursuit of fleeing Germans during the push on the Melfa River (25 May 1944).



Canadian Army Photo

Tanks move down a steep hill enroute to the front between the Gustav and Hitler Lines in the Liri Valley (24 May 1944).

tanks over the ground. The response of the infantry was immediate. As soon as they found the tanks were ready to take on almost anything, their confidence in the tank men firmed, and the two started to work together in a most satisfactory manner. In not one single instance did the writer find that infantry, once assured of the tank men's real desire to help, took unfair advantage of that cooperation.

It was soon realized by all concerned that each arm had its own particular tactics. If tanks stopped to bring fire to bear on a position, the infantry quickly learned that they were not quitters, but that this was the very moment for them to press on under cover of that fire. They soon got to know that regardless of how close the country, the tanks were right behind them, depending on them to winkle the concealed anti-tank weapons, and ready to forge ahead when more open country was reached.

The infantry normally preferred country which gave them the maximum in covered lines of approach, although often this was not the direction of attack the tank men

would have chosen. But when the tanks had learned that they could depend on the infantry, and so long as they could get their vehicles forward, they cheerfully accepted the infantry's choice of ground. Infantry and tank co-operation reached a high peak of efficiency, and the results were very gratifying—at least to our side.

Even in the Appennines, where the tanks were wholly road-bound, they were found more than useful. They formed a firm base from which the infantry could fan out into the hills. They brought accurate direct and indirect fire to bear when it was most needed. And it gave the infantry a comfortable feeling to have them around. And in this last remark lies one of the major points overlooked by the organizers of the South Korean army.

Infantry like to have tanks near them. Possibly the tank is blind in close country and therefore helpless, or road-bound, or blacked out on a dark night, or otherwise not much of an asset. Nevertheless, the infantry like to have them around. There is a psychological factor here which is most important and should never be overlooked.

The old practice of "rear rally" for reorganization, petrol, rations, etc., was discontinued in Italy by the writer's formation. The tanks stayed with the infantry and supplies were taken forward to them. Even if they couldn't see to fire they could lay their guns on fixed lines, and the starting up of tank engines, and the sound of their guns at night, were found to have a most satisfactory effect both on our own and the enemy troops.

The close and intimate training of tanks and infantry is essential if the best results are to be obtained. Where the tanks are to fight with well-trained infantry who know and trust them, then we have no difficulty in answering the question which forms the title of this article. Under such circumstances there is only one type of country that is non-tank country, namely, that terrain over which it is physically impossible to move the tanks even with the use of explosives, tank dozers or any other artificial aids that are available or can be improvised.

TOO FAT TO FLY

The [U.S. Army] Air Force has issued a new medical . . . directive which declares that overweight officers on flying status will be grounded until they lose the extra poundage. When an officer is found overweight, he will be placed on a diet by a flight surgeon. The regulation provides that a continued condition of overweight could result in "severe measures" against offenders.—*Army-Navy-Air Force Journal* (U.S.).

GREATNESS IN THE BRITISH SOLDIER

FIELD MARSHAL SIR WILLIAM SLIM, CHIEF OF THE IMPERIAL GENERAL STAFF*

As a soldier, I've been asked to say something about the greatest soldier I had met and known. So I'm going to. The funny thing is, I can't tell you his name. It changes. Sometimes he has an English name, sometimes Scottish, sometimes Welsh or Irish. That is because the soldier I want to talk about, the greatest soldier I've met—and, believe me, I've met a lot of all sorts—is the ordinary British soldier.

I hope you don't think it's a foul to choose as my Great Man, not a single hero but a whole group of men. Our race and our army have produced great men enough. We have had our Pitts and our Churchills, our Marlboroughs and our Wavells, but I believe their greatness, in their finest hours, was that they expressed and focussed the spirit and the qualities that infused the whole British people. Any nation, now and then, may throw up a great man, but unless its people have greatness in them, it won't cut a very noble figure at the bar of history. An army must have Generals to lead it, but if the only men in it who have the mark of greatness are the Generals, it will win few victories.

The Two Tests

To be great a man—or a people—must pass two tests. They must show greatness in character, and greatness in achievement. Now there are whole sections of our people, luckily for us large sections, which show in a special degree those marks of greatness. There are our ordinary British housewives. If you want to know what greatness of character is, look at them in the blitz; if you want to know greatness of achievement, look now at the children they raised in hardship and peril. I could do a jolly good broadcast on the British housewife, but I have to deal with someone else, great also in character and achievement—the British soldier. Think for a moment of the soldier's job. In war he has not only to fight, but in order to be able to fight at all, he has continually to perform every activity that goes on in a civilian community, and do it under the most uncomfortable, nerve-racking, and dangerous conditions. In peace he is

*This article is a reproduction of a "live" broadcast over the British Broadcasting Corporation. It is reproduced by courtesy of Field Marshal Slim and the BBC.—Editor.

often called upon to restore order or carry on essential services when these tasks have proved too difficult for the civil authority.

What qualities does he need for all this? He must have courage, lots of it; endurance, moral and physical; skill with his weapons and at the techniques of his trade—for soldiering these days is a highly skilled trade. He must be adaptable and he must have discipline. A formidable list that, but if he fails in any one of them he cannot be a good—let alone a great—soldier. As to courage, our race, whatever its faults, has never failed for want of courage. From the days of Joan of Arc down to the British soldier today on a Korean hillside, our friends, and, what's perhaps more to the point, our enemies, have picked out the British soldier as the staunchest of comrades and the most formidable of foes.

It's not that the British soldier is braver than other soldiers; he isn't, but he's brave for a bit longer, and it's that bit that counts. Endurance is the very fibre of his courage and of his character. He stays where he is until he has won. He did it at Gibraltar two hundred years ago. A few years back he was doing it at Kohima. He's ready to do it now in Korea. Many years ago, when I was a young officer, my battalion was hard pressed, and I was sent with a couple of men to get into touch with a unit which we hoped was still on our left. Worming our way from one bit of cover to the next, we eventually dropped into a trench that had been badly smashed by shell fire. Pistol in hand I scrambled over the fallen earth, through bay after bay, finding nothing but wreckage and the dead. I think I would have turned back then, but I was as frightened to go back as to go on. So I went on. At last, round a traverse, I heard voices. My heart in my mouth, I strained my ears to listen. An agitated voice was proclaiming that another attack was coming and they'd all be wiped out. There was a pause and then one of those creamy West Country voices drawled, 'Aw, don' 'ee worry. Us'n 'll beat they!' I'd found the Glosters. The British soldier in his long career has suffered so many disasters, won so many victories, that neither the one nor the other unduly depresses or elates him. Come what may, he holds to his inflexible confidence in ultimate victory. It may take a long time, it may mean all sorts of grim things, but—'Us'n 'll beat they!'

Unlike most others, the British Army has to be ready to fight or serve anywhere. Western Europe or furthest Asia, desert or jungle, it's all in the day's work. A few hundred years of that have bred in the British soldier an adaptability to climate and terrain and conditions that is one of his most valuable assets. In the same

way he takes readily to new weapons. The Britisher fights best when he can see his enemy and that's why, I think, his skill has always been high with his personal short-range weapons. He first gained international fame as a bowman whose hard driven shafts broke the armoured chivalry of France. The steady disciplined volleys of Minden, the deadly musketry of the thin red line of the Peninsula, the fifteen rounds a minute of the Old Contemptibles, down to the anti-tank gunners of the desert still firing as the Panzers rumbled over them, held this tradition of skill at arms. May we always keep it, for it is the foundation of battle-craft.

An army without discipline is no more than a mob, alternating between frightened sheep and beasts of prey. Discipline, as the British soldier has demonstrated it in peace and war, is the old Christian virtue of unselfishness, of standing by your neighbour, your comrades. It is the sacrifice of a man's comfort, inclination, safety, even life, for others, for something greater than himself. It is the refusal to be the weak link in the chain that snaps under strain. Once, from the safety of a well-dug command post, I looked down on a battery of artillery in action in the African bush. It was firing at five rounds per gun per minute and, idly, I timed the nearest gun. The enemy, unfortunately, in the area, had complete local air supremacy, and guns, unless engaged in some vital task, were ordered to remain silent whenever hostile aircraft appeared. Gradually, dominating all other sound, came the dull drone of bombers flying low. But the guns went on firing, five rounds per gun per minute, for they were supporting an infantry attack. The first stick of bombs fell round the gun I was watching. Some of its crew were hit. The dry bush roared into flames, which spread instantly to the camouflage nets over the gun. It vanished from my sight in smoke and flame. Yet from the very midst of that inferno, at the exact intervals, came the flash and thud of the gun firing. Never a falter, never a second out. No weak link there: discipline held.

The Quality of Gentleness

Any soldier who has courage, endurance, skill at arms, adaptability and discipline, will be a very efficient soldier but he won't be the British soldier, for he has something more. It may seem strange to talk of gentleness as a soldierly quality, but it is—and he has it. Time and again the British soldier has combined real toughness in hardship and battle, with gentleness to the weak, the defeated, the unhappy. Our bitterest enemies would rather be occupied by British troops than by any others. The British soldier is a grim fighter—but, bless him, a bad hater. He moves amid strange races

and surroundings with an unarrogant assurance that radiates confidence. In famines, epidemics, earthquakes, floods he has earned the dumb gratitude of millions. Thousands he has protected against their own violence and fanaticism—often with poor reward.

One sweltering afternoon in the Red Fort at Delhi a company of British infantry was hurriedly falling in. There was a riot in the city, Hindu against Muslim. Heads were being broken, men stabbed, shops looted and burned. As the troops struggled into their equipment an officer said, 'Now remember, in this quarrel you're neutral'. A young soldier turned to his Sergeant, 'Wot did 'e mean by nootral, Sergeant?' he asked. 'Nootral, me lad', replied the N.C.O., 'Nootral means that when you go down that adjectival bazaar, you're just as likely to be 'it by a Mo'amedan brick as by a 'Indu brick'.

Unruffled by brickbats or bouquets, the British soldier has marched across history, dominating the scene. Success that might turn another's head he greets with studied understatement; disaster that would appall most he meets with a jest, for his courage is always laced with humour—with his own brand of humour, that is part of him and that he has kept quick, topical and good-natured through the centuries. There was a Grenadier, at Fontenoy, who as the French presented their muskets for a devastating volley intoned, 'For what we are about to receive may the Lord make us truly thankful'. He must have been brother to the freezing British fighting man crouching under a Korean blizzard, who exclaimed, 'I wish to Heaven the Iron Curtain was windproof!' Many countries produce fine soldiers, whose achievements rival those of our own. It is in character that the British soldier shows beyond others the mark of greatness. Courage, endurance, skill, adaptability, discipline they may have, but none blends these qualities together as he does with this leaven of gentleness and humour. Nor has any other soldier his calm unshakable confidence of victory. The character of the British soldier is his own, but in his achievements he has owed much to his officers. The Regimental Officers of the British Army have in all soldierly qualities, self-sacrifice and in leadership been worthy of their men. They could not have, nor would they covet, higher praise.

Well, that's the British soldier, officer and man. We do take him for granted a bit, don't we? How many of you sitting there, listening to me, know more about the victories of your local football team than about those of your country regiment? Good luck to your football teams, but give a hand to your Army too, for it is your Army, much more a part of

AIR TRANSPORT

Reprinted From Officers' Call (U.S.)

Part 2

Generally, what are our goals for air transport?

General Collins has indicated that the Army must use air transport to the greatest extent possible. He has said:

"Certainly transport of ground forces and their equipment by air would be a vital factor in the battles of any future war. Therefore, our ultimate goal is to have all Army combat elements (except armoured divisions) and their supporting units capable of making airborne assaults. This means that the Army must maintain the nucleus of trained, equipped airborne divisions capable of employment in an airborne assault, and that the remainder of the Army must, insofar as possible, be organized, trained, and equipped in such a manner as to be air transportable."

This is a big order. What are some of the problems it poses, some of the present limitations in air transportability that we must overcome to reach this goal? Factors to be considered include the airplanes themselves, our equipment, our present know-how, and our plans for the future, including our plans for training.

On the positive side, we have the know-how to move by air. World War II and our post-war operations, particularly Operation SWARMER and the Berlin Airlift gave us extensive experience in air transport. We are now learning more in support of the fighting in Korea.

(*Continued on next page*)

GREATNESS IN THE BRITISH SOLDIER

(*Continued from preceding page*)

the nation than it has ever been before in peace, and on it much more than a game may depend.

We have forced on us now the grim necessity to look to our defences. That will mean for all of us inconvenience and sacrifice, but before we grumble too much let us remember two things. First—never was an untrained man of less value in war than he is today. And second, if we deny ourselves to arm our forces, those arms will be going to the greatest of all fighting men—the British soldier.

In our training, we are building on our know-how in air transportability. Combat units that can move by air will receive training in air transportability.

The Army has many qualified paratroopers. These men know how to move by air. Additionally, for a time, The Infantry School conducted an excellent three-weeks' course in air transportability. This course acquainted officers with the problems of moving by air and instructed them in training for, planning, and conducting air movements. Much of the material in the course is now a part of the regular instruction of our Service Schools.

Number of Transports

Moving any sizable force by air requires a great number of transports. Here, the picture is not so good.

For example, to airlift the air-transportable part of an infantry division with three days' supply would take a combination of about 1,350 medium cargo aircraft (C-119 type) and about 169 heavy cargo aircraft (C-124 type). The follow-up echelon, mainly larger tanks and other heavy equipment, is presently not air transportable. Fewer planes could, of course, shuttle the division. And it would take considerably fewer aircraft to move the actual assault elements of an infantry division.

Thus, we can see the need for more cargo-type planes if we are to contemplate the moving of large ground units by air.

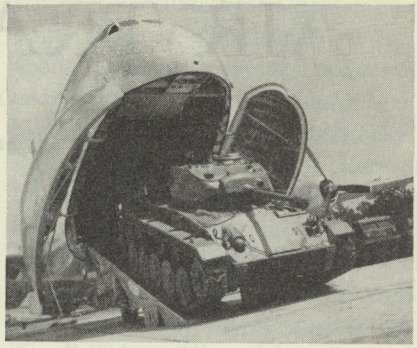


Photo by courtesy of Officers' Call

Capable of carrying a 50,000-pound payload more than 2,000 miles, this C-124A can transport 200 fully-equipped troops and all but the heaviest and bulkiest items of equipment in the infantry division.

Besides our regular cargo-type transports, we have many additional aircraft in our Air Force, Navy, the unified MATS, and commercial transportation. But if the time comes for emergency war use of air transportation, most of these planes will be needed also for purposes other than moving and supplying combat troops. Moreover, a civilian-type transport does not make the best airplane for combat transportation.

Thomas K. Finletter, Secretary of the Air Force, has said that although a "very substantial deficit" exists in our present capacity for air transport, the long-range situation is more encouraging.

Mr. Finletter explains that under a projected Air Force expansion our

airlift capacities would be greatly increased, particularly through the introduction of C–97 and C–124 transports. He cautions, however, that the proposed increase would meet the requirements for our Armed Forces in-being but not the needs of all-out mobilization.

President Truman has asked for a five-fold increase in the production of war planes to a rate of about 24,000 within a year. He has said that industry will be geared to turn out 50,000 planes a year if necessary.

This latter figure compares favorably with our yearly average during World War II. From 1940 through 1945, for example, we produced about 300,000 aircraft of all types with an airframe weight of about one and one-quarter million tons.* These included 100,000 fighters; 100,000 bombers of all types; 25,000 transports; and 75,000 trainers, reconnaissance planes, and aircraft for other uses.

It is significant to note that of all the airplanes built in World War II less than 10 per cent were transports. And if we are to increase our air transport potentialities to the extent that large ground units are to move by air, we will need many more transports than we have ever had.

In March 1944 we made more than 9,000 aircraft.

Photo by courtesy of Officers' Call

The assault transport, such as this XC-123, has great possibilities for army combat operations.

The Right Kind

Granted that our expanding Armed Forces will have more air transports, will our problems then be over? Not by a long shot. Even if we had all the planes we wanted today, we couldn't with our present aircraft move by air all elements of an infantry division.

We couldn't move it; we couldn't load and unload supplies fast enough. Today, we just don't have all the types of planes and other equipment required for the task.

We're approaching these problems in air transportability from two sides. As we know, one way is to make and use lighter and less bulky equipment in ground warfare; the other is to make and fly and land planes more suitable for Army needs. Improvements are needed on both sides.

Let's consider some of the things we are doing about our equipment to make it more air transportable. Naturally we want to cut down on weight and size. But we can't afford to sacrifice durability and dependability.

In some cases, we have been able to meet airborne requirements by modifying existing matériel. But we also have had to come up with entirely new models designed specially for movement by air.

Miniaturization

The concept of miniaturization has far-reaching implications. We have developed prototypes of superior new smaller equipment that point the way to more advances.

We are developing a family of airborne construction equipment designed to provide maximum utility and interchangeability of parts and components. One of the basic units is a tractor, available in both rubber-tired and track-laying versions, that provides almost the same work capacity as the standard model but at less than half the weight. With a series of lightweight attachments, it becomes successively a bulldozer, a front loading shovel, a grader, a prime mover for either a dump wagon or a scraper, and the power source for a winch. This machine is rugged and dependable, but, naturally, is not expected to have the life of the larger and more durable models.

We have a new switchboard that outperforms its predecessors yet with a reduction in weight and size of about 70 per cent. We have a new type of field wire that weighs 48 pounds per mile as compared to 132 pounds per mile for its World War II equivalents, requires no bulky reel, and minimizes the use of critical materials.

A new "walkie talkie" radio has only half the weight and size of its older version; yet, it provides four times as many frequency channels and double the power output of the earlier model.

In the field of weapons, we are con-

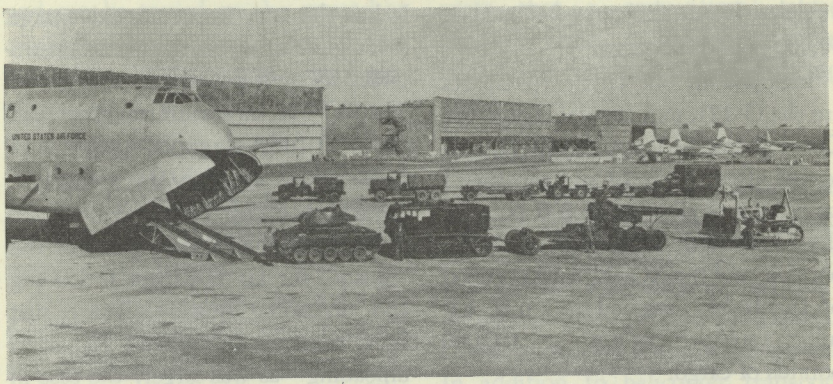


Photo by courtesy of Officers' Call

The C-124A can carry 94 per cent. of all military vehicles fully assembled and has facilities for rapid loading and unloading.

centrating on the problem of getting more and better firepower into an airhead in the early phases of an airborne operation. We have cut the weight of a 105-mm howitzer in half. In addition to our present recoilless rifles and bazookas, we have a new 105-mm recoilless rifle that has no counterpart among our recent weapons.

Aircraft Development

Significant developments have also been made in the aircraft that the Army needs. Here, too, the problems are difficult. If, for example, we have a plane large enough to carry everything we want transported it probably can't land in the usual primitive landing strips of an airhead. Thus, we must experiment with new and modified types of planes, landing devices, improving landing strips, and so on.

We must consider the plane itself—what range, speed, and cargo capacities do we need?

Some of the factors in the cargo capacity of aircraft influencing air transportability are: the size and location of cargo doors; height of the door from the ground and the ability to load through this door; size of cargo compartment; strength of the floor; rapid delivery or "kick-out" system to drop large quantities into small drop zones; location and strength of cargo tie-down fittings; allowable cargo load; gross weight; maximum landing load; and limitation of the position of the centre of gravity.

We have been making progress in the large cargo transports. The C–119 has proved its value in Korea. Another plane, the C–124, not yet used operationally, can carry virtually anything in the infantry division except the heavier tanks and tank recovery

vehicles. It can also carry 240 men or 50,000 pounds of cargo.

Included in our larger transports are the C–121, military version of the Constellation airliner; the C–97, patterned after the B–29 and capable of carrying a payload of 68,000 pounds; the C–74 with a payload of 50,000 pounds; and the XC–99, cargo version of the B–36, designed to carry 400 fully equipped troops or 100,000 pounds of cargo.

It should be remembered these payload figures are guides representing normally the maximum allowable cargo load. This allowable cargo load, or payload, varies with certain conditions. For instance, factors which reduce the plane's payload include flights of long distances; adverse meteorological conditions and the height at which the aircraft must fly; and condition of the landing strips or airfields where the cargo will be landed. As a result, allowable cargo loads are actually established for each operation.

Additionally, some of these larger planes have characteristics that tend to reduce their suitability for all Army purposes.

Important in the types of aircraft the Army needs for combat operations is the assault transport. A sort of improved, powered glider, the assault transport is looked on as a rugged troop and equipment carrier that can land and take off in short distances. It has the very important advantage (over gliders) of being able to return under its own power for more loads. The XC–123, an assault transport, can carry 60 fully equipped troops or a cargo load of about 20,000 pounds.

Detachable Cargo Transports

Particularly in combat, one of the "musts" for air transport is loading and unloading quickly. There just isn't time in an airhead for hand unloading—as was largely the case in the Berlin airlift.

Developments in the cargo compartments of the aircraft themselves can facilitate easier and faster unloading. But one of the most promising steps for quick unloading away from the air strip and, better yet, dispersal —which is also vital in an airhead—is the development of the detachable cargo type transport. The C–120, embodying the "prime mover and pod" or tractor trailer principle in an airplane, has operated successfully. Construction of more C–120's is under way.

The possibilities of the detachable cargo type transport are virtually limitless. With the present plane, the "mother ship" and the cargo pod land as one aircraft. The pod can be detached and the aerial prime mover (the aircraft less the cargo compartment) can return for another pod.

The pod will be hauled away from the landing strip for unloading at dumps. It may be possible that the

pod can be towed on the ground as any other trailer might be. In this manner, we might be able to haul supplies close to the using units rather than store them in dumps. The pod could also be used for small field hospital wards, mobile command posts, prepacked supply units, and many other purposes.

It may be possible to release the pod from the mother plane while both are still airborne and flying at low altitudes above the landing strips. The pod would then skid into a landing area. Particularly in the early stages of an airhead, this would be a way of getting a lot of supplies on the ground in a short time. It would also solve the problem of the heavier plane not being able to land on unimproved landing areas.

This would be similar to glider landings. A pod costs less than a glider—considered expendable during combat—and requires no man to guide it to a landing.

Perhaps the pod may be dropped by a parachute-rocket arrangement. After the pod is released from the mother ship, parachutes would keep the pod falling correctly at the same time breaking the fall. Rockets on the pod firing at certain altitudes above the ground would lessen the impact of landing.

A transportation possibility is that the pods also could be carried by a helicopter. If the pod were taken into spots that a conventional plane couldn't reach, a helicopter could hover over the pod and pick it up without landing.

Army Helicopters

The Army has been authorized organic helicopter transport companies.* It is contemplated that they will provide short-haul air transport for combat divisions on a basis similar to that of our present truck companies. In addition to helicopter transport companies, thought is being given to using helicopters in battalions and companies of combat units to complement and to replace partially the present vehicular transport of these units.

Our present utility helicopter can be used to transport men (especially important in evacuating casualties), take ammunition and hot food to troops in near-inaccessible spots, control fire, lay wire, reconnoiter, and a variety of other jobs involving getting some place where other means of transport can't reach or reach quickly enough.

With further improvements in helicopters, including increased lift capacities, it may be possible that they can carry all types of supplies and am-

(Continued on Page 77)

*The first was activated at Fort Sill, Oklahoma, 1 November 1950. These companies are Transportation Corps units. They are authorized: 21 cargo helicopters, as standard equipment, and 2 utility helicopters for command and control purposes.

SOVIET MILITARY ORGANIZATION

ITS HERITAGE AND DEVELOPMENT

The contribution of Imperial Russia and its leaders until the time of the 1917 Revolution and the creation of the Red Army. Background for an evaluation and understanding of the Soviet Army today.*

I: From Tsar to Commissar

Gray masses of soldiers rode on the roofs of overcrowded trains. The trenches were emptying and the roads were filled with soldiers marching eastward. Its discipline dissolved and its members demoralized by the Bolshevik revolution, the Imperial Russian Army was streaming homeward. Amid this revolutionary chaos of 1917, the Imperial Russian Army disintegrated and from its remnants the Red Army was created.

The winter of 1917–1918 marked a significant turning point in Russian military development. Traditions, uniforms and patterns of the past were stamped into the ground to make way for the new army of Communism. At its inception on 23 February 1918, the Red Army was to be a new army, unpolluted by the symbols and influences of Tsarism. This was a naive Bolshevik idea but contrary to circumstance and history, for the new army had to strengthen its motley force of workers, partisans and peasants with cadres from the Imperial Army.

Twenty-five years later in the midst of World War II, the Red Army dug deep into past history to revive Tsarist uniforms, customs and traditions in order to bolster the morale of its sagging forces. The very army that during the Revolution and Civil War had mocked and degraded Tsarist officer uniforms and insignia, in 1942–1943 restored the epaulets, guardist titles and other symbols it had hated so violently.

Actually the present-day Soviet Army reflects a military heritage which began centuries before the Russian Revolution. Armed forces of Russia have been waging war for seven centuries, but the Russian army really originated with Peter the Great's creation of a Western-type army.

In the 17th Century, the Russian army was a conglomeration of varied military elements. The *streltsy* or palace guard regiments were the core of the army which included regiments of foreign mercenaries as well as the levies of Russian noblemen with their peasant foot-soldiers This army was not an effective one, but Princess Sophia, regent for the young Tsar Peter, sought popularity and glory in a war against the Crimean Tartars and Turks, so the army marched. The campaign ended in catastrophe for the Russian arms and the need for reform was recorded in Russian history.

During the regency of his sister,

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"Peter the Great" from an engraving by Henriquel DuPont.

Sophia, Tsar Peter lived at the village of Preobrazhenskoe near Moscow. The banished Tsar, later to be the architect of a new Russia, gradually built up a bodyguard — a "play army" initially composed of courtiers and servants. The "army" took form in two regiments, the Preobrazhenski and the Semyonovski. Like many units of the age, these regiments were essentially military organizations composed of political party members, and it was with these instruments of political as well as military power that Peter overthrew Sophia's Guard (the old *streltsy* regiments), deposed her as regent and elevated himself to power in 1689. This purge, like the many to follow in Russia, was bloody and violent in pattern. Hundreds of *streltsy* were hanged or beheaded with Peter personally wielding the axe on some of the heads. For five months Moscow had to stare at the bodies hanging from the Kremlin walls.

Tsar Peter had inherited a disorderly medieval levy whose provisioning and administration had been left practically to chance. By personally supervising the reorganization of the old army, Peter the Great gave foundation to a more modern military body. Peter's two original regiments served as a pattern in organization, equipment and training for additional units as he expanded his army. To support the army the Tsar built up his backward nation's industry. Artillery in particular received the Tsar's special consideration. Thus began the traditional "best arm" of the Russian army.

In the course of Peter's reign, conscription for the army was put on a territorial basis. Each province was obliged to recruit, clothe, quarter and pay the military units assigned to it. In placing these obligations on the working class, Peter was no less rigorous with the gentry. He combined all nobles in a unified caste and made service in the army a lifelong duty for the nobility. At the same time, soldiers who rose to the rank of superior officers became noblemen. In effect, state rank took precedence over hereditary rank.

The army was one of contradictions and extremes. Some of the nobility served in the ranks, yet they were allowed servants. There were regulations forbidding these privates from exhibiting too much luxury although their retainers formed a bulky regimental train. Social equality, while visible on some surfaces, was not real with the lower classes performing the actual military labor.

A great many of the officers who drilled Peter's army were foreigners and their influence was one of bringing to the Russian army facets of several European armies. Thus the Russian army assumed western characteristics and was slow to develop

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"Suvorov's March Through the Alps" by Surikov depicts an episode in the Russian campaign against the French in 1779.

its own definite form. However, the more purely Russian Guard regiments were the stabilizing core of the army, the military implements that backed the throne or put rulers on the throne.

Throughout Russian history each Tsar endeavored to build up a new regiment which would guard him personally. Peter III and Paul I created units before they reached the throne and afterwards they merged these units into the army. The Ismailov Guards and the Life Guard Cavalry regiments were created by Empress Anna Ivanovna and the Pavlov Life Guard Grenadiers were established by Paul I. Behind these guard units, however, stood the masses of other men who gave Russian armies their combat weight.

Peter the Great did not build up his army to let it stand idle. The first test of his new military force was against Charles XII of Sweden — the greatest conqueror of the era. In the battle of Narva in November 1700, some 8,000 well organized Swedish troops routed 40,000 Russian soldiers who in panic stabbed many of their foreign officers to death. Only the Semyonovski and Preobrazhenski regiments defended themselves with fatalistic energy. Fortunately for Peter, he was given time to strengthen and further train his army in minor campaigns against weak foes.

While Charles XII campaigned in Poland, Peter's soldiers captured a few Swedish fortresses near the Neva River, thus giving Russia an outlet to the sea. Russian slavery built the capital of St. Petersburg on the marshes of the Neva.

Disposing of the Poles, Charles XII invaded Russia where his legions again met those of Peter. In a battle at Hallosin, 3,000 of Charles' men made seven charges to defeat 20,000 Russians. By this time the unruly Don Cossacks — formerly a rampart of Russia's frontier — were in revolt and they subsequently joined the Swedes.

King Charles attacked through the Ukraine intending to take Moscow. Peter's army harassed the Swedish expeditionary force while the Russian population scorched the earth in the path of the enemy. Reaching Poltava, the Swedes stormed the city only to be repelled by the local garrison until Peter's army arrived. In the battle that followed on 27 June 1709 the Russian army was victorious. The Swedish troops and Russian Cossacks were effectively destroyed.

In Russia the death of an emperor or empress often signalled a violent struggle for power, especially when there was doubt as to which relative was to assume regency or the throne. When Peter the Great died in 1724, the Senate argued over the choice of his successor. The debate was cut

short by the roll of drums, for Catherine, Peter's second wife, had enlisted the support of the Guard regiments. These units intimidated the Senate into proclaiming this foreign-born woman the ruler of Russia in 1725.

The next renowned European conqueror to feel Russian military might was Frederick the Great during the Seven Years' War (1756–1763). Advancing into East Prussia the Russian army defeated the Prussians at Gross-Yaegersdorf on 19 August 1757. A year later, almost to the day, the Russian army fought the indecisive battle of Zorndorf, but on 1 August 1759 Russian arms bested Frederick the Great at Kunersdorf. Little more than a year later the Russian army entered Berlin, pillaged the treasury and destroyed the arsenals.

In 1761, Peter III, a worshipper of Frederick the Great, ascended the throne. In 1762 he freed his nobility from the obligation of consecrating themselves to the service of the state. He also introduced Prussian drill to the Russian army and outfitted it in Prussian uniforms. German military specialists who had been banished during the previous reign were recalled to service. Russian troops absorbed considerable brutality but responded in drill to these harsh foreign martinets. Thus a foreign military system was again superimposed on the Russian army, but it hardly produced effective results. The army was still seeking a character of its own. It had not long to wait for a change.

From this era emerged one of Russia's greatest military leaders, Alexander Suvorov, whose axiom "Hard on the training ground — easy in battle", is felt in the Soviet Army today. Observing the Seven Years' War, Suvorov drew certain conclusions which later had impact on the Russian army — and on all of Europe.

The extraordinary successes of Frederick the Great had cast a spell over the military minds of Europe. His drill, tactics, strategy and even uniforms were slavishly imitated — but without the same effective combat results. The incompetence of the Russian army, even though victorious against Frederick, impressed Suvorov who perceived that Russian military strength lay in the peasant composition of the army — not in the officers or the way they handled their troops. Suvorov brought new and revolutionary ideas to the Russian army and in addition he became one of its most daring and outstanding leaders.

In Suvorov's age the men in the ranks were often those serfs whom the nobility could best spare for the army. They were anything but the best manpower. Drunkenness, idleness, dishonesty, indifference to dress

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"After the Battle of Borodino" by the artist Vereschagin portrays the Russians defending Moscow against the French in 1812.

and discipline were common characteristics of these soldiers. The discipline needed to control these men depended largely on brutal punishment. It was here that Suvorov become a reformer who sought fairer treatment for the soldiers while at the same time spurring soldier initiative, godliness and cleanliness. Suvorov was also original in keeping his troops on a war footing by hard and realistic training. He encouraged liberty, fraternity and equality while at the same time setting a new example by sharing the discomforts of his troops. Suvorov thus stood out prominently in an era when officers believed that soldiers should be harshly treated.

Suvorov drew up a manual of military training called The Science of Victory. This document, written in a simple language the soldiers could understand, dealt with military elementals and essentials: "How to march", "Where to attack", "How to camp" and "How to determine enemy strength".

"Every soldier must know his manoeuvre" was a new and revolutionary doctrine for any one to teach in the Russian army; heretofore soldiers had not been allowed to have minds of their own.

"Fire opens the gates of victory." It was Suvorov's practice to open battle with artillery fire, but for the final outcome he had most faith in the infantryman's blade. "The bullet's a fool; the bayonet is the boy," read Suvorov's manual.

Beginning his career as a private and culminating it as the generalissimo, Suvorov trained troops for battle, not for the parade ground. The offensive was the cornerstone of his strategy; it carried him across the Alps — an achievement that won for him Napoleon's admiration. To this century Suvorov's march across the Alps is recorded on Swiss General Staff maps with the legend "Suvorov's Route in 1799."

In his forty years of active service in wars with Turkey and the Polish Confederacy, Suvorov was never defeated. It is not unusual, therefore, to find him held in great esteem by the Soviet Army whose Order of Suvorov is awarded to the higher commanders and their deputies for the conduct of offensive type actions which result in enemy defeat. However, in contrast to Suvorov's ideas of equality, the present day decoration honoring him is bestowed in three different classes depending on the rank of the recipient. It is generally reserved for only those of highest rank.

Suvorov never pitted his talents against Napoleon but one of his pupils, also a present-day hero of the Soviet Army, did. Mikhail Kutuzov is honored today by the Soviet decoration bearing his name and

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"On the Great Road" by Vereschagin depicts the retreat of the French army from Russia in 1812

profile. In contrast to the Suvorov decoration for offensive action, the Order of Kutuzov is awarded to those commanders who successfully carry out operations in the face of enemy superiority. It is a defensive type decoration stemming directly from Kutuzov's delaying action against Napoleon when the invading French army left behind it a trail of Russian corpses.

Throughout its history the Russian army relied heavily on its elite troops, the Cossacks and the Guards. Especially before serfdom was abolished, the average Russian soldier viewed the Cossacks with envy and secret hostility, for the Cossacks were free men who originally elected their military commanders. Warriors by tradition and choice, the Cossacks expanded the frontiers of Russia. They were especially useful to the Tsarist government in garrisoning and policing Poland and quelling with quick and often brutal action the internal disturbances of Russia.

In the one hundred years between 1814 and 1914, Russia waged three major wars — the Crimean Campaign (1853–1856), the Russo-Turkish War (1877–1878), and the Russo-Japanese War (1904–1905).

Inept leadership and antiquated armament helped bring about Russian defeat in the Crimean War.

Despite military bungling the Russians managed to win the war against the Turks, but ill-equipped and ill-clothed Russian soldiers died needlessly from frostbite and exposure. It was the sacrifice and endurance of the lower ranks which permitted the Russian Army to win this conflict.

Soldiers' endurance compensated for many of the administrative, tactical and logistical deficiencies of the Russian Army in 1905 — but the giant army of Russia was badly defeated by the smaller Japanese forces. Following this ignominious defeat, far-reaching reforms were projected in the Russian Army but these were never effectively carried through.

The Russian Army, like the nation it served, developed slowly. Russia spent money freely to maintain a giant military force. However, the money was not always well spent. At the turn of the century, the Imperial Russian Army was a ponderous military machine. It was a tradition-conscious army, burdened with lavishly uniformed and bemedalled officers too many of whom did not know their jobs thoroughly enough. The best officers from the standpoint of professional excellence were to be found in the engineer and artillery branches.

By the outbreak of World War I, Russia had a great mass of reservists. While they responded rapidly to mobilization orders, they were in-

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British troops storm a Russian fort during the Crimean War, 1855.

sufficiently trained. For all its ponderous size and many deficiencies the Russian Imperial Army swung quickly into motion at the beginning of World War I. Just sixteen days from the time war was declared and Russia began mobilization, her armies were moving on the offensive against German military forces. But as the Russian Army marched into combat it was never to return from the front as an organized military body. It was entering its most tragic era.

Superficially the Russian Army gave the impression of great strength, but serious weaknesses lay concealed in and behind the long gray columns of men. The army was unbalanced with its excessive proportion of infantry and weakened by a leadership that failed to grasp the logistical demands bred by its armed masses. Russia's factories could not produce sufficient shells for the giant army whose large forces were committed in regions lacking the road and railroad nets needed to support them. This lack of ammunition and arms and the inadequate transportation facilities eventually had their impact on soldier morale.

Despite its earlier defeat by Japan, the Russian Army had clung to old practices and systems and had failed to undertake needed reforms. The Guard regiments, provided with extra funds for equipment, had squandered the rubles on peacetime luxuries such as dress uniforms instead of machine guns.

Many officers were militarily talented but the bulk of them were not. Four years of high school and several months of military schooling were sufficient to place the epaulets of commissioned rank on almost any shoulders. Reservists were relatively untrained for the combat tasks ahead

of them and regulars were unskilled in the wartime aspects of their profession. As a group, the top-ranking officers were not progressive but adhered to ideas of the past. At least two of them, Samsonov and Rennenkampf, who were leading the vanguard of Russian forces in the field, were in personal conflict. Their enmity was so great that these two commanders would not speak to each other. Yet in 1914 the armies under the command of these two officers were selected to make a joint effort. Rennenkampf, advancing from the east, and Samsonov, advancing from the south, were to overrun East Prussia. Russia, pressed by the French government, hastened its offensive. The two armies advanced without effective preparation and co-ordination to be annihilated in turn — Samsonov at the Battle of Tannenberg and Rennenkampf at the First Battle of the Masurian Lakes. A quarter of a million German troops decisively defeated Russian forces totalling 500,000 men.

In the German offensive a year later, Russian soldiers resisted splendidly but suffered severe losses. By this time Russian field artillery was often without sufficient ammunition. The army was driven eastward.

Nevertheless, Russia still showed signs of strength when in 1916 her army launched an offensive on a 250-mile front against the Austrians. Russian dead were piled on the battlefields as evidence that her army could make enormous sacrifices. Russian losses even amazed the battle-hardened von Hindenburg. The Russians gained some satisfaction in the capture of more than 400,000 prisoners.

Meanwhile there were disturbing signs within the army as serious deterioration set in. In December 1916, General Brusilov cited the VII Siberian Army Corps as having arrived on the Riga front "entirely under the influence of propaganda." Rebellious ranks bayonetted a company commander and the soldiers of the corps refused to attack. After continued defeats on the battlefront, revolution — fanned by the propaganda of agitators — broke out and the last Emperor of Russia abdicated in March 1917.

The Duma set up a Provisional Government headed by Prince Lvov. The Provisional Government, lacking men capable of strong leadership, failed within the year. In April, Nicolai Lenin, leader of the Bolsheviks and avowed enemy of the Provisional Government, arrived in Russia from Switzerland, having crossed Germany in a sealed railway car. On 17 May Kerensky became Minister of War and set about to prepare a general Russian offensive. Five days later Kerensky approved the order known as the "Declaration of Soldiers'

U.S. Library of Congress

Russian forces engage the Austrians in the First World War.

Rights", a document which echoed the notorious "Order Number 1" of the Petrograd Soviet and destroyed the last vestiges of discipline in the army.

To represent the government in the army, Kerensky appointed political commissars. Caught between the soldiers' committees (which had sprung into being at the beginning of the Revolution) and the commissars, the army officers were unable to maintain their authority. Active fighting ceased and desertion began on a large scale. The Russian Army was going home. Yet amid this disintegration and chaos, Kerensky continued to organize a military offensive. In July 1917, the offensive operation of the "reorganized" army got under way on the Austrian front. Despite initial successes, whole regiments refused to carry out military orders; some even left the front. The reinforced enemy launched a counter-offensive and the Russian Army was routed. Some 1,500,000 men were listed as "deserters". The army, as Lenin said, "had decided the question of war or peace with its feet."

In November 1917 (by the old Russian calendar it was still October)

Keystone View Company

Troops draw rations at a field kitchen during the Russian Civil War, 1919.

the "October Revolution" took place. Lenin and his Bolshevik party under the slogan of "peace, bread and land" seized governmental power. In December an armistice was signed between Soviet Russia and Germany. After unsuccessful peace negotiations between Russian and German representatives, Germany resumed operations against Russia in February 1918.

From the day they seized power it was obvious to Lenin and his followers that they must organize an army loyal to the Red cause if they were to retain the leadership of the country in the face of the double threat of counter-revolution and renewed German operations.

The Red Army grew slowly from confused beginnings.

One of the first acts of the Soviet government was to abolish the epaulets as a symbol of the old regime. The Bolsheviks had ordered the soldiers in existing units to elect their own new officers with the result that illiterate soldiers became regimental commanders. The majority of the Tsarist officers turned against the Revolution and virtually all such officers were suspected of being counter-revolutionaries. Hundreds of officers were murdered by mobs. The officers of the old regime were held in contempt by the soldiers, yet in the confusion of revolution and growing civil war their talents were needed. Many of them were engaged as military specialists by a government which held them all suspect.

The Workers' and Peasants' Red Army (RKKA) dates its official origin from 23 February 1918 when elements of this new army defeated invading German units in an engagement near Pskov and Narva. This day is celebrated annually as "Soviet Army Day".

But the hastily assembled Red forces were in no condition to halt the German advance permanently. The Bolsheviks were forced to accept the terms of the Treaty of Brest-Litovsk which resulted in the loss of considerable Russian territory.

The Red Army of that time was a motley force of workers, remnants of the Tsarist Army, sailors, Cossacks and partisan groups totalling less than 100,000 men. Its officer cadre consisted partly of former Tsarist officers and partly of Communist activists. Hardly was the Red Army created when the Bolshevik propaganda machine gathered momentum. Party cells were organized and from April 1918 a political commissar was assigned to each regiment. The principle of electing commanders was discarded at the same time.

As rapidly as they could the Soviets built up a new cadre of commanding officers selected from the proletarian rank and file. Thus after about a year there appeared a new type of commander — often illiterate

U.S. Library of Congress

Stalin, Lenin and Kalinin together in 1919. The picture is from a captured German film collection.

— who only months earlier had been a factory worker or peasant. Blunt self-assurance compensated for his lack of military knowledge since he had the full support of party dictatorship. In view of the lack of qualified unit commanders, Trotsky favored the continued use of the Tsarist "military technicians" to bolster the Red Army.

Behind the walls of the old military academies the Bolsheviks found scholarly officers who, being Tsarists, were reluctant to support the Revolution and Civil War. These had to be impressed, sometimes at gun point, into Soviet service. The talents of these officers — more college professors than military men — were badly needed. In a similar category were the old General Staff officers. They worked for the Soviets despite hostility toward the new system and a lack of interest in politics. In these officer groups were Kamenev and Tukhachevsky who represented the old nobility, the latter subsequently being rewarded for his service to the Soviets by execution. Shaposhnikov was still another Tsarist officer who wielded considerable influence in the newly created Red Army.

After the October Revolution, Russia denied her obligation to continue fighting during World War I. Beset with internal strife the divided nation was torn by a civil war that was a series of mobile campaigns engaged in by units small in proportion to the vast areas over which they had to operate.

As the internal struggle lengthened, the Red Army increased in size until by the end of the conflict in 1921 it

had attained a peak strength of 5,300,000, including service units.

During the civil strife, the Red Army operated partly along guerrilla lines and even the regular forces assumed a partisan character. The Soviet government was against the guerrilla theory for troop organization and tactics, favoring instead a regular army along modern lines. However, military necessity during the civil conflict forced it away from application of the idea. Certain political forces favored the partisan form of military establishment. Dispute on these issues lasted well beyond the civil war.

This bitter strife bled the Red Army but brought forth a new crop of Russian commanders and new military doctrine born of the peculiarities of the conflict. This type of war was far from that of the sluggish, massed movements the Russians had known in combat against Germany. Also it was a war of extreme hatreds and brutalities. It is not surprising therefore to find the victors groping for new military concepts while at the same time being guided and somewhat inhibited in viewpoint by the type of combat they had experienced.

(To be continued)

ARMY SAVES BRASS

The [U.S.] Army has announced that it will begin manufacturing steel cartridge cases for small arms and artillery ammunition, replacing brass, in order to conserve copper and zinc.

In the event of large scale production of cartridge cases, millions of pounds of strategic metals formerly used in the manufacture of brass cartridge cases will be saved by using steel. The new steel cases may cost less than the brass despite a more complicated production process because of the lower cost of steel.

Army Ordnance experimented with steel cases during World War II when copper and zinc were in short supply. The first steel cases produced were not entirely satisfactory because of their tendency to enlarge and split at the time of fire, which prevented the normal escape of gas and the easy extraction of the cartridge cases from the gun. Through continued research after the war, the Army has developed the steel case to equal the performance of the brass case.

Many of the new weapons and ammunition under current development require physical properties in the cartridge case beyond the range of brass alloys, but well within the range of steel.—*Army-Navy-Air Force Journal* (U.S.).

TOPOGRAPHICAL MAPPING FOR DEFENCE

By
CAPTAIN C. T. OSBORNE, ARMY SURVEY ESTABLISHMENT, RCE,
ARMY HEADQUARTERS, OTTAWA *

PART 2

The original record of observations taken at the stations during the summer is made over to the computing section. This is small in size compared with the rest of the unit but it forms a most important part of the machinery. The surveyors' field notes are only the beginning of a process which goes far beyond merely computing co-ordinates for the stations. The data from all previous surveys is analyzed and that which is of use, retained. Much of the previous work has been computed on local grid systems; other values are given in geographical co-ordinates, all of which have to be converted to co-ordinate values in the Universal Grid system. The present intention is to have Universal Grid co-ordinate values for all stations in Canada, including stations that have been established by governmental and other agencies. The Army Survey Establishment acts as a clearing house for this, collecting all data required, forwarding it to the United States for conversion by electronic computing machines, and then distributing the final Universal Grid co-ordinates.

The Universal Grid system of reference combines the Universal Transverse Mercator* projection between latitudes 80°N and 80°S and the Universal Polar Stereographic projection for the poles. The UTM grid uses the equater as one axis of reference from which all values north or south are given. In an East-West direction the globe is divided into zones 6° wide. The central meridian of each zone is the reference axis for that particular area and all East-West values are referred to it. The Universal Polar Stereographic has the Pole as its point of origin with the Greenwich meridian as the reference axis for East-West co-ordinates and a line through the Pole at right angles to this as the axis to which North-South co-ordinates are referred. All of the work on the mainland of Canada falls within the limits of the Universal Transverse Mercator grid.

*See article entitled "Military Grids" in the January 1951 issue of the Journal.—Editor.

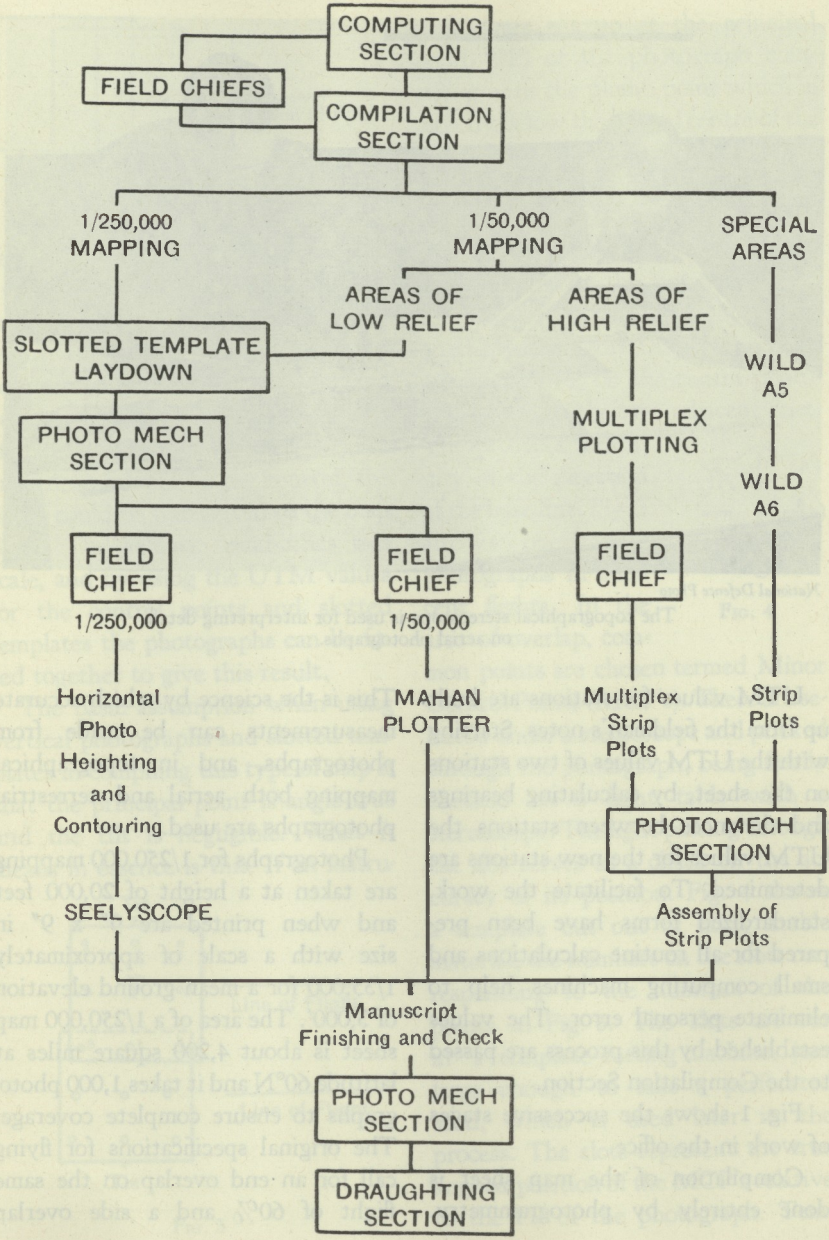
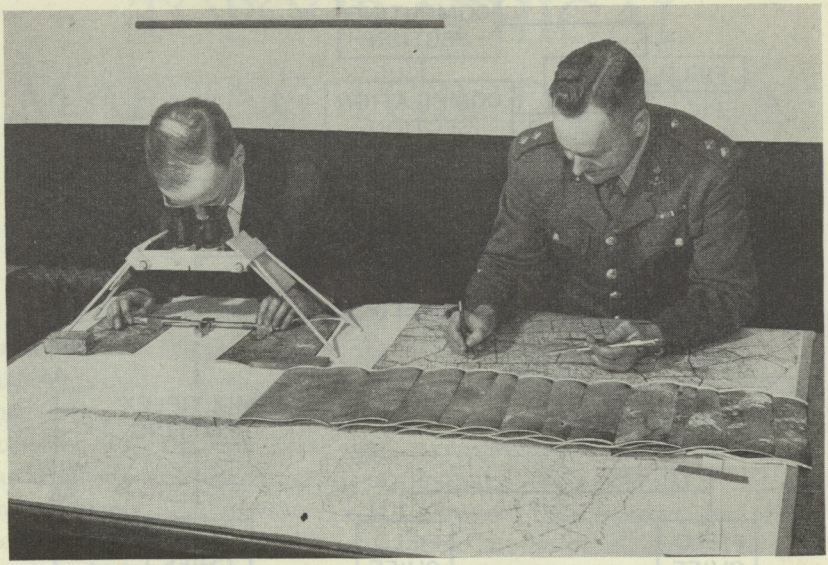

COMPUTING SECTION
FIELD CHIEFS
COMPILATION SECTION
1/250,000 MAPPING
1/50,000 MAPPING
SPECIAL AREAS
AREAS OF LOW RELIEF
AREAS OF HIGH RELIEF
SLOTTED TEMPLATE LAYDOWN
WILD A5
MULTIPLEX PLOTTING
PHOTO MECH SECTION
WILD A6
FIELD CHIEF
1/250,000
FIELD CHIEF
1/50,000
FIELD CHIEF
Horizontal Photo Heighting and Contouring
MAHAN PLOTTER
Multiplex Strip Plots
Strip Plots
PHOTO MECH SECTION
SEELYSCOPE
Assembly of Strip Plots
Manuscript Finishing and Check
PHOTO MECH SECTION
DRAUGHTING SECTION

FIG. 1



National Defence Photo

The topographical stereoscope is used for interpreting detail on aerial photographs.

UTM values for stations are built up from the fieldman's notes. Starting with the UTM values of two stations on the sheet, by calculating bearings and distances between stations the UTM values for the new stations are determined. To facilitate the work, standardized forms have been prepared for all routine calculations and small computing machines help to eliminate personal error. The values established by this process are passed to the Compilation Section.

Fig. 1 shows the successive stages of work in the office.

Compilation of the map sheet is done entirely by photogrammetry. This is the science by which accurate measurements can be made from photographs, and in topographical mapping both aerial and terrestrial photographs are used.

Photographs for 1/250,000 mapping are taken at a height of 20,000 feet and when printed are 9″ x 9″ in size with a scale of approximately 1/35,000 for a mean ground elevation of 3,000′. The area of a 1/250,000 map sheet is about 4,200 square miles at latitude 60°N and it takes 1,000 photographs to ensure complete coverage. The original specifications for flying call for an end overlap on the same flight of 60% and a side overlap

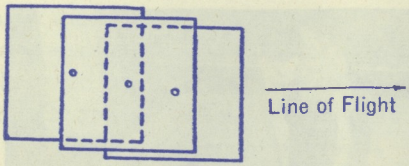


FIG. 2

between flights of 30%.

By viewing successive photographs in pairs a stereoscopic image can be seen. The differences in elevation between points on the ground become very obvious and if the plan positions of the points on the photograph were known, in relation to the control, the detail could be transferred to the map sheet. The fieldman establishes this scale, and by using the UTM values for the control points and slotted templates the photographs can be fitted together to give this result.

The basic assumption when using vertical photographs and slotted templates in compiling this type of map is that the principal point is angle true and the tilt is negligible. What it means in essence is this. If an instrument were set up at the principal point (PP) of the photograph coinciding with the plumb point which is directly below the optical centre of the lens of the camera, and angles were observed to other points, these angles would be the same as those that could be measured on the photograph.

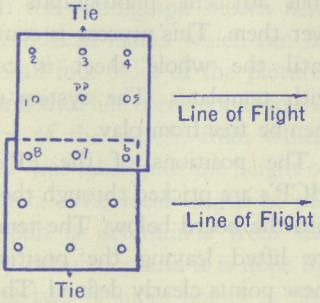


FIG. 3

Fig. 2 shows the position of the PP's on three successive photographs on the same flight. Due to the 60% overlap the PP on the centre photograph falls on the two adjacent ones. This provides continuity in the direction of the base line. Fig. 3 shows overlapping photographs in adjacent flights. In the area of overlap, common points are chosen termed Minor Control Points (MCP's). These are selected under a stereoscope and pricked through the photograph, being finally checked on a light table with a stereoscope. The light passing through the dot serves as a check on the accuracy of its position. Fig. 4 shows a template cut out of fairly stable material, the numbers on the slots corresponding to the numbers of the points in Fig. 3. The slots are cut in a template cutting machine, just large enough to take a perforated stud, which is used later in the process. The slots represent the true angular position of the MCP's relative to the PP of the photograph. Tem-

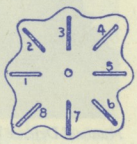
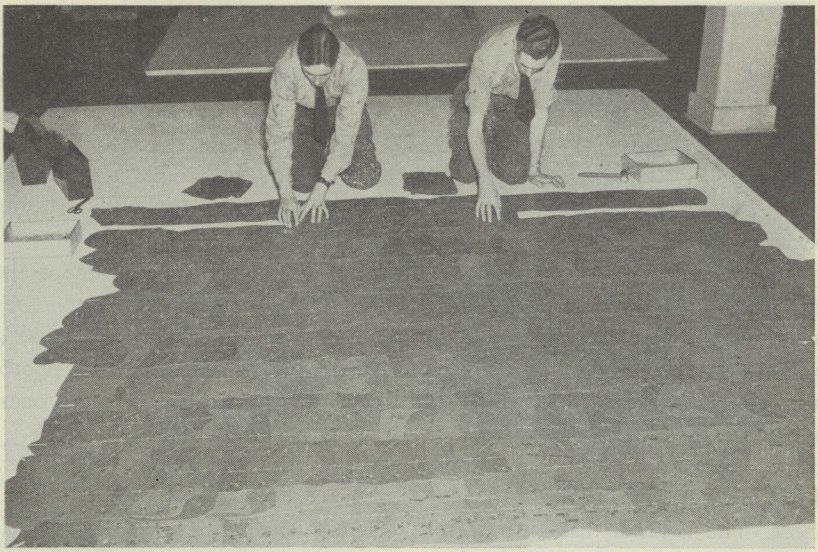


FIG. 4



National Defence Photo

The slotted template assembly is used for co-ordinating the position of the aerial photographs.

plates are made for every photograph on the map sheet and correctly marked with the flight and photograph number.

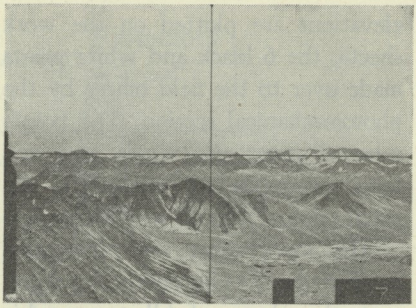
While this is being done, the grid board to take the template laydown is prepared. Field officers identify the control stations on the photographs and the grid values given by the computing section are plotted. The templates are laid on the board in their relative positions, the rays intersecting one another at the position of all control points and PP's. Studs are fitted in to represent these positions. The major control stations determine the scale of the laydown, which is about 1/45,000 in mountainous country. Care must be exercised in the laying of the templates. Strips that have been laid must be permitted to settle to take up their natural positions. Studs are not forced into place but put into the slots in their approximate position and the rays from adjacent photographs placed over them. This process is continued until the whole sheet is covered with templates. The system should then be free from play.

The positions of the PP's and MCP's are pricked through the studs into the board below. The templates are lifted leaving the positions of these points clearly defined. The PP's and MCP's are circled in black with

the graticules, grid lines and control stations also marked with black ink. The board is then taken down to the photomechanical section.

By a photo-reduction process a negative is made from the board at a scale of 1/125,000. From this negative, a blue ferro-prussiate print mounted on a zinc sheet, 3 black and white copies on chart paper and 3 other black and white copies on ordinary thin paper are printed. These are all passed back to the field officer for use in heighting.

The horizontal photographs supply the information required so that the elevation of points on the sheet can be determined. As you will remember, these photographs were taken by the officers at the control stations after angles had been observed. They are oriented on one particular station. The vertical centre line of each successive view is displaced by 36° from the one before it. There is also a small section of overlap at the border between photographs. The two black lines on the photograph shown here join the fiducial marks which can be seen on all four sides of the picture. The horizontal line corresponds to the elevation of the station from which the view was taken plus the height of the camera. The focal length of the photograph is determined from the print by calculation and it is done by selecting two or more points in one view between which instrumental



A horizontal photograph with superimposed fiducial lines. This was taken from a control station in the field.

angles have been observed.

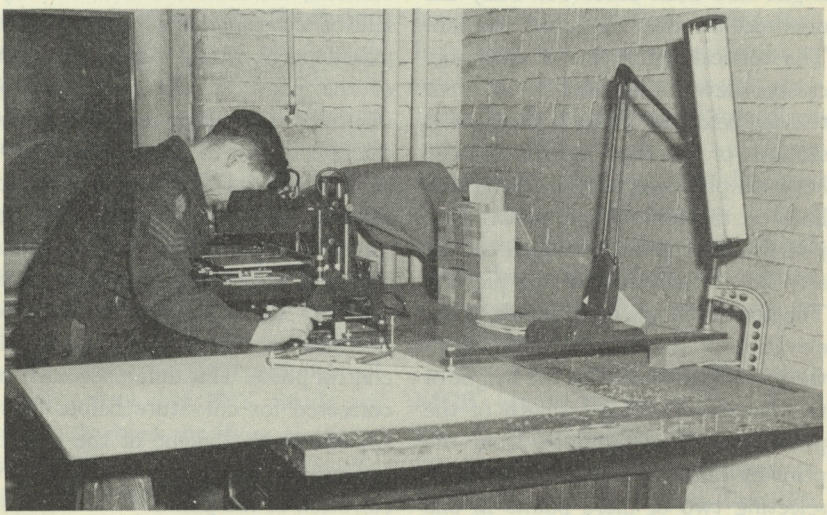
With this information, any distance measured horizontally from the centre line to a point will give a value which can be converted into angular measurement. If a point selected can be seen on photographs from two control stations, the intersection of the rays laid off corresponding to the angular measurement would give the position of the point. If the point can be identified from other control stations, the rays drawn to the point will serve as a check on the accuracy of its position. In the same way a measurement down or up from the horizontal line will enable the topographer to calculate the difference in elevation between the selected point and the control point. This difference must be corrected for curvature before being applied to the height of the control station to determine the corrected elevation of the point.

In this way, the positions and

elevations are plotted on the work sheets, the 6 black and white prints made over to the field officer by the photomechanical section. The points selected cover the whole area and their elevations are marked on the aerial photographs on which they fall.

The topographer can now draw contours on the photographs to represent the shape of all topographic features. In the compilation of 1/250,000 reconnaissance mapping the overall impression is the main consideration. The knowledge that the topographer gains in the field from working in the area is of considerable help at this stage. It is the picture of the ground that the impression must convey and the successful representation of this is dependent on three factors. The topographer must have the ability to see the form of the land, to draw what he sees and be able to apply common sense derived from what he knows. The result is generally good contouring. The contours are finally inked in red on the photographs and the other topographic features interpreted. The interpretation consists of defining the prominent drainage in the area with blue ink, and marking the limits of heavy timber with a green line. All details can then be transferred to the ferroprussiate print on the zinc sheet.

The instrument used to do this is the Seelyscope. The photograph is placed below a mirror inclined at an angle of 45° about 9″ above the table. The rays are refracted through 90°



National Defence Photo

The Wernstedt-Mahan plotter is employed for compiling 1/50,000 maps from aerial photographs.

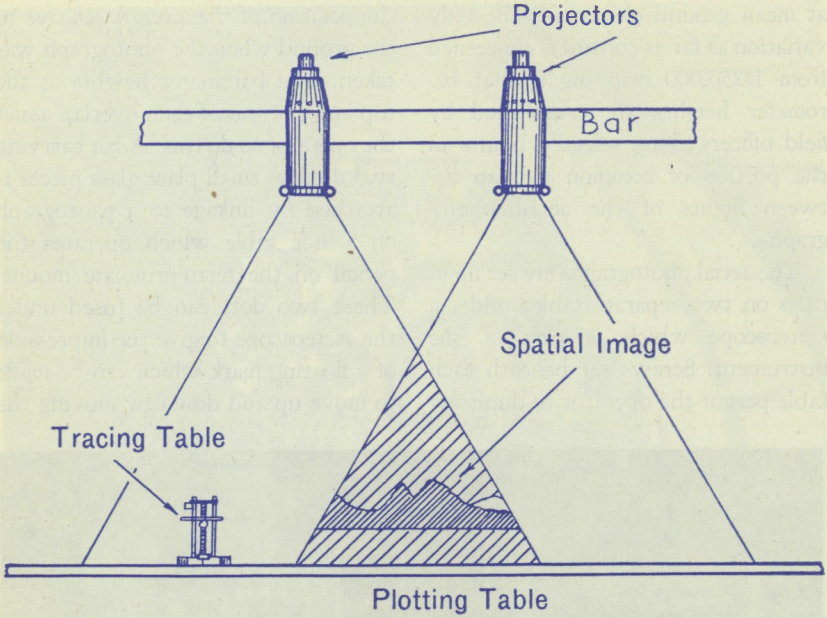


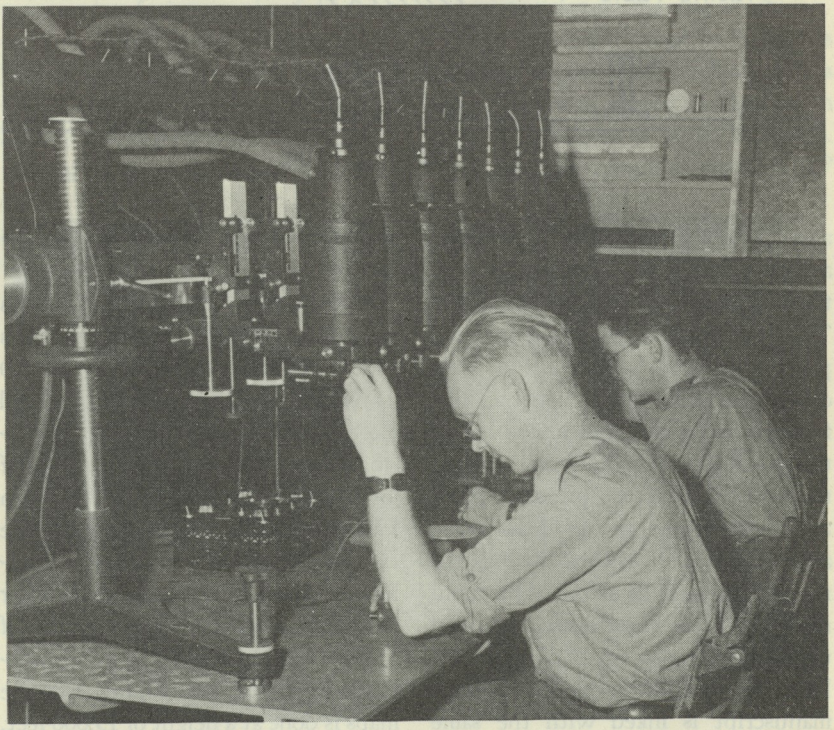
FIG. 5

and pass along, parallel to the table, to a smaller mirror and lens, which turns them downward towards the table. This smaller mirror moves along two parallel bars and allows for scale changes at different elevations. The ferro-prussiate mount is placed below the smaller mirror and on viewing through the lens, the principal point and minor control points of the image are made to fall over their corresponding positions on the mount. The detail is taken off, and the process continued until the features from all photographs have been transferred. The finished manuscript is inked with the same colours used for the photographs and then checked for any errors that may have occurred.

In the compilation of 1/50,000 maps the basic principles are the same as those already described for 1/250,000 mapping. In practice, mechanical methods of contouring and transferring detail are introduced. In areas of low relief the Wernstedt-Mahan Plotter is used, which combines the two operations of heighting and transferring detail to the manuscript after the ferro-prussiate, at a scale of 1/25,000, is returned from the photo-mechanical section. Flying for the maps is done at a height of 15,000 feet, giving a photographic scale of 1/30,000

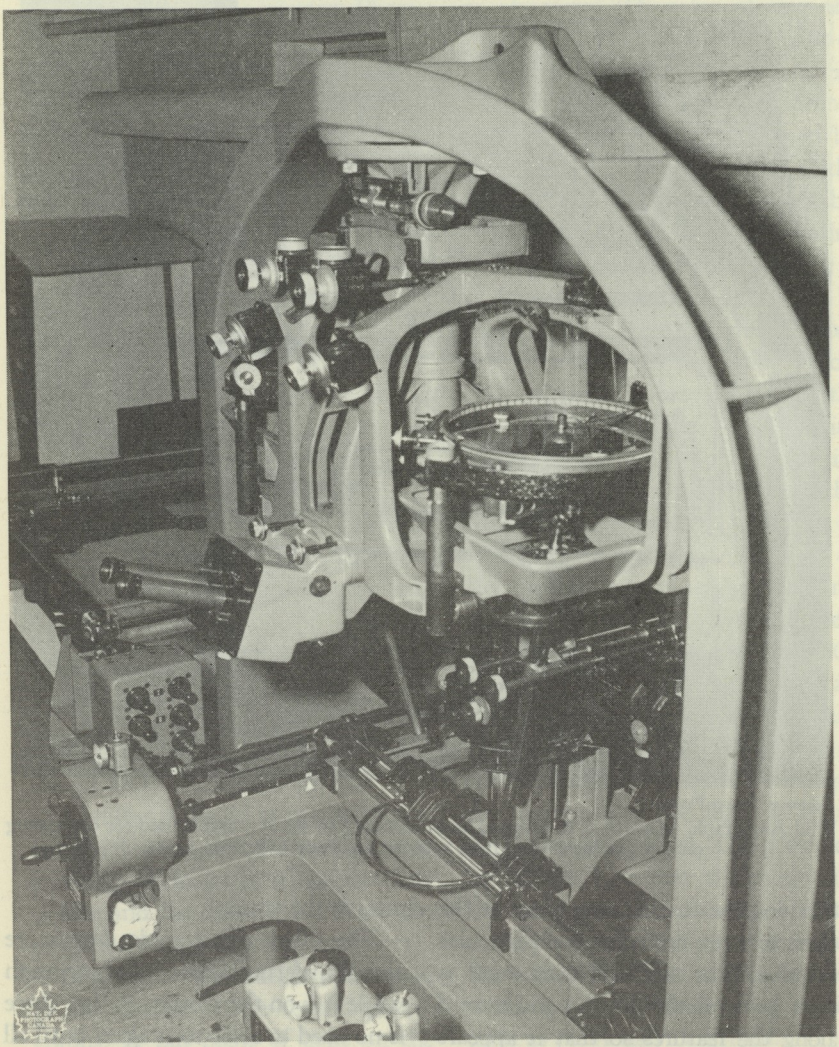
at mean ground elevation. The only variation as far as control is concerned from 1/250,000 mapping is that barometer heights are established by field officers along selected points in the portion of common overlap between flights of the aerial photographs.

The aerial photographs are set up in pairs on two separate tables under a stereoscope which is part of the instrument. Screws set beneath each table permit the operator to duplicate the position of the aircraft relative to the ground when the photograph was taken. The barometer heights at the top and bottom of each overlap assist the operator to do this. A bar carrying two dots on small plate glass pieces is attached by linkage to a pantograph on a side table which operates the pencil on the ferro-prussiate mount. These two dots can be fused under the stereoscope to give the impression of a floating mark which can be made to move up and down by moving the



Canadian Army Photos

The multiplex aeroprojector used for compilation of areas of high relief for a 1/50,000 map sheet.

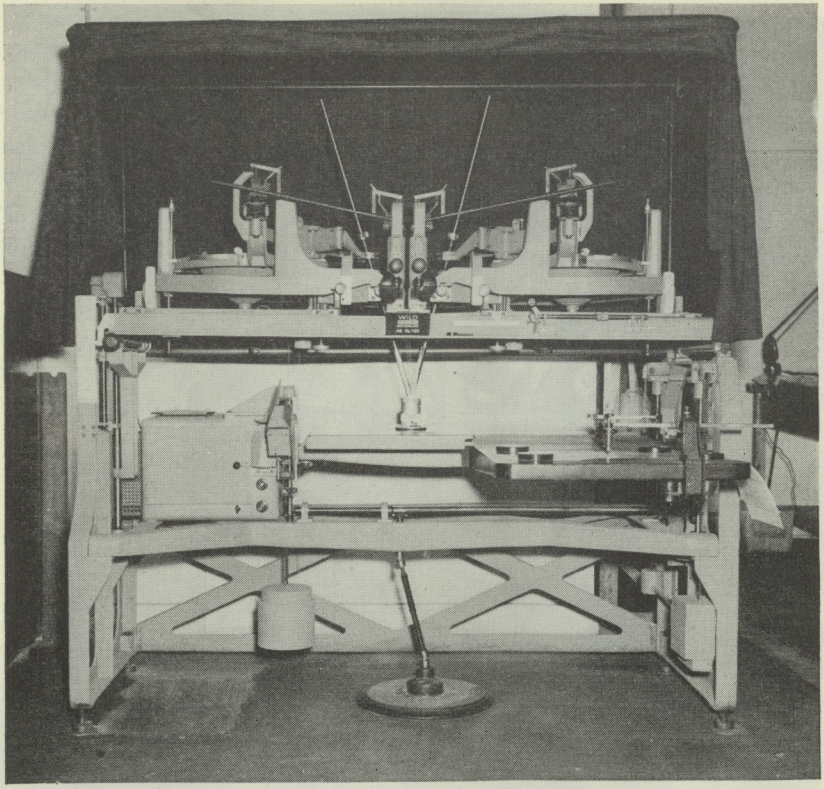


National Defence Photo

Wild Autograph, *Model A-5*, stereoscopic plotter. This instrument is capable of extreme accuracy over 25 overlaps, which for photography taken at an altitude of 30,000 feet is about 60 miles.

bar vertically. The pantograph provides the necessary scale reduction from the photograph to the map sheet.

Once the photographs have been correctly set up so that a true picture of the ground is obtained, the bar



National Defence Photo

Wild Autograph, *Model A-6*, is designed as an accessory to the *A-5* and is used for contouring on topographical scales from approximately vertical photographs.

carrying the fusable dots is set at the elevation required for the particular contour. The single floating mark is then kept on the ground and moved along the features so that it appears always to be on the surface. The line it traces out will be a contour and through the linkage mechanism the contour is transferred to the ferro-prussiate if it is correctly placed to receive the trace.

The other topographic details are also transferred from the photograph while it is on the plotter, so that there is no need to refer to it again until all the photographs have gone through this process. The manuscript is then inked as before and checked for error.

In areas of high relief, compilation for a 1/50,000 map sheet is done with

the Multiplex Aeroprojector. Photographs are taken at a height of 20,000 feet and dispositives, glass slides 2½" x 2½" in size, made from the original negatives of the photographs. There is no slotted template laydown, the grid values for control points being passed directly from the computing section through the field officers to the Multiplex operators. The identification of control stations on the photographs is done as before by the fieldmen, and the interpretation is also left to them.

The Multiplex projector is a small highly precise and very expensive "magic lantern", pointing downwards instead of in the conventional direction. Its suspension allows movements duplicating any change in direction or tilt that the photographic aircraft might have made in its flight. If two projectors are set up in proper relation to one another, they project a real image below as shown in Fig. 5. If a blue filter is placed in one projector, and a red one in the other, an operator wearing spectacles in which one lens is blue and the other red will see the projected image in three dimensions. This stereoscopic model is a miniature in all respects of the terrain photographs. A pin point of light on the tracing table platen (Fig. 5) forms an observing mark. A plotting pencil located immediately below the mark is used to transfer its position to the plot while a height counter records its elevation. Thus by placing the point of light exactly on any point of detail in the model, a value for its position and elevation can be found. A contour line may be obtained by setting the tracing table platen at the elevation desired and moving the table about the model, keeping the floating mark just touching the ground. It is possible with the multiplex to orient several projectors relating one to the other, thus producing a continuous stereoscopic model of the area covered by the corresponding photographs. The term "relative orientation" is used to describe this operation.

The first step in the process is to plot the positions of all control points on a paper trace at the scale chosen; this scale is usually about 1/12,500. The co-ordinates of two points are needed to position the strip, while at least three elevations at intervals of four overlaps are required to contol the topography. The flight is set up in relative orientation. The projectors are adjusted so that the model and the trace position coincide and the model is levelled off to the known elevations. The detail and topography is then taken off using the tracing table as previously described.

The completed traces are joined together and reduced to a scale of 1/31,680 in the photomechanical section. The prints are returned to the field officer who mounts them care-

fully in their correct positions onto a prepared zinc-backed grid. The completed manuscript is checked for error.

In the compilation methods that have been outlined so far, it has been assumed that there is sufficient horizontal and vertical control. This is not always so. In some areas the cost of normal fieldwork would be excessive so it is cut to a minimum and the Wild Model A5 Autograph is used to "bridge" between this control. This instrument is capable of extreme accuracy over 25 overlaps, which for photography taken at an altitude of 30,000 feet is about 60 miles.

The Autograph employs the same basic principle as is used for all precise stereoscopic plotters and measurements can be taken in the horizontal and vertical planes. Through a linkage mechanism, co-ordinates in the horizontal plane can be transferred to a plotting table alongside. Vernier micrometers connected to the movements of the instrument itself give readings for the position and elevation of points which can later be converted to horizontal and vertical co-ordinates. Glass diapositives, 7½" x 7½" are set in plate holders below two lights, and through a complex optical system the light rays are brought into two binocular eye pieces in front of the observer. Two fusable dots in the optical system appear as a floating mark on the stereoscopic model and vertical measurements are made with it.

In bridging, the initial model is oriented and levelled off to field control using the floating mark to obtain values necessary. The first diapositive is then removed and the third inserted in its place while the second is rotated through 180° by optical means. After the relative orientation of the second and third diapositives has been achieved, the fourth takes the place of the second. In this way an entire flight of photographs may be put through the instrument and relative values obtained for the position and elevations of points throughout.

The machine does excellent contouring but is most economically employed on bridging. The Wild Autograph A6 has been designed as an accessory to the A5 and is intended for contouring on topographical scales from approximately vertical photographs. Diapositives, 7½" x 7½", are used with the instrument, and readings taken on the A5 can easily be set on this machine. The views are placed in the holders and oriented to give a stereoscopic model as before. The floating mark traces out contours which can be transferred to a side table by a pantograph onto a strip of paper correctly placed to receive them.

The final result is a contoured strip at a scale of 1/31,680. These strips are mounted onto a grid board at the same scale and the manuscript checked for error.

(To be continued)

DELAYING ACTION IN OPEN TERRAIN

By
LT. COL. J. MAULE AND CAPT. BRUZELIUS*

In delaying action, terrain obstacles must be exploited in order to compensate for the numerical inferiority of the troops and weapons. Therefore, it is natural for our regulations to prescribe tactical methods for fighting in covered or wooded terrain, for combat in woods is traditional in Swedish defence plans.

However, our troops might be assigned difficult and extensive combat missions involving delaying action in open terrain, and such missions are given only summary treatment in the Swedish regulations.

This article will cover delaying action in open terrain, based on the lessons learned at a recent manoeuvre in Sweden. During the play of the manoeuvre, we were told that the enemy had air superiority and was a modern, well-equipped force.

The components of delaying action have been listed as:

1. Fire—delivered from combat positions, or in connection with counter-attacks based on limited objectives.
2. Demolitions and delaying field works—road and bridge demolitions, road blocks, and mine fields.
3. Movement—the reinforcement of positions, disengagements, and withdrawals.

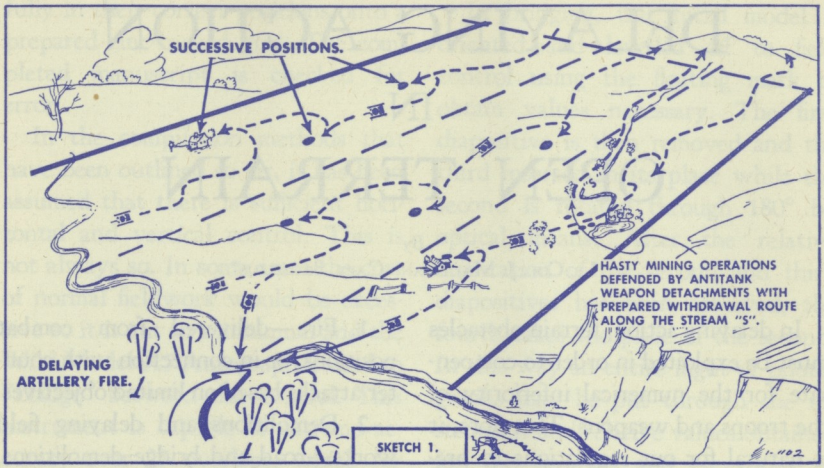
By comparing the use of these components in delaying actions, in covered and open terrain, the differences become apparent.

In open terrain, the fire component is increased. It can be laid down over longer distances, it is easier to direct, and it can be kept more mobile, both in depth and width. The latter point applies, particularly, to the fire from the artillery and mortar formations.

The use of demolitions and delaying field works to slow down the advance of the enemy requires more men and matériel than are normally available and, therefore, must be limited.

During daylight, and in the case of unprotected forces, mobility is de-

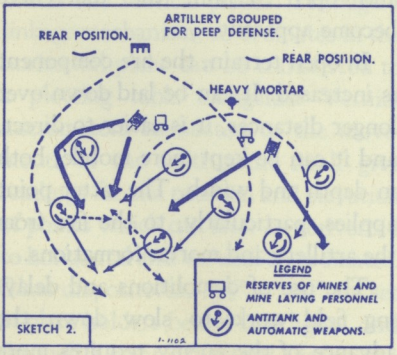
*This article was originally published in "Ny Militar Tidskrift" (Sweden). The translation is reprinted from the Military Review (U.S.).—Editor.



creased and at times impossible.

From the differences mentioned above, it should be apparent that in the case of delaying action in open terrain:

1. Fire is a decisive factor, and its

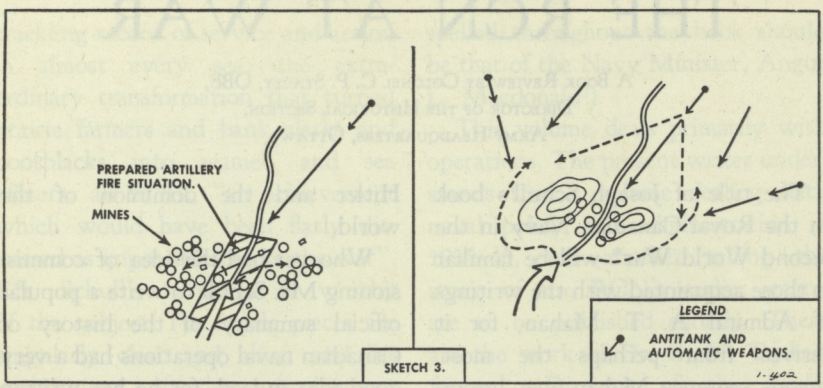


mobility must counterbalance the lack of mobility on the part of the combat forces.

2. Demolitions and delaying field works must be used, mainly, where good results may be counted on, with only limited commitments of personnel (for example, the blowing of a bridge to delay or hinder the advance of tanks and armoured formations). Moreover, the use of demolitions and delaying field works should attempt to draw or force the enemy into prepared approach routes, rather than attempting to stop him or force him into the open.

3. During the daytime, mobility can be assured only through the use of tanks and self-propelled artillery (with the exception of small troop units). In all other cases, troop movements must be made under the cover of darkness. Delaying forces, once engaged, should continue defensive action until darkness will permit their safe withdrawal.

Time is a vital factor in delaying action. Enemy forces seldom allow enough time to make elaborate defence

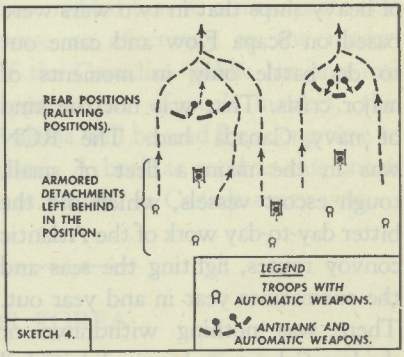


SKETCH 3.

plans, or to change organization structures to favor delaying action. The delaying forces, although of limited strength, must be trained sufficiently to detain the enemy. However, there must be reserve formations available to be used where needed. This reserve should include tanks and armoured formations in order to increase the mobility of the delaying forces during daylight and as protection against enemy fire.

Artillery is used to cover the areas between the armoured formations, and to protect the flanks. Smoke concentrations, fired by mortars and artillery, provide an efficient means for assisting the tank formations in making withdrawals. Self-propelled artillery if available, provides greater mobility and assistance in withdrawing and regrouping the tank forces. The use of self-propelled artillery also helps other artillery units in withdrawing and stabilizing the defense in depth.

The commander of each zone of action must have control of all forces in that zone. In addition, his command post must be located far enough to the rear to enable him to observe the action within the zone and issue the orders necessary to influence the conduct of the battle.



SKETCH 4.

During the course of the battle, the tanks deliver repeated concentrations of surprise fire, and then move to other positions in the immediate area, or toward the rear.

THE RCN AT WAR

A Book Review by Colonel C. P. Stacey, OBE,
Director of the Historical Section,
Army Headquarters, Ottawa

The title of Joseph Schull's book on the Royal Canadian Navy in the Second World War* will be familiar to those acquainted with the writings of Admiral A. T. Mahan, for it derives from perhaps the most famous sentence Mahan ever wrote: "Those far distant, storm-beaten ships, upon which the Grand Army never looked, stood between it and the dominion of the world". This reviewer has some doubt whether the phrase is really fully applicable to Canada's navy. It seems somehow more suitable to those shadowy fleets of heavy ships that in two wars were based on Scapa Flow and came out to do battle only in moments of major crisis. That was not the kind of navy Canada had. The RCN was in the main a fleet of small, tough escort vessels, which did the bitter day-to-day work of the Atlantic convoy routes, fighting the seas and the submarines year in and year out. There was nothing withdrawn or shadowy about it; but it did its full share of the job of standing between Hitler and the dominion of the world.

Whoever had the idea of commissioning Mr. Schull to write a popular official summary of the history of Canadian naval operations had a very good idea indeed, for he has written a first-class book. He is not a professional historian but (as Canadian radio listeners know) he is a most skilful and talented writer, and he has served in and knows the Navy; and he has a flair which has enabled him to use the excellent material collected and organized by the wartime Naval Historical Section to produce a sincere and eloquent volume,— a genuinely distinguished piece of literature as well as an important contribution to Canadian war history. This is a book which, on many counts, Canadian army officers will do well to be acquainted with.

The story of the Royal Canadian Navy in the Second World War is well calculated to appeal to a writer of imagination. The almost incredible expansion — from less than 4,000 men to nearly 100,000 men (and women), from thirteen ships and craft to some four hundred; the

**The Far Distant Ships: An Official Account of Canadian Naval Operations in the Second World War.* By Joseph Schull. *Ottawa: King's Printer, 1950. $3.00.*

crackling record of service and action in almost every sea; the extraordinary transformation that turned prairie farmers and bank clerks and bootblacks into seamen and sea officers; all in all, "an achievement which would have been flatly dismissed as impossible before the war". Mr. Schull's narrative is worthy of the subject. His battle pieces are singularly clear and alive, and his descriptions of the miscellaneous moving incidents of operations at sea would be hard to improve upon. The illustrations are exceptionally well chosen and the maps, though a bit uneven in quality, are attractive and informative. The author tends to avoid detail and statistics in favour of the broad impression; professional people will regret this, but a group of carefully compiled appendices fills many of the factual gaps. This reviewer has found few errors. (It does seem a pity, though, that, with so many names to choose from, the one selected to be misspelled throughout the book should be that of the Navy Minister, Angus L. Macdonald!)

This volume deals primarily with operations. The present writer understands that a volume dealing with naval policy and administration in 1939–45, and another telling the story of the RCN's earlier years, are to be published shortly. These are the work of Dr. G. N. Tucker, formerly Director of the Naval Historical Section and now a member of the history department at the University of British Columbia.

Two things particularly make *The Far Distant Ships* memorable: Mr. Schull's deep sense of the significance of this great episode of our national history, and the literary skill which has enabled him to communicate this sense so effectively to the reader. If the Canadian public has any real appreciation of such matters, this volume will be read for a long time to come. A book as good as this one is not written in Canada every year.

SUPPLIES FOR KOREA

It would take 320 freight trains of 70 cars each to supply the military support cargo now being carried into the Far Eastern Theatre every 40 days, according to Rear Admiral William M. Callaghan, United States Navy, Commander of the Military Sea Transportation Service. Petroleum products used in Korea during any 30-day period, Admiral Callaghan said, would require 250 tank-car trains of 54 cars each, or a little over eight trains (450 tank-cars) a day.—*Army-Navy-Air Force Journal* (U.S.).

TRAVEL ORDERS— VINTAGE 1779

Contributed by Major K. A. Toms, Canadian Army Representative, Office, Chief of Ordnance, Department of the Army, Washington, D.C.

The following is purported to be an authentic copy of travel orders issued during the American War of Independence by the Office of the Acting Commandant, Federal Defence of Yorktown and New York Harbour in Yonkers, New York. The orders are addressed to the Commanding Officer, 1st Light Infantry, Braddock Barracks, Miller's Junction, Rhode Island, and are dated 6 July 1779. They read:

"Issued necessary orders sending one enlisted man, on horseback, via safest and most convenient route, at Government expense to Fort Van Steuben, on the Ohio River below the junction of the two great rivers at Old Fort Pitt, for the purpose of carrying secret dispatches to Maj. Alonzo De LaFayette, who, at last official roll call, is the commandant of Fort Van Steuben. If, upon arrival, Maj. LaFayette is either dead or resigned, the soldier will deliver the dispatches to the immediate commanding officer.

"The expense section of the finance department will supply this courier with the necessary cash to buy himself sufficient food supplies to subsist him the entire journey. If the finance department at the destination is not functioning the enlisted man is authorized to barter with the neighboring Indians for necessary salt and other miscellaneous necessities for the return trip. Uniform buttons and musketry badges may be utilized in connection with bartering. If the situation warrants fraternizing with Indian tribes, due precautions will be taken insofar as the relief tepees are concerned, soldier making full use of his medical kit immediately after exposure. The expedition directed is considered necessary in the military service. Government mounts and subsistence will be furnished, and if used in bartering, uniform buttons and marksman medals will be replaced by the Government upon application for same by the enlisted man concerned.

"Upon return to his home station soldier will submit a written report showing the full names and ranks of commanding officers of all military forts visited, so that the Department of War can be informed and bring their rosters up to date."

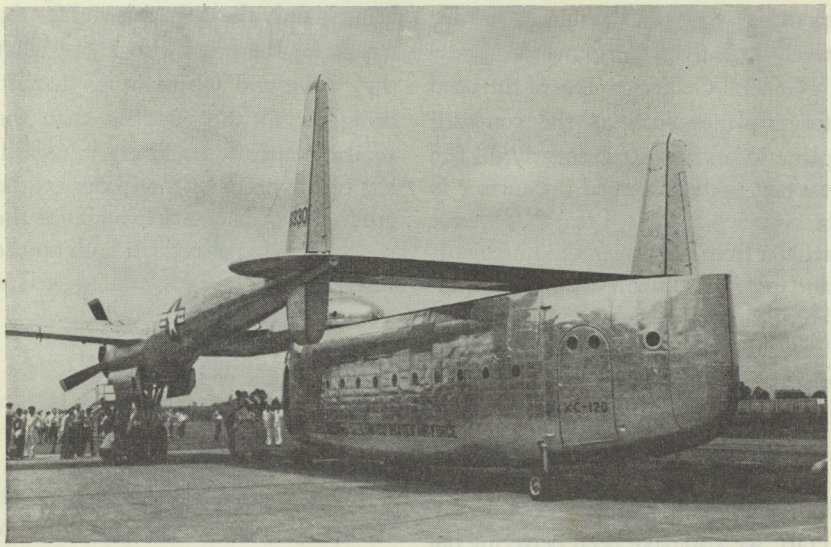


Photo by courtesy of Officers' Call

Detachable cargo compartments may be a characteristic of some of the future cargo aircraft. The C-120 is the USAF's first transport in which the cargo-compartment part of the fuselage may be uncoupled and hauled away.

AIR TRANSPORT

(Continued from Page 39)

munition ground troops need, as well as move troop units themselves.

In this regard, the Army has announced that it has requirements for helicopters from those capable of carrying one person to those capable of carrying extremely heavy loads. These larger helicopters, or "flying cranes", could transport the heavier weapons and other equipment of ground units.

The "Convertiplane"

Probably one of the most significant proposals of interest to the Army in the field of air transportation is the "convertiplane."* This is a plane that combines the best features of the conventional plane and the helicopter. Some proposed models contain propellers that may be rotated so that on take-off and landing they operate vertically like helicopters. Then when the plane is in the air, the propellers are turned forward so that they operate like conventional aircraft. Of course, the big advantage of such an aircraft is its independance of prepared

An article on this proposed type of aircraft, with drawings, was published in the January 1951 issue of the Canadian Army Journal.—Editor, the Journal.

airstrips while still retaining a relatively high flying performance.

General Collins expressed the need for airplanes such as the convertiplane when he stated recently, "I feel we have only scratched the surface in airborne operations. I feel that we are still far from meeting our requirements and potential capabilities in the airborne field. Our airborne troops must have more firepower, an airborne tank that some day we may be able to drop by parachute, and air transports of radical design that can operate independently of airfields."

Along with improvements in aircraft, we also have been bettering our parachute techniques. With bigger and better parachutes we have been able to drop larger items. We now have safely dropped at 2½-ton truck.

Best Use Of Supplies

The troops being supplied by air must make the most efficient use of the matériel they receive, regardless of how they get it. Not to be overlooked in this regard is the human element. The practice of supply discipline and supply control is a "must"—probably even more so than in any other type of operation.

To conserve on transports and not to overburden the troops in an airhead, we send only the supplies that are needed. And we see that the supplies are properly documented, packaged, and tagged. It is much better to bring in only the essentials and for the troops on the ground to know what they have and where it is, than to bring in all the supplies that the available aircraft could carry, regardless of the needs of the troops on the ground. Documentation includes the proper keeping of records both on the delivery and receiving end, as well as proper manifests for each flight.

Logistical Advantages

There are other advantages besides speed and versatility that air transport offers.

In the case of overseas warfare, air transport gives us the capability of delivery from factory to firing line (to a limited extent, we are doing this now in support of the fighting in Korea). This means that, within limitations, stockpiles for critical items are required only at the factory or nearby airfields and at the army supply points or their equivalents in the combat zone.

An ideal situation of having, at least in part, the productive capacity of the factory—rather than the manufactured goods on hand—as the reserve of supplies, would be almost completely realized. Our experience with some consumable items of large tonnage, such as ammunition, shows how we can overstock. The end of World War II found us with two-thirds of the tonnage of ammunition we had produced in stockpiles. More

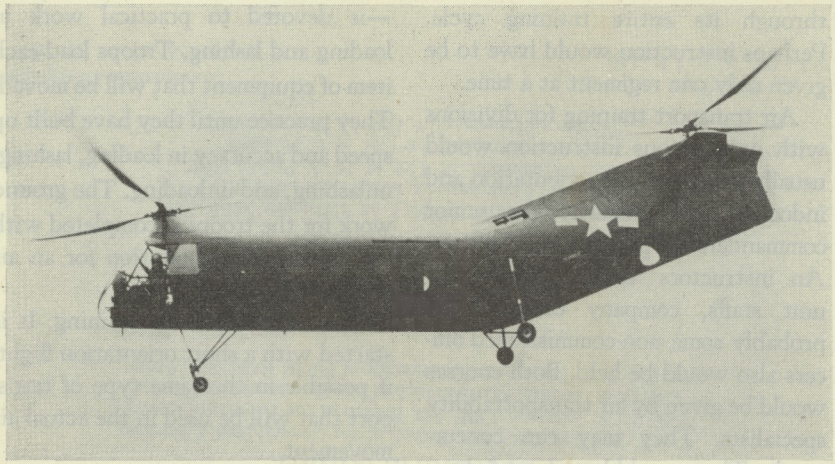


Photo by courtesy of Officers' Call

A "flying truck," the *H-21* can carry about two tons. Organic helicopter companies have been authorized for the U.S. Army.

efficient use of matériel means more efficient use of manpower.

In the use of manpower, it seems that savings could be made through air transport. It has been suggested that the number of "pipeline" personnel—troops in transit to support an overseas force—could be reduced drastically if these troops were moved by air instead of surface means. And movement would be speeded.

It was estimated that the moving of one ton of supplies per day from St. Louis to Coblenz by land and sea transport required at least 100 men, but that transport by air could reduce this to approximately 75 men. As methods of air transport are improved, of course, this manpower saving would be even more pronounced.

Air Transport Training

Air transport is by no means the concern solely of our top planners and research and development specialists. Because we no longer look on air transport as a novelty in moving troops and their supplies, each combat unit that can be air transported will receive training in how to move by air.

The local situation, to include the urgency of air-transport training, certainly affects the time it takes to teach a unit to move by air. Regimental units normally would need about 2 to 3 weeks. Probably because of limited facilities such as aircraft, mock-ups, and other training necessities — including instructors — it would take a division longer to run

through its entire training cycle. Perhaps instruction would have to be given only one regiment at a time.

Air transport training for divisions with no previous instruction would usually begin with an orientation and indoctrination primarily for senior commanders and principal staff officers. An instructors' training course for unit staffs, company officers, and probably some non-commissioned officers also would be held. Both courses would be given by air transportability specialists. They may run concurrently. They would last about 5 days.

Instruction for the entire unit usually begins with a period of preflight training. Included is instruction in characteristics of cargo aircraft and other types of planes; departure and arrival airfields; and flight safety to include how to use a parachute.

Next comes instruction in weight and balance computations; why aircraft must be loaded properly; and how we go about it.* Men are taught how to prepare ropes to secure cargo; knots and lashing technique, to include work in tie-down devices.

Most of the time—perhaps a week—is devoted to practical work in loading and lashing. Troops load each item of equipment that will be moved. They practice until they have built up speed and accuracy in loading, lashing, unlashing, and unloading. The ground work for the troops is completed with instruction in organization for an air movement.

The next step is air training. It is started with a short orientation flight, if possible in the same type of transport that will be used in the actual air movement.

Administrative procedures are then worked out for the forthcoming move. This gives the unit practice in preparing for a move and developing standing operating procedure. Various forms and manifests are completed. By staff and command work, it is possible to tell each soldier his specific duties, where his aircraft will be parked before loading; its number; what he will load; where he will ride; loading time; stations; and take off.

Then comes a flight with all equipment. It consists of a tactical exercise to include what has been taught in the course.

One of the decisive elements of modern war, air power means much more than the delivery of explosives on a target. Air power means also the transportation by air of all the means for waging war on the ground.

(Concluded)

**There is much more to loading an aircraft than simply filling one within the weight limitation. Allowable loads must be placed in certain positions and lashed properly so that the aircraft will have a safe balance during takeoff, flight, and landing. The load must also be secured so that it will not break loose under any condition of flight. Fortunately we can compute these requirements as well as determine whether the aircraft is safe to fly as we plan to load it.*

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