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ESTABLISHMENTS

THE NEED FOR REAPPRAISEMENT

Sergeant R. W. Valdan
Royal Australian Army Ordnance Corps

I — ASSESSMENT

AUSTRALIA'S political, ideological and cultural affiliations are with Europe and North America; geographically, however, we belong to Asia. Hence, accessible to potential enemies, we are isolated in all respects from our allies.

It is generally understood that in the event of war we would require outside assistance and that it could come only from the USA. However, there appears to be much wishful thinking about the size and the speed of such help. It should be realized that:—

(a) No one is obliged to help us, unless we will be ready to help ourselves. Otherwise we might be regarded as an expendable liability rather than an asset. Furthermore, the USA would rightly expect our *active, immediate and considerable* participation in war. This expectation we must fulfil—or bear the consequences.

(b) Australia is but one of the USA's global commitments and a minor one from that country's point of view. The home front, Europe, Middle East, Japan, Philippines and perhaps even Indochina would have higher priorities.

(c) Due to the shortage of long-range air transporters and higher priorities of other sectors, the air-lifted assistance would be of a moral rather than a practical value.

(d) Any sizeable assistance must therefore come by sea. Even if the submarine menace could be optimistically disregarded, the law of logistics would advise us to expect effective help to arrive no sooner than 4-6 months after the start of hostilities. During that period, perhaps longer, we would be on our own.

The depth of our awareness to the above-mentioned realities of life should be reflected in the state of readiness of the AMF. For practical purposes it means: modernity of our higher and lower establishments, weapons and doctrine.

An examination of the above, with particular attention to the require-

ments of infantry, is the subject of this article.

II — ANALYSIS

The composition of a unit's establishment is determined by its intended role and is shaped by the following problems:—

1. The influence of principal weapons.
2. Prevailing strategical and tactical doctrines.
3. Nature of terrain in which a unit might be engaged.
4. Manpower available.
5. Industrial capacity of a nation.

The Influence of Principal Weapons

Throughout military history the principal weapons of the time exerted a strong influence upon the structure of armed forces and their use. In this respect, the present era is dominated by the long-range missiles and atomic weapons. The former eliminates the concept of a safe hinterland, whilst the latter gives literally to one person the power of destruction equal to all the heavy bombers of the last war.

Singly or combined, the long-range and atomic missiles are termed "Area Weapons." Their high cost would preclude their indiscriminate use; a company or even a battalion would scarcely qualify as a potential atomic target. The small atomic bomb, however, can already be fitted into a medium gun's projectile and, perhaps, soon will be carried in a 3-in mortar shell. Consequently the size of a unit not meriting "The Bomb" will also shrink.

No active means of defence against area weapons exists to date. It has been accepted, however, by military and Civil Defence authorities that effectiveness of those weapons could be considerably reduced through:—

Mobility of units, thus allowing them to move rapidly away from a danger zone.

Dispersion, thus reducing vulnerability of a unit. Mobility and dispersion therefore are the keystones of survival in modern warfare. These principles must be rigidly observed at all levels despite several demands imposed upon the organization of units' establishments.

The need for mobility would demand a high degree of mechanization of the AMF.

The need for dispersion would aggravate the problems of command, liaison and, above all, logistics.

These problems could be solved by:—

(a) Reducing units' establishments as far as possible without impairing their effectiveness, as it is easier to handle a small unit.

(b) Equipping units with many and varied means of communication.

(c) Making units self-sufficient by carrying larger than hitherto supplies with the unit.

(d) Making units self-reliant and self-supporting by including within unit's establishment the elements of hitherto attached arms and services.

(e) Standardization and interchangeability of parts and limitation of types of weapons and vehicles.

Strategical and Tactical Doctrines

Until the end of the last war the action was fought along more or less

established linear fronts. The main principle of strategy and tactics was that of *a concentration of effort.* The German break-through in Belgium 1914 or France 1940 and a "wheel to wheel" amassment of over 1,000 guns at El-Alamein are typical examples.

The advent, however, of area weapons has changed this entirely. A concentration of troops or weapons, as quoted above, or "human sea" tactics employed by the Chinese in Korea, would now amount to suicide.

It can be envisaged now, that:—

- In defence, the necessity for dispersion would preclude the formation of established front lines, in favour of well spaced, mobile or entrenched centres of resistance.
- The attack would be fluid, carried out by infiltration, penetration and permeation rather than all-out assault. The action would be characterized by rapid, local attacks, aimed at quick destruction of the enemy and equally quick re-dispersion, before area weapons could be brought against the attacker.
- The conception of "wings" and "rear" would become largely meaningless for units, separated by unoccupied space. Hence *constant, all-round preparedness at all levels would be required.*

In general, this type of warfare would considerably reduce the advantage of sheer numerical superiority in favour of mobility, thus enhancing the value of relatively small but mobile and well-armed forces. It would be a war of "company and section commanders" rather than field-marshals, demanding excellency of leadership at all, particularly lower echelon, levels. Incidentally, it should well suit the Australian mentality with its penchant for individual daring rather than a large-scale action.

The organization of a unit should fulfil the following tactical requirements:—

(a) An increased subdivision of a unit would be indicated, as it is easier to carry out all-round preparedness with, for example, 5 than with 3 companies.

(b) Long-range weapons with increased fire power would be required at all levels, to:—

- Dominate increased unoccupied space between units *in defence.*
- Give sufficient support *in attack,* bridging the space between units.

(c) Weapons and vehicles should be light and able to move cross-country.

AMF's Future Battleground

Australia will never be an aggressor. It is realized, however, that it would be impossible for us to defend this country "fighting on the beaches," as it were. The need to protect the industrial heart of Australia (roughly: Newcastle-Sydney-Melbourne-Geelong) is also self-evident. Hence it has already been accepted as our official doctrine that in the event of war, we will endeavour to defend the approaches to our mainland, trading space for time and manpower and regarding fighting in Australia itself as a last resort.

The terrain in the approaches to the "heart of Australia" falls broadly into two classes:—

(a) Jungle, such as Malaya, the chain of islands between the Asian and Australian mainlands, and also parts of our North.

(b) Desert, semi-desert and arid country: Middle East and a large part of the Australian mainland.

Considering the distances involved and the overwhelming manpower of our possible enemies and comparing them with our resources, it appears that speed of action must be our substitute for lack of numbers. Only through *mobility* would we be able to achieve local superiority, or to carry out the delaying action by lightning raids on the "hit-and-run-and-hit-again" principle.

The terrain of our future battlegrounds imposes therefore the following requirements upon the organization of the AMF:—

(a) Establishments of the AMF must be flexible, easy to adapt to the jungle or desert conditions.

(b) Weapons and equipment must be able to withstand humid heat as well as the corrosive effect of sand; be light and easy to maintain; spare parts should be interchangeable with USA weapons and vehicles.

(c) The requirements of mobility would preclude or limit the use of heavy weapons (tanks, guns). The following weapons would be required:—

- Machine carbines, automatic rifles, rocket launchers and recoilless rifles of various calibres (mostly jeep mounted), ordinary and multi-barrelled mortars, grenades, explosives and flame-throwers. For close-in fighting an invention is advocated of a shell with blunderbuss effect, launched by a one-man rocket launcher or a recoilless rifle.

  Supporting artillery fire should be supplanted by ship or aircraft-borne ballistic missiles.

(d) Vehicles should be of a light jeep type, with independent four-wheel suspension, air-cooled, rear placed engine and an auxiliary 4 x 4 gear. Such vehicles would be less likely to sustain damage during a cross-country movement and would be independent of water supplies.

(e) A thorough training in night movement, embarkation and debarkation, and, in general, an attitude of "self dependency" is of paramount importance.

The Manpower

The manpower of Australia is strictly limited. Moreover, three-quarters of the populace, congested in a few cities, could be wiped out by a handful of submarine-borne bombs. It is clear, therefore, that we cannot afford to trade losses with the enemy, we are too few.

The civilian-only old delusion that "One Aussie is as good as 20 gooks" was not confirmed during the Korean War: our losses therein were 1 against 1.8 of the enemy. Even this favourable ratio would bleed us white. For us, each serviceman lost is irreplaceable.

The state of our manpower, therefore, imposes upon the AMF organizational demands which could be

summed up as: "substitute manpower by firepower."

It should also be realized that the fighting value of a unit should be measured by the result achieved, not by the percentage of losses sustained.

Industrial Capabilities

A nation's realistic planning of military equipment is in direct ratio to the nation's industrial capabilities.

Australia's industry is comparatively well developed. In the event of war, however, its productivity would be adversely affected by distances between the coal and iron ore producing centres, general vulnerability of all means of communication and limited manpower available. The limitations of outside assistance were outlined in Part I. Our industrial capabilities will be strained to the limit.

All these difficulties could be at least partially overcome by:—

(a) Restriction of production of weapons to those which could be produced quickly, in quantities and cheaply, e.g., multi-barrelled mortars instead of guns.
(b) Restriction of production of weapons to a limited number of types.
(c) Realization that with our limited resources we cannot match the big Powers' achievements.

The Summing Up

To sum up: the modern infantry establishment should be:—

(a) Mobile, light, adaptable.
(b) Small in manpower; strong in fire-power.
(c) Self-sufficient, self-reliant, self-supporting.
(d) Capable of all-round preparedness.
(e) Equipped with a limited number of types of weapons and vehicles.

None of the above characteristics could be applied to the existing establishments, which (by comparison) are unwieldy, heavy and above all, woefully under armed.

To give an example, an Australian infantry battalion consists of some 900 men; a division of over 19,000. The corresponding figures for the Soviet Armed Forces are approximately 500 and 11,000 respectively. Yet the fire-power of these so much smaller units exceeds ours by 50 per cent on a battalion and about 200 per cent on a divisional level. Comparisons with the Chinese Communist and Viet-Minh forces would be more or less similar. In other words, we, not our potential enemies, tend to employ manpower instead of firepower, despite the fact that we are so few, and their manpower is almost unlimited.

From the national survival point of view, this policy borders upon lunacy; it is just too illogical to be continued as it would lead to a disaster in an event of war.

Unless we reorganize our Armed Forces according to the present and future needs, we will have to pay the price for our tardiness in the irreplaceable lives of our men.

III — SOLUTION

A draft of an establishment of an infantry division, based upon the conclusions of the previous sections, is presented herewith. This draft is intended to serve as a basis for dis-

cussion rather than the solution *per se*. It is, therefore, constructed in broad outlines; more detailed establishments of lower echelons were made to illustrate the point.

General Characteristics

(a) A highly adaptable, pentagonal system has been adopted throughout, thus allowing for all-round preparedness, and tactical flexibility in the field.

(b) The suggested Establishment could be easily converted from "a home and desert type" to "a jungle type," by the implementation of note *, Para 2, Chart D.

(c) The flexibility of command has been achieved by providing 2ICs with their own HQs, fully equipped and capable of independent action.

(d) The *double flexibility* (tactical and of command) will allow Divisions to form and detach independent combat teams, according to the requirements of the situation.

(e) The personnel position is characterized by:—

(i) Very high percentage of men, in "fighting" placings;

(ii) Very low percentage of clerks, administrative staff and other non-fighting or otherwise "dead-wood" personnel. This would lead to a compulsory and most welcomed reduction of paperwork, allowing soldiers to be just soldiers, not penpushers in uniform.

(iii) High percentage of NCOs.

(f) All weapons suggested by this establishment could be mass produced in Australia, thus making the AMF virtually independent of overseas supplies for the first time in its history. These weapons would also be eminently suitable for the type of warfare as envisaged in previous sections (Part II). The following points are considered essential:—

(i) *Introduction of an anti-aircraft rocket.* Existing types of A/A guns are too heavy and/or possess too slow a rate of fire. Above all—the velocity of their shells is low, e.g., the speed of a Bofors shell is actually slower than that of a modern fighter-'plane. Only a rocket with a 2 or 3 Mach speed could be successful in the circumstances.

(ii) Introduction of a one-man "Bazooka" (or rocket-launcher, or recoilless rifle) described in Part II, should receive highest possible priority. Only this, or similar, weapon, would give our patrols that necessary "edge" over numerically superior enemies, especially during jungle fighting. A "burp-gun" could meet an Owen gun on equal or better terms, but certainly could not compete with a "bazooka."

(iii) For better portability of heavier weapons (e.g., mortars) the use of light collapsible hand-trolleys is suggested.

(g) Three only basic types of vehicles are envisaged within a division:—

(i) A universal jeep-type, light (approx 12-15 cwt) vehicle, as described in Part II. (A converted Volkswagen-Minibus could temporarily be used as an all-purpose jeep).

(ii) A prime-mover, for heavy rockets, mortars, etc.

(iii) A 5-ton (or more) truck 6 x 6 for carrying supplies.

A few scout-cars (for liaison officers) and 25-30 light tanks (for Recce Coy) could also be added, opportunities and availability permitting, but these could be supplanted by Universal Jeep, if necessary.

Use of trailers (1 ton) with majority of jeeps, is also advocated.

(h) Liaison would be ensured by:—

(i) Inclusion of Signals elements, as an integral part of all units, down to a company level.

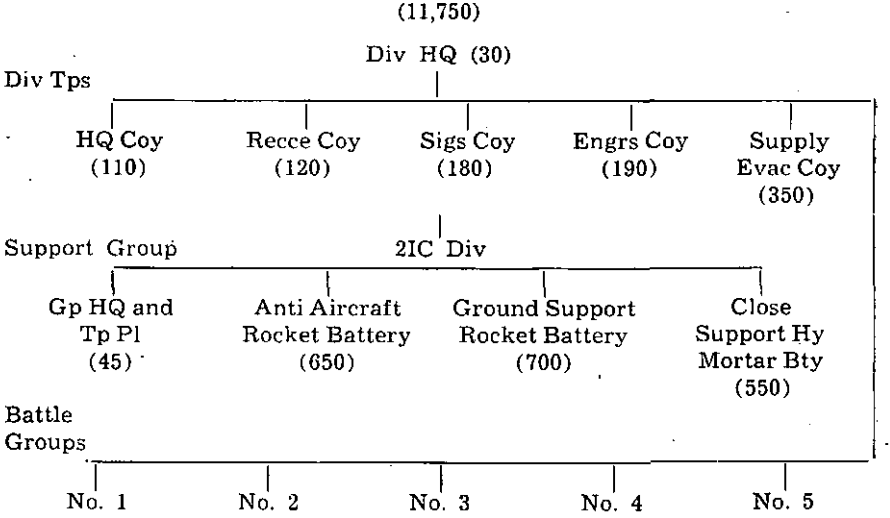
(ii) Widespread use of radio.

(iii) System of liaison officers.

(j) Other characteristics:—

(i) Units are made self-supporting by the inclusion of supporting arms and Engin-

ESTABLISHMENT OF A DIVISION



NOTES: 1. Div HQ — incl. 10 MPs.

2. Recce Coy — could be equipped with light tanks or armd cars.
3. Sigs Coy — incl 10 liaison officers (scout-cars).
4. Support Group: (Gp HQ and Tp Pl) Transport Platoon for quick ammo delivery.
5. Battle Groups: for detailed estb see next chart.
6. Attached: Hospital (Field) — when required.
   75 helicopters and 25 light planes — for supply and evacuation.

Chart A

eer elements down to a section and a company level, respectively.

(ii) By carrying large stock of supplies (ammunition, petrol, food) units became self-reliant and self-supporting. (A 12-15 cwt vehicle (plus a trailer, if required) could easily carry 5-6 men, arms and stock of supplies.)

It could be asserted, therefore, that the suggested Establishment would fulfil all requirements outlined in the previous sections of this article.

Organization

The suggested establishment of a division (home and desert type) is presented in this chapter in four diagrammatical charts.

CHART A—Establishment of a Division.

CHART B—Establishment of a Battle Group.

CHART C—Establishment of a Battle Company.

CHART D—Establishment of a Battle Platoon.

Conclusion

The implementation of the suggested organization should not be difficult, because the equipment mentioned therein is either:—

(a) Already being produced in Australia (machine carbines, vehicles).

ESTABLISHMENT OF A BATTLE GROUP

(73 offrs, 1,696 ORs — Total 1,769)

Gp HQ (9 + 21)

HQ Coy (9 + 108)		AA Rocket Coy (7 + 134)		Hy Mortar Coy (8 + 198)	
HQ	3 + 7	HQ and Sp Sec	2 + 14	HQ	2 + 16
Recce	1 + 9	1st Plat	1 + 24	Sp Platoon	1 + 14
Sigs	2 + 28	2-5th Pl	4 + 96	1st Pl	1 + 34
Engrs	2 + 28	Note:		2-5th Pl	4 + 136
Adm	1 + 34	Each Pl:—		Note:	
Med	2	Comd Sec	1 + 4	Sup Pl—3 patrols—	
Notes:—		5 Secs	4 ea	recoilless rf ea	
Recce—Five 2-men patrols				Each Pl—	
				Comd Sec	1 + 4
Sigs and Engrs (ea)				Sup Sec	5
Comd Sec	1 + 4			5 Secs	5 ea
Equip Sec	1 + 4				
5 secs	5 ea				

No. 1 No. 2 No. 3 No. 4 No. 5

Battle companies

Chart B

ESTABLISHMENT OF A BATTLE COMPANY

(8 Offrs, 247 ORs — Total 225)

CO (Lt-Col or Major)

Command Platoon (19)

(a) Command Section
CO, St/Sgt (Sigs), Cpl (Sigs), Runner, L/Cpl-dvr
1 short "bazooka"
2 machine carbines
2 autom rifles
2 wrls sets (to HQ Battle Gp and to Pls)
1 12-cwt jeep
Note: A light "corgi-type" scooter might be carried.

(b) Adm Section
CSM (WO), Cpl-Clerk, 3 Pts (cooks, etc.), 1 L/Cpl dvr
3 mach carbs, 3 autom rfs
1 wrls, 1 12-cwt jeep

(c) Engineers' Section
1 Sgt, 1 Cpl, 3 Pts, 1 L/Cpl-dvr
3 mach carbs, 3 autom rfs
1 walkie-talkie (optional)
1 jeep, flame-throwers, etc, as required

(d) Medical Section
1 Sgt (RAAMC), 1 Cpl (RAAMC), 1 L/Cpl-dvr
1 walkie-talkie
Note: 1 light "corgi-type" scooter might be carried

Mortar Platoon (2 + 33)

(a) CO (Captain. Also 2IC Coy)
Command Section establishment —as Comd Sec in Comd Pl

(b) Support Section
Lt (2 IC Pl), Sgt, Cpl (Sigs), Pte, L/Cpl-dvr
1 recoilless rifle
2 machine carbines
2 automatic rifles
1 wrls, 1 jeep

(c) Five Mortar Sections, ea:
Sgt, Cpl, 2 Pts, L/Cpl-dvr
1 mortar (provisional: 4.2)
2 machine carbines
2 automatic rifles
1 walkie-talkie, 1 jeep

No. 1 No. 2 No. 3 No. 4 No. 5

Battle platoons

Chart C

(b) Planned to be produced shortly (FN automatic rifles).

(c) In the development stage (rockets).

Also, some of the existing equipment, namely, 2-in and 4.2-in mortars could be used as a stop-gap measure before modern, automatic mortars could be introduced. The much needed recoilless rifle could be based upon the 75-mm jeep-borne USA-made rifle, which is already standard equipment of even the Jordanian Army, and which could easily be manufactured in Australia.

Bearing in mind that in the event of war, our mainly UK-made guns and tanks could not be maintained for long, *we would have to develop our own armament industry.* It would be better, therefore, to make a bold decision now and build weapons, suited to our requirements, instead of clinging to outdated equipment.

There exists, however, one oft-repeated argument against the modernization of the AMF that "the nation cannot afford such expenditure." This argument must be refuted, because:—

(a) Australia cannot afford to repeat the folly of the last war of

ESTABLISHMENT OF A BATTLE PLATOON
(1 officer, 39 ORs — Total 40)

CO (Capt or Lt)

Command Section (CO + 4)
CO, Sgt, Cpl (Sigs), Pte, L/Cpl-dvr
1 recoilless rifle
2 machine carbines
2 automatic rifles
1 wrls, 1 walkie-talkie (option)
1 jeep

Support Section (5)
WO (2IC), Cpl, Cpl (Sigs), Pte L/Cpl-dvr
1 recoilless rifle (see note)
2 machine carbines
2 automatic rifles
1 wrls (plus optional walkie-talkie)
1 jeep
Note: A 4.2 mortar may be carried in lieu

No. 1 | No. 2 | No. 3 | No. 4 | No. 5

Battle Sections (ea):

S/Sgt or Sgt, Cpl, 3 Pts
1 short "bazooka" (†)
2 automatic rifles
2 machine carbines
1 walkie-talkie (optional)

(*) L/Cpl-dvr
1 machine carbine
1 mortar 2-2½ in. (†)
1 jeep

Note: (*) Deleted in a jungle establishment.
(†) Interchangeable, according to the requirements.

Chart D

sending yet again ill-equipped soldiers into a hopeless fight.

(b) In no way can we afford to face well-armed and numerically superior enemies, whilst ourselves being equipped with obsolete rifles, obsolescent vehicles and outdated guns and 'planes. We have no men to spare.

(c) Considering that Australia ranks fourth among the wealthy nations of the world and also considering the millions of our potential enemies largely hostile towards this country, the need for adequate defence is self-apparent and long overdue. A Pearl Harbour-like attack could destroy Australia overnight. The time for action, therefore, is NOW.

There was yet another special check during the war upon love and respect for the higher commands. There were so many things of moment which they were the last to find out. Time after time the great ones of this world were seen to be walking in darkness long after the lowly had seen a great light. While the appointed brains of our army were still swearing hard by the rifle, and nothing but it, as the infantry's friend, a more saving truth had entered in at the lowly door of the infantry's mind. Ignoring all that at Aldershot they had learnt to be sacred, they contumaciously saw that so long as you stand in a hole deeper than you are tall you never will hit with a rifle bullet another man standing in just such another hole twenty yards off. But also—divine idea!—that you can throw a tin from your hole into his.

—C. E. Montague in "Disenchantment," 1922.

DEFENCE PROBLEMS OF IRAQ

Major Ali Husain Jasim
Iraqi Army

IRAQ is one of the new Middle East Arab countries which have emerged since the First World War, yet historically it may be regarded as among the oldest in world politics. Civilization began with the Sumerians, followed later by the Babylonians, and the Assyrians, and Iraq remained one of the two principal centres of human progress until the fifth century BC.

With the rise to power of the Arabs, Iraq took its place in a new empire comprising almost the whole of the Middle East, and when the political focus of that empire shifted to Baghdad, Iraq found itself once more in the ascendant. Once more it returned to its historical role as the centre of the civilized world and retained it for five centuries, until the Mongol invasions. The Mongol wave rolled westwards and subsided, and the Ottoman Empire which arose in its wake claimed Iraq as an insignificant province.

A movement for liberation from Turkish rule was an immediate result of the First World War culminating in Great Britain being given a mandate for Iraq in 1920. In August 1921 Emir Faisal I (grandfather of HM the present King Faisal II) was proclaimed King of Iraq.

In 1929 Britain and Iraq declared their intention to bring the mandate to an end and for this purpose a new treaty was concluded in 1930, by virtue of which Iraq became the ally of Britain. This Treaty was followed by the Baghdad Pact in 1955.

Western Interest in the Middle East

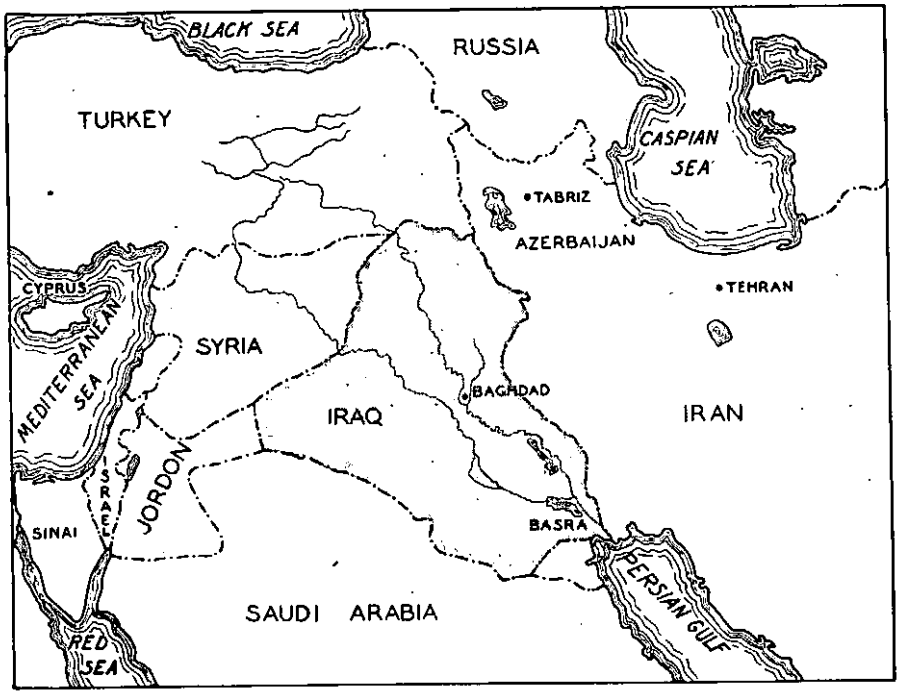
The major interests of Britain and other Western Powers in the Middle East are in the security of:—

(a) Oil supplies. It is estimated that about 60 per cent. of the world's proved oil resources are situated in the Middle East, of which Iraq produces at least 25 per cent.

(b) Military bases.

(c) Communications in and through the Middle East.

(d) Export markets.



Iraq and Middle East

Importance of Iraq

Iraq is bordered on the north by Turkey, on the west by Syria and Jordan, on the south by Saudi Arabia and the Persian Gulf, and on the east by Persia (Iran).

Iraq is a natural corridor between the Mediterranean and Turkey on one side and the Persian Gulf on the other side. This central position, giving an easy access to the Persian Gulf and to the Mediterranean, its oil resources and its position on the main air routes from Western Europe to the East, Far East and to Australia make it one of the most important countries of this area.

Defence Problems of Iraq

There are two major problems in the defence of Iraq. The first problem about which Iraq and the other Arab countries are worried is the existence of Israel. For this reason Iraq, with the other Arab countries, joined the Arab League. The reasons for Arab sensitivity about Israel are because it has so far refused to confine itself to the borders given to it by the United Nations beyond which it has already expanded. A second reason is the eviction without compensation of one million Palestinian Arabs from their houses, lands and properties. Thirdly, Arabs feel that Israel intends to expand at the expense of neighbouring Arab States in order to accommodate the large number of Jewish immigrants which continue to arrive in Israel. To deal with this problem demands complete

co-operation between all the Arab nations.

The second problem which Iraq and other non-Arab countries are worried about is an attack by a communist state. Iraq has no common frontier with the Soviet Union, but it is separated from it by less than 200 miles across Azerbaijan. Tabriz, the capital of Azerbaijan, is about 100 miles from the Iraqi border and only 85 miles by rail from Julfa on the Soviet railway system. Obviously, the defence of this frontier depends on close co-operation between Iraq, Turkey and Iran. This was the main reason why Iraq initiated a defensive pact with Turkey which later expanded into what is now known as the Baghdad Pact.

It is equally clear, however, that the Middle East countries, including Turkey, do not themselves have the resources to play a decisive role in the defence of this part of the world. Singly they are certainly incapable of doing so, and even when acting together in close co-operation they will still need outside assistance.

Conclusion

The integrity, independence and stability of Iraq, Turkey, Iran and all the Arab countries, and the maintenance of harmonious relations between them and with Britain and the United States are matters of primary importance to the security of the Middle East. However, the key to this state of affairs is held by the Western Powers, who alone are in a position to solve the two major problems of this area.

In the missile era the man who controls the land will control the air above it. The control of land areas will be decisive.

The Army is better oriented for the air defence job of the the future. We want 100 per cent. air defence and we consider this attainable. There has been no schizophrenia in the Army about how to get an air defence. We haven't worried about jet interceptors. We have gone after missiles. Very little, if anything, is going to get through us.

—Lieutenant-General James M. Gavin, United States Army.

MANCHURIA

COMMUNIST KEYSTONE

O. Edmund Clubb

Reprinted from the November 1957 issue of the "Military Review," Command and General Staff College, Fort Leavenworth, USA

HALF a century ago a United States Secretary of State, John Hay, observed that, "The world's peace rests with China, and whoever understands China . . . holds the key to world politics during the next five centuries." The United States today is beginning to appreciate the significance of that forecast.

In the activation on 1 July 1957 of the United States Pacific Command, coincident with abolition of the Far Eastern Command, the shifting of responsibility for Alaskan defence, and the removal of the United Nations Command Headquarters from Tokyo to Seoul, there was an implicit recognition of the shifting of power factors in the west Pacific.

The nearly simultaneous announcements in June of the American agreement to withdraw US ground forces from Japan and of the United Nations Command's intention to start arming its troops in Korea with the latest weapons fell in the same general pattern. The focus of the power factors is Manchuria—powerhouse of east Asia. (For the purposes of this article the term "Manchuria" is used in its earlier sense, to comprise the area formerly known to the Chinese as the "three north-eastern provinces" and Jehol Province. Under the Peiping regime the boundaries of the several provinces have been substantially altered, and the western part of the entire area, once described as "eastern Inner Mongolia," has been incorporated in the Inner Mongolian Autonomous Region. By present Chinese usage, the "north-eastern provinces" comprise an area of only 342,000 square miles, with a population of 47 million, *exclusive* of eastern Inner Mongolia.)

Geographic Importance

Manchuria's geographic position is suggestive of its significant strategic role. It is located where China, Russia, and Japan face each other in an eternal triangle—Japan, from across the narrow bridge of Korea. Possessing vast rich agricultural lands in an area of 481,000 square miles, its population has grown from about

14 million in 1900 to upward of 50 million. At V-J Day over 40 per cent. of China's railway mileage, 75 per cent. of the electric-power capacity, 70 per cent. of the heavy industry, and 90 per cent. of China's steel production were located in Manchuria. With the best developed transport system on the Asiatic mainland, including a network of airbases, useful inland waterways, and such admirable seaports at Hulutao, Tatungkow (at the mouth of the Yalu River), Dairen, and Port Arthur, Manchuria has the communications facilities to support its role.

It is purported that the will of the Japanese Emperor Meiji, who died in 1912, proposed that Japan, having annexed Taiwan and Korea, should next undertake the conquest of Manchuria, Mongolia, and China Proper; thereupon the rest of Asia, including the South Seas, would lie at her feet. History confirms Manchuria's key importance in east Asian politics, The decisive battles of the Sino-Japanese War of 1894-95 were fought in Manchuria, as were the land engagements of the Russo-Japanese War of 1904-05. It was the Japanese invasion of Manchuria that led to the Sino-Japanese War of 1937-45 and—almost as inexorably—to Pearl Harbor. When the Soviet Union entered the war against Japan in August 1945 the action again took place in Manchuria.

Geography alone fore-ordained Soviet-American rivalry in that part of the world. Kamchatka and that part of Siberia lying east of the Lena River abut on Alaska, purchased from Russia in 1867; the Russian eastward expansion in the modern period; and the American movement westward into the west Pacific have been factors in that rivalry.

Land areas lying between neighbouring spheres of influence upon occasion in the past have become the foci for great power rivalries in that region. Chinese, Japanese, American, and Russian influence converged on Korea at the end of the 19th century. At the end of the 18th century, Russia threatened Hokkaido (then Yezo) from a position in the Kurile Islands. (It was only by an agreement of 1875 that Russia withdrew from the Kuriles in exchange for Japanese withdrawal from South Sakhalin; it was by her victory in the Russo-Japanese War that Japan regained South Sakhalin.)

Post-war Calculations

Through the provisions of the Yalta Pact the Soviet Union on V-J Day recovered control of South Sakhalin and the Kurile chain. The Sea of Okhotsk became strategically a Soviet lake and a defensive glacis for Primorye and the rest of the Soviet Far East. The Soviet position was again advanced on Sakhalin to within stone's throw of Hokkaido, and Japan as weak as she was a hundred years before once more was caught in the middle.

Manchuria entered early into American post-war calculations. Ambassador Edwin W. Pauley, in his July 1946 "Report on Japanese Assets in Manchuria to the President of the United States," defined the pertinent US policy of the period:

> *United States policy in the post-war Far East was predicated upon the establishment of China as a strong, stable, united nation, with a basic economic self-sufficiency, so that nation could take its proper part in the*

development of a peaceful Asiatic economy. During the years before and after Pearl Harbour the Japanese had created in Manchuria a tremendous industrial structure which was definitely tributary to the economy of Japan. Had this structure remained as intact as it was on the date of Soviet occupancy and had China remained peaceful, the Manchurian industrial complex could have readily been integrated with China's growing economy and so greatly accelerated the over-all Chinese industrial development . . . It was presumed that China could fill, at least partially, the economic vacuum resulting from the Japanese defeat and the consequent imposed reduction of Japan's productive capacity to a peacetime level.

The die was cast in an unfavourable mould, from the American point of view, when the Chinese Nationalists after V-J Day adopted the heady slogan, "China will survive or perish with the north-east (Manchuria)." It was the stunning Communist defeat of the over-extended Nationalist forces in Manchuria in the fall of 1948 that presaged the collapse of Nationalist power in China. Within two years the Chinese Communists had so consolidated their position that they confidently intervened in the Korean war—using Manchuria as their military base for that action.

The Communists have worked energetically to rehabilitate the Manchurian economy, and to give it the importance suggested in Pauley's report. The area promptly resumed its pre-war function of providing agricultural surpluses. In the relatively lean year of 1949, Manchuria in 10 months shipped 854,000 tons of grain to China Proper; in 1950, such shipments were reported to total 2.6 million tons. The cultivation of virgin land and the development of more and bigger state farms has brought Manchurian agriculture to a stage where one province alone, Heilungkiang, was able to provide 640,000 tons of soybeans for export to the Soviet Union, Poland, and other foreign countries in 1956. Manchuria's agricultural surplus partly goes to meet shortages south of the Great Wall; but it also is used to pay for a large share of China's imports of industrial machinery, farm tractors, and railway equipment from abroad.

Industrial Potential

Manchuria is relatively rich in coal, iron ore, and other minerals, and in hydraulic-power potential. Its industrial plant measures up well to that of Japan and India—the only other Asian countries which can claim to possess a modern industry. Major Manchurian industrial *capacity* (at which the plant had never actually operated) in 1945 was estimated by the Pauley Mission as follows:

Material	Metric Tons
Coal	25,000,000
Pig iron	2,524,000
Sponge iron	112,550
Steel ingots	1,330,000
Semi-finished steel	1,000,000
Finished steel	860,000
Electric power	1,790,000*

* kilowatts.

Industrial capacity was reduced severely in the post-war period by Soviet removal of plant equipment as "war booty," and by the destruction and disorganization caused by the bitter Chinese civil war. In 1949

pig-iron production was only 172,000 tons, steel ingots 100,000 tons, and coal 11 million tons. Peiping claimed that China essentially had regained her pre-war level of agricultural and industrial production by the end of 1952, but this could hardly have been true for Manchurian industry. Nevertheless, the Chinese drew heavily upon the 1950 five-year Soviet credit of 300 million dollars, and upon their own energy and resources, and early made a good showing towards restoring Manchurian industry's productivity. In 1954 pig-iron output amounted to approximately 1,500,000 tons; steel ingots 690,000 tons.

Production now is even more impressive. Peiping claims that in the year ending November 1956 the *national* production totalled 4,670,000 tons of pig iron, 4,150,000 tons of steel, and 3,230,000 tons of rolled steel, thus reaching the levels fixed for 1957 by the First Five-Year Plan (1953-57).

Although there is some steel production elsewhere in China, most of it still is concentrated in Manchuria, with the iron-steel complex centred on Anshan undergoing further expansion. Two new major iron-steel complexes, however, are being constructed at Paotow in Inner Mongolia and at Wuhan on the Yangtze River. The Chinese Communists, with Soviet aid and by building on a Japanese base, evidently have succeeded in developing Manchuria's industrial strength to a level never reached before. Even greater development is contemplated in the Second Five-Year Plan period (1958-62).

Although the Chinese have committed errors and face grave economic problems in their hasty drive toward industrialization, the indications are that, however laboriously, they are progressing toward a position of substantially increased power. This is particularly true in areas of outstanding significance for joint Sino-Soviet designs such as Manchuria.

Communist Objectives

It is, therefore, essential to view Manchuria in the context of the over-all Communist objectives in Asia. The chief target in the east Asian sector is not far to seek. The stated first aim of the Sino-Soviet alliance of February 1950 was to guard against Japan "or any other state that may collaborate with Japan directly or indirectly in acts of aggression." Japan, having the same strategic importance with respect to east Asia that the British Isles have in relation to western Europe, is a prime concern of that alliance. The American giant, inheritor of the sea power exercised *seriatim* by the British and Japanese fleets along the China Coast, is the more distant adversary—but is viewed patently as the ultimate "Enemy Number 1." This situation explains the high tensions characterizing the deadlock along the 38th Parallel in Korea.

Are the trends in north-east Asia to the advantage or disadvantage of the United States? The Peiping-Moscow axis balances politically, in a fashion, at the two ends of the slender Trans-Siberian Railway. War waged in east Asia by the Communist allies would not now, however, be dependent upon the long rail haul from Europe as was the case with Russia in the Russo-Japanese War. The area from the Urals to Lake Baikal has taken on the char-

acter of a new major economic base, far to the east of European Russia, closer to the theoretical field of combat. Furthermore, China's industrial potential, oriented at the beginning of the century toward the China Sea and vulnerable to pressure from a sea power that might crush it against the nearly trackless spaces of central Asia, is no longer in that position reaching as it does now to tap both the economic and military power of Manchuria.

Under these conditions, Manchuria functions as the fulcrum of Communist power in north-east Asia. It is a vital sector in the Pacific Ocean frontage that stretches from the Chukotsk Peninsula opposite Alaska to the Shantung Pensinula guarding its southern approaches. Manchuria's strength helps sustain not only China Proper, but the Soviet Far East. In the framework of the Sino-Soviet alliance Manchuria is, in a sense, the eastern projection of Soviet power.

Transportation Facilities

Manchuria, in turn, is supported by the adjoining parts of east Asia —by China Proper, by the Mongolian People's Republic that has recently made its debut into international politics as a full-fledged member of the Communist bloc, and by Soviet Siberia. The communications system tying Manchuria into that geographical fabric is being developed rapidly. China's rudimentary highway system has been extended from Manchuria to the Indo-China border. Tracklaying on a new railway connecting Paotow and Lanchow, the growing industrial railway hub to the south, began in May 1956. Inland railway construction removed from the exposed coastline is progressing south of the Lunghai-Lanchow line.

The opening of the Ulan Bator-Tsining Railway to traffic in January 1956 gave China more direct and better-protected access to Soviet Asia's reservoir of power. A motor-truck system for freight transport between the USSR, the Mongolian People's Republic, and China was organized as early as March 1952. Construction is scheduled to start this year on an 880-mile trunk highway running from Kukuhot (Kweisui) in Inner Mongolia to Hailar on the Trans-Manchurian railway to the north.

The Soviets energetically exploit both the Arctic Sea route and Siberian waterways for transport of freight between European Russia and north-east Asia. In Manchuria the Chinese make full use of the Amur River and its branches for cargo shipment. In August 1956 Peiping and Moscow signed an agreement for the joint development of the navigational and hydraulic-power potentials of the Amur River basin, including those tributaries which form a part of the Manchurian-Siberian boundaries—the Argun and Ussuri Rivers. The new transport lines effectively supplement, for strategic purposes, the existing network. The Communist axis is developing its command of the interior lines of communication in the continent it controls.

Military Significance

Political Asia is now much changed, 45 years after the Emperor Meiji's death, but one salient feature he would seize upon at a glance: the cataclysmic reversal of fortunes has left Japan and the lost segments of her empire, Taiwan and Korea,

broadly exposed to the power of a co-ordinated political complex comprising China, the Mongolian People's Republic, and Soviet Asia. Manchuria, instead of constituting the Japanese Empire's mainland base, supports the Communist position in Korea—pointing "like a dagger at Japan's heart."

The military significance of the situation is not to be ignored. It is, nevertheless, also not to be disregarded that the Communist strategists—and particularly the Chinese Communist leaders — are men of many devices, devoted to the employment of strategic alternatives. An ancient strategist who has reputedly deeply influenced Mao Tse-tung's military thinking is Sun Tzu, who wrote toward the end of the fifth century BC on *The Art of War*. In the spirit of his dictum that "all warfare is deception," Sun Tzu's doctrine is the very essence of the strategy of "the indirect approach." "That general is skilful in attack," he held, "whose opponent does not know what to defend; and he is skilful in defence whose opponent does not know what to attack."

Mao Tse-tung, in analyzing the nature of China's war against Japan in a lecture series "On Protracted War" delivered in 1938, faithfully adhered to the spirit of Sun Tzu's teaching. The pattern of the strategy expounded on that occasion was followed closely in the post-1945 *civil* war. It is reasonable to assume that Mao Tse-tung still holds fast to his ideas regarding the over-all strategy for overcoming an enemy who in the beginning might deploy superior forces against China.

War of Attrition

Study of the theses "On Protracted War" leads to the realization that the United States in China's eyes now occupies a political and strategic position which in some aspects resembles that of Japan at the beginning of the 1930's. It may be deduced as probable, therefore, that Peiping views China's contest with the United States as being a protracted war of attrition which has reached the stage of strategic stalemate, when war weariness might be expected to assail the enemy and China's guerrilla actions could be supplemented by mobile warfare.

The present conflict is, of course, not characterized by open battles between opposing military forces on the soil of one or the other antagonist. In 1938 Mao Tse-tung looked ahead to the worsening of Japan's international position, with the possibility of a new war being touched off in south-east Asia or Siberia, and a resultant bogging down of the enemy's divisions. He anticipated no quick victory then; for "it is vain . . . to wish to wage strategically decisive battles to hasten toward the path of liberation before definite changes in the relative strength of the warring parties have taken place." It is manifest, from Communist actions and manoeuvres, that Peiping expects and seeks no quick decision in the struggle with the United States now. The immediate concern still is with Japan and Manchuria's importance in that situation is plain.

Since the 1955 Bandung Conference and the 20th Communist Party Congress at Moscow in 1956, Peiping and Moscow evidently have viewed the instruments of "peaceful co-existence" and "economic co-operation" as offering a more promising means of winning the contest than the sword. Again the key to Commun-

ist strategy may be found in Sun Tzu; "To fight and conquer in all your battles is not supreme excellence; supreme excellence consists in breaking the enemy's resistance without fighting."

United States-Japanese Relations

Peiping and Moscow thus strive to neutralize US influence in Japan. Japan for her part currently accepts American protection and aid—but this is not a close political association of equals. The inherent instability of that relationship is suggested by the history of US-Japanese relations since both became naval powers in the Pacific. The United States supported Japan in the Russo-Japanese War, only to see the two states later join forces against American efforts to penetrate their Manchurian spheres of influence. In the Siberian intervention of 1918-20, the United States defended Russia's territorial integrity against Japan. Conversely, by the policy of Secretary of State Stimson in the 1930's, Japan was viewed as a buffer against the Soviet Union. The United States in the 1930's completely rejected the Japanese thesis that the danger of "the Bolshevization of China" warranted the Japanese military occupation of Manchuria. The uncompromising American support of China against Japan led to the Pacific war—and the destruction of Japanese military power.

In the past, as is evident, Asian factors moulded American-Japanese relations; so will it be in the future—for Japan is irrevocably of Asia. Japan patently does not have the same relation to the United States today as she occupied with Great Britain in the Anglo-Japanese alliance of 1902. The situation is more nearly like that of Germany in 1922 when the German-Soviet Pact of Rapallo was signed. Japan regained freedom of international manoeuvre by her *rapprochement* with Moscow and entry into the United Nations at the end of 1956. She now is able to pursue her national interest more single-mindedly.

The United States does not lack factors of strength in her relations with Japan, but that relationship also is not without certain obvious shortcomings. The Sino-Soviet axis logically can be expected to take full advantage of such weaknesses, and to exploit its own potential to the utmost. Their objective is to develop close political and economic ties with their Asian neighbour, with the ultimate aim of causing Japan to align herself with "neutralist" or overtly anti-American groupings.

The factors in the equation are many. Japan's foreign policy is affected by domestic politics as well as by international developments. Questions of irredenta like the southern Kuriles—or Okinawa—sometimes will be temporarily shelved in consideration of more urgent matters. Issues of national livelihood, however, are exigent and not long to be denied. Among such issues are the fishing rights in the Okhotsk Sea and the waters of Kamchatka and, more importantly, the relations with China.

China presents to Japan both a potential military threat that cannot be ignored and the promise of economic benefit. From Manchuria, so long within the Japanese sphere of influence, Japan formerly obtained coal, steel, wheat, and soybeans in quantity; she still could profitably

import some of her needed raw materials from there. Peiping now holds out the lure of increased trade once more, and Japanese commercial interests are bent on exploring the possibilities in that regard.

Conclusion

Communist leader Nikita S. Khrushchev tendered the Party Congress of February 1956 a political estimate:

> *The new period in world history, predicted by Lenin, when the peoples of the east play an active part in deciding the destinies of the whole world and have become a new and mighty factor in international relations, has arrived . . . International relations have spread beyond the bounds of relations among countries inhabited chiefly by peoples of the white race and are beginning to become genuinely world-wide relations.*

Mao Tse-tung and the other Chinese Communist leaders almost certainly accept that estimate. The indications are that the Sino-Soviet allies are acting on the basis of some such appraisal of the world situation. In the vital sector of north-east Asia their strategic design is being unfolded. Once more, as on a number of previous historic occasions, a major power conflict pivots on Manchuria.

COMPETITION FOR AUTHORS

The Board of Review has awarded first place and the prize of £5 for the best original article published in the December issue to "Australian-Japanese Relations, 1918-1941," by Major A. W. John, Australian Army Education Corps.

THE SUPPLY SYSTEM FOR THE NUCLEAR AGE

Major D. J. P. Tier

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IN recent years much has been written about the design for new brigades, divisions or corps and about their employment under nuclear conditions. Many points of view have been expressed, but it has been generally agreed that whatever the final structures may be they must have the following characteristics:

(a) Be as small as possible, to present the least nuclear target. In general this means increasing the proportion of teeth to tail.

(b) Be hard-hitting, so that the fewest number of men produces the greatest effect, a necessary attribute if we are to offset the numerical superiority of our probable enemy. It means that we must use our technological advantage and introduce weapons with high rates of fire and great effect as far as possible.

(c) Be mobile, to permit rapid dispersion and concentration. This implies cross-country mobility, since being road-bound forces concentration of a type. Such an ability is necessary because any concentration which is slow to form or disperse risks location and destruction.

(d) Be self-contained, so that they may fight on though isolated by the nuclear battle.

It follows that units and formations designed to meet these requirements need a supply system able to cope with the resulting situation. It is the aim of this paper to consider the problem and suggest a solution.

Problems of Supply

Consideration of the above requirements shows that they tend to be incompatible from a supply aspect. For instance, a self-contained, hard-hitting force needs a comprehensive holding which means increased size and reduced mobility. However, it is possible to satisfy all the requirements by meeting different ones at different levels.

For the purpose of this paper let us assume there is no change in the command structure or organization and that tactical doctrine teaches that deep penetration between corps, but not lower formations, may be accepted. It follows that the corps

must be self-contained to the extent that they may be cut off from re-supply for a considerable period.

Because of the nuclear threat, the units and lower formations comprising the corps will be spread out as far as possible, the distances within and between them being arranged to give maximum dispersion whilst retaining some degree of mutual support. They need not be fully self-contained but must be mobile, hard-hitting and comprise as few non-fighting elements as possible.

The supply system which caters for such a layout must be small, comprehensive and flexible. It must be able, with the fewest men possible, to order, receive, hold and issue sufficient items to maintain the corps, even when it is isolated.

The holding for the corps would be based on the General Staff estimate of the length of time such an eventuality might last and the anticipated usage rate. With the total corps requirement established in this way it has to be determined where the stock must be held and how it should be controlled. About these two matters the following generalizations may be made:—

(a) The larger the holdings and/or the more homogeneous the items held, the easier over-all accounting becomes.

(b) The smaller the holdings and/or the greater the variety of items held, the less vulnerable the over-all stock becomes.

(c) The higher the level of control, the easier it is to maintain administrative balance.

(d) The lower the level at which control is exercised, the easier and quicker re-supply will be—to the level controlling.

Considering the problem of holdings first, it will be seen that the following solutions are possible:—

(a) To distribute the entire corps holding throughout the corps. This would reduce the vulnerability of the stores to the minimum, but would so reduce the mobility of the forward troops as to be unacceptable.

(b) To maintain the corps holding in a central corps depot. This is the reverse of the previous solution, but is equally unacceptable since—one flash and it's ash.

(c) To distribute the corps holding among a number of depots, the size, composition and number of which would depend on the terrain and the tactical situation. This proposal is capable of almost infinite variation and is the one recommended for further consideration.

Control of such depots may either remain centralized or be de-centralized as far as may be desired, providing a balance is struck between the need for control and the accounting difficulties. In considering this aspect the need to free the forward troops for their real task, and the need of the commander to be able to switch supplies and reinforcements to any part of the front must be evaluated.

The ultimate in hard-hitting mobility is achieved by the forward troops if they can be relieved of all storeholding responsibilities, except for their immediate reserves, which must be on wheels. However, this means guaranteed re-supply under

all conditions which would have to be arranged by corps from many widely dispersed depots.

Problems of Dispersed Depots

It was postulated above that the troops in the corps area would be widely dispersed because of the nuclear threat. For the same reason depots must be dispersed also, as must be the holdings between the depots. This means that composite, rather than commodity, depots should be established.

From the commander's point of view such dispersion would enable him to accept the loss of a depot and reorganize his supply arrangements relatively quickly—providing the accounting difficulties can be mastered. For example, if one depot is destroyed its customers could be supplied from a second depot, nearby but not affected, if it is known quickly and accurately at corps what is required by units and what stocks are available for issue elsewhere. The problem of knowing continuously what stocks are held at all depots and the control of their issue and replacement is one which must be solved before such a solution could be confidently recommended.

Problems of Accounting

The aim is to reduce the load on the forward troops to which end a series of composite depots has been proposed. The accounting system devised should also place the least load on them, yet permit the control of the depots in considerable detail. In addition it must be:—

(a) Simple, so that it may be operated by the least number of skilled men.

(b) Comprehensive, so that every item is accounted.

(c) Accurate, so that correct decisions may be made with no embarrassing shortages.

(d) Economical in manpower and, even more, in stores. This means a short pipeline and continuous and effective stock control, to ensure levels are adequate but not excessive.

(e) Flexible, to permit the rapid switching of customers as the situation demands and to allow changes in policy to become effective in the shortest time.

To continue to use the present system of accounting if the proposed supply system was adopted would necessitate a considerable increase in staff. The increase would result from the need to record in detail, at a central point, the transactions of all the widely dispersed depots. Such control could be achieved only by having the means to obtain the information, to do the necessary calculations swiftly and accurately and then to authorize the issues. It would be possible to reduce staff only if some computing device and a means of communication suited to the task were available.

Let us now consider equipment which could do the job.

Punched Card Machines

There are many types of computers available today, complex ones for complicated problems and simpler ones to suit. Punched card machines are of the latter type, though not the simplest, and would suit the task in mind admirably. They have the advantage over the very simplest machine inasmuch as the information presented to them may be stored. This enables it to be used over and over again and

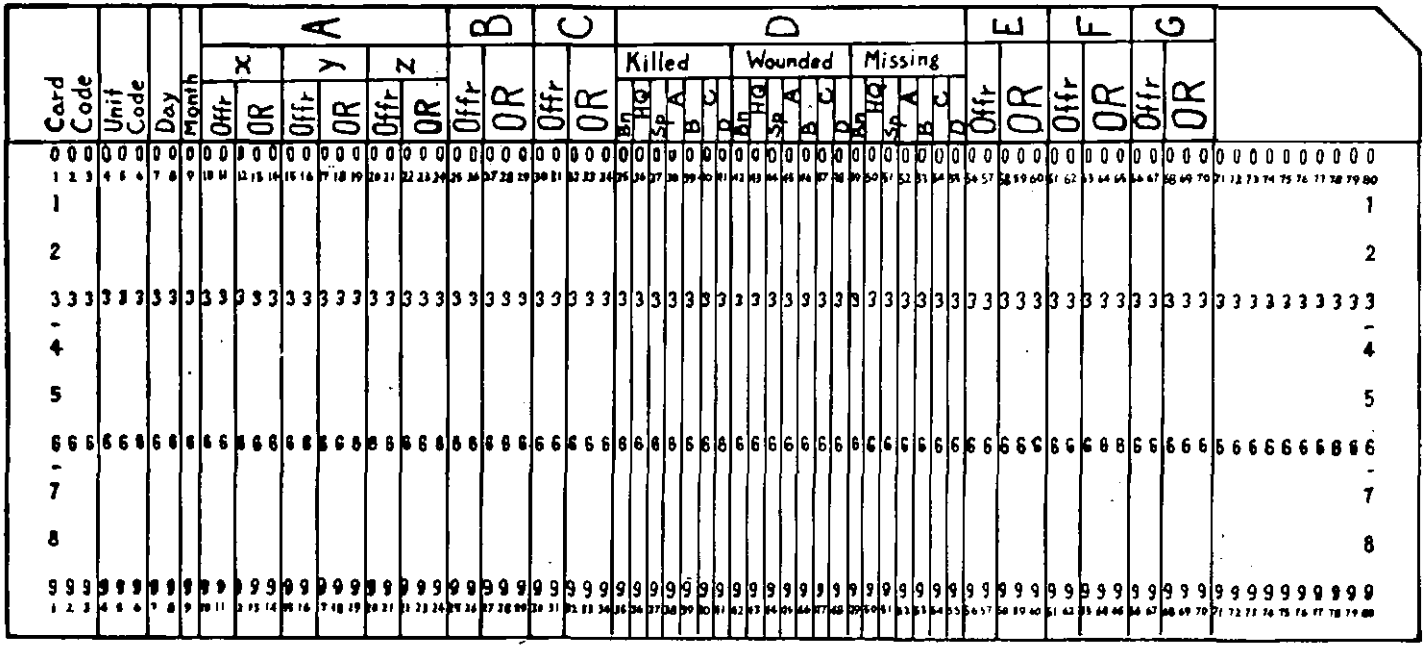

Card Code
Unit Code
Day
Month
A
x
y
z
Offr
OR
B
C
D
Killed
Wounded
Missing
Bn
HQ
Sp
A
B
C
D
E
F
G

Fig. 1

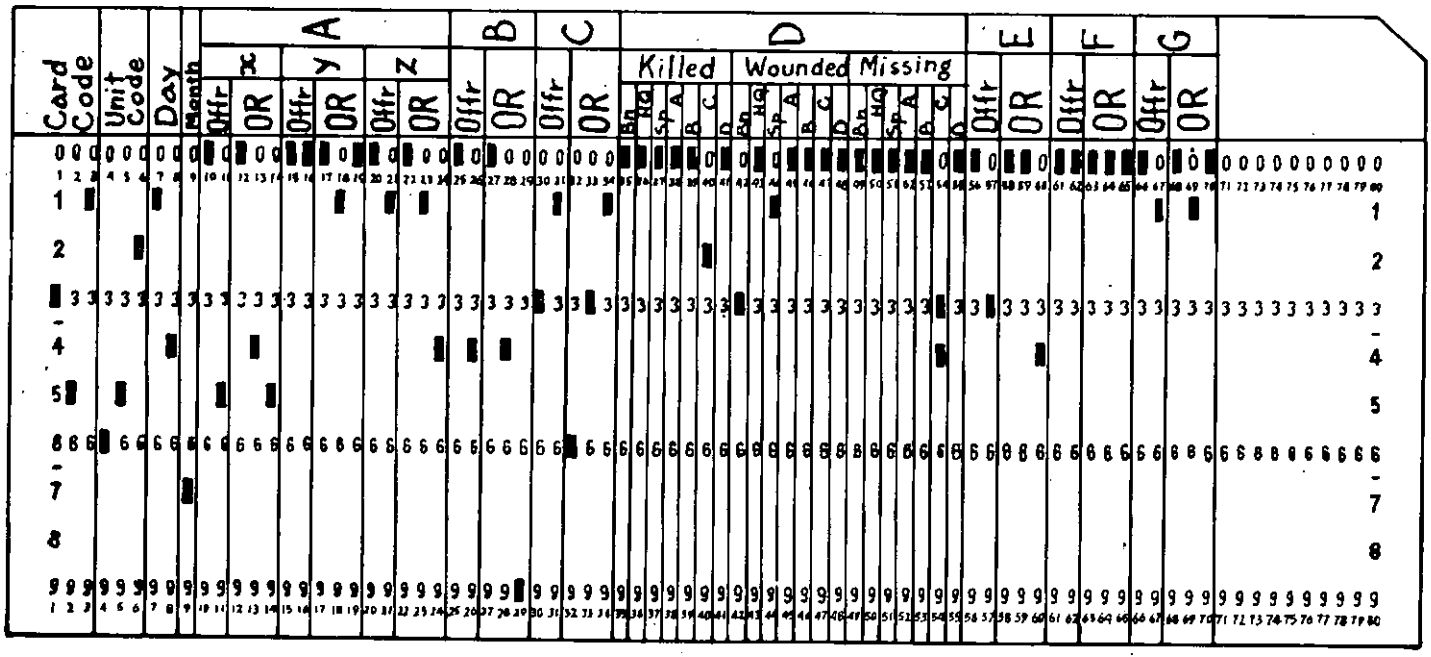


Fig. 2

Note:—Black oblongs represent holes in card

compiled or manipulated in as many ways as may be required.

The basis of the whole system is a small rectangular card through which holes may be punched. Information is carried by the position of the hole punched in the card.

On a graph the position of any point may be readily and unambiguously identified by giving its co-ordinates; in a similar way the position of a hole punched in a card, relative to two edges, can be measured and the value this represents sensed by electronic means.

To particularize, let us suppose that the card in Fig. 1 is in use by a unit and its Strength State was:—

A—Losses since last state was rendered, by sub-heads:—

x—Battle casualties
5 offrs, 45 OR

y—Sick (Evacuated beyond Field Ambulance) 10 OR

z—Other causes 1 offr 14 OR

B—Reinforcements received since last state or returned from detention 4 offrs 49 OR

C—Total strength now with unit, excluding attached
31 offrs 631 OR

D—Names of officer battle casualties:—
Killed: NX1234 Capt J. Bloggs
Wounded: NX5678 Maj A. B. See
QX2468 Capt X. Y. Zed
Missing: VX9876 Lt Z. Smith
WX5432 Lt Q. Jones

E—Total strength officers and ORs, filling appointments shown as attached on HEs
3 offrs 4 OR

F—Total strength officers and ORs, not allowed by HE Nil

G—Total strength officers and ORS, on posted strength but detached
1 offr 10 OR

This would be represented on the card as shown in Fig 2. It will be seen that the information contained in "D" had to be coded in a simple form before being presented, this is because it is qualitative rather than quantitative.

Information of the type shown in Fig 2 would be obtained from many sources and each source would have its own card. Details of ammunition requirements, stores and vehicles would be presented in a similar manner on other cards.

Let us now suppose that we wish to find out the amount of ammunition by types expended over a certain period. All the cards having this detail would be selected from the mass of cards by a Sorter (see Fig 3.) They would then be passed through the Calculator and Tabulator, Figs 4 and 5. These machines extract the information punched on the cards, process it and present the result in the typed form required.

Throughout, the original information remains available, unaltered and unalterable, so that at any time facts are sought the same basic information is used. By this means accuracy is achieved and at some speed, since the cards are handled at the rate of about 150 cards per minute.

It can be seen that such machines offer savings in manpower, yet give speed and accuracy for the operation of the supply system envisaged. The other requirements can also be met, since, having the basic data on hand, any new problem can be solved quickly by resorting and

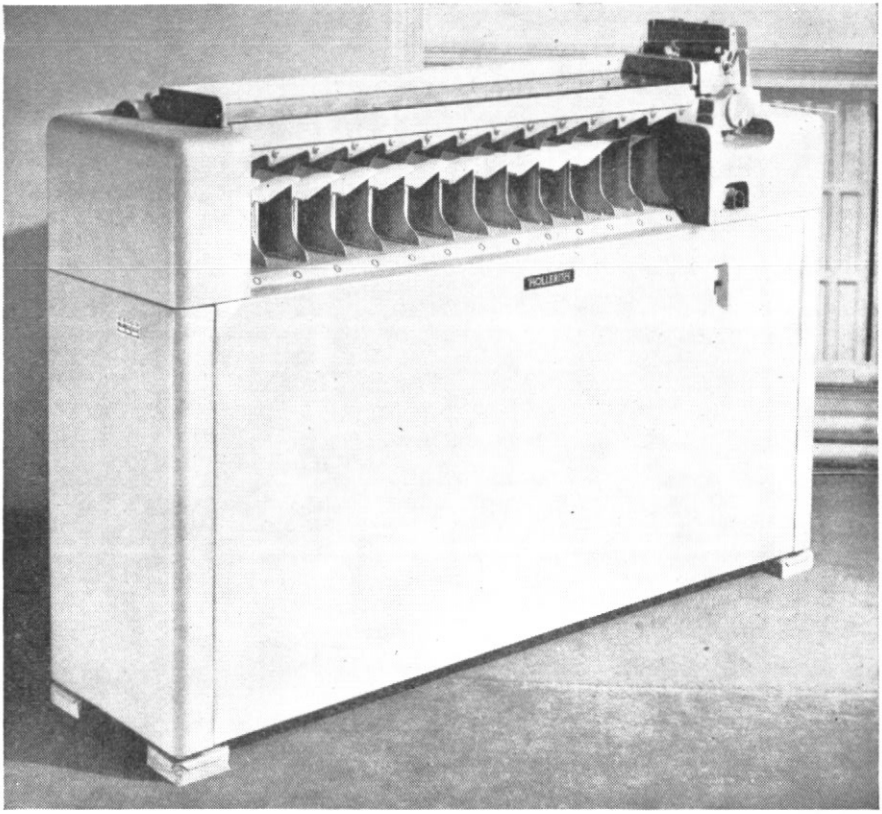


Fig 3. Sorter

tabulating to obtain the fresh solution. Furthermore, changes in policy can be implemented by altering the programme of the machines. Finally, if it is necessary to give individual consideration to special cases they may be sorted out—automatically.

This system, whilst quick in operation itself, is only part of the whole and depends on a satisfactory communications system.

Problems of Communication

Because the total corps holding is under corps control all requisitions must ultimately be passed there for authority to issue, though the wishes of lower formations about priorities need to be considered. The best solution from a supply point of view is to relate cause to effect and give each unit access to corps on supply matters.

The provision of a special corps-wide net for this purpose would involve a large number of skilled operators, which is a situation we have been trying to avoid. However, through the increasing use of teleprinters and automatic transmitting equipment the problem has already been solved. This means that pro-

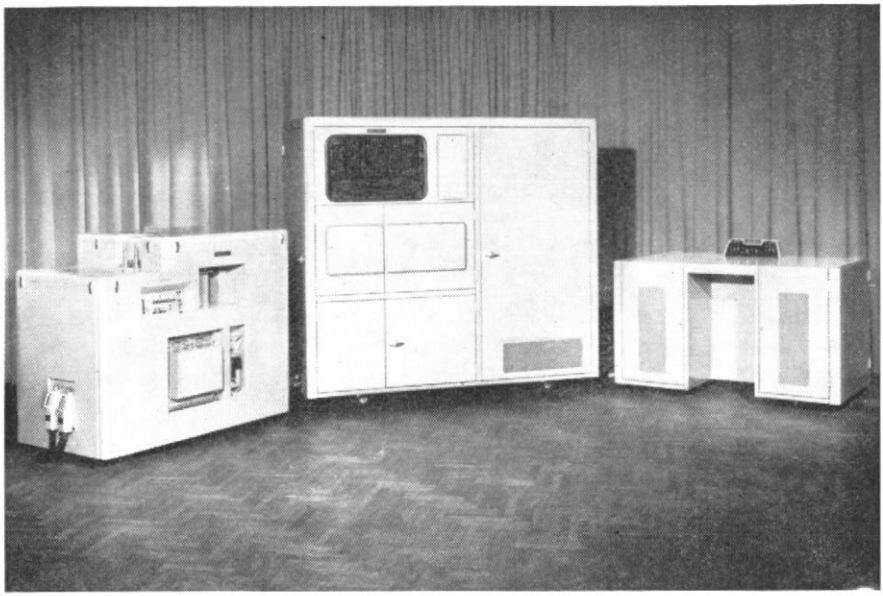


Fig. 4. Calculator

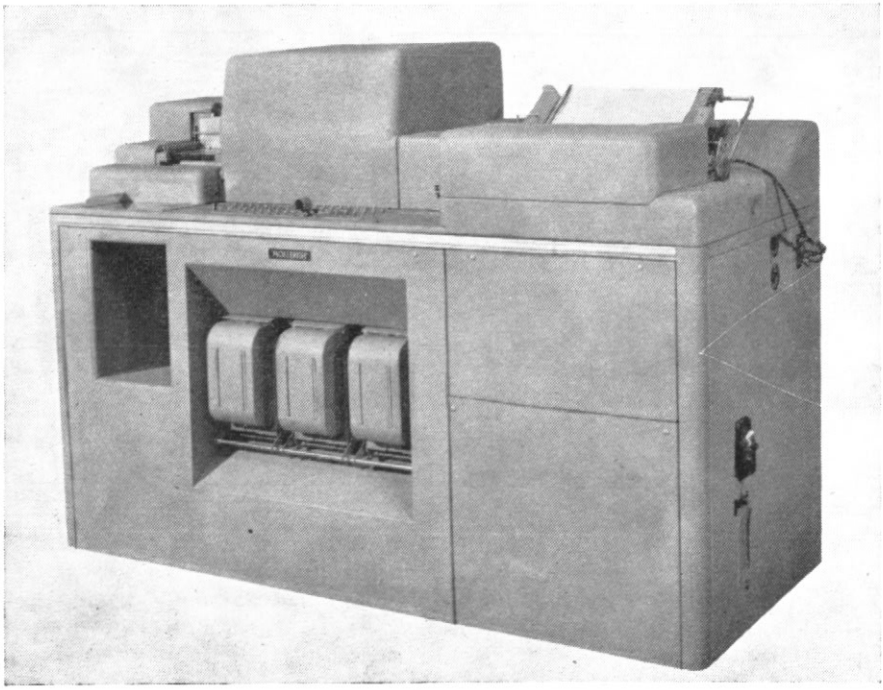


Fig. 5. Tabulator

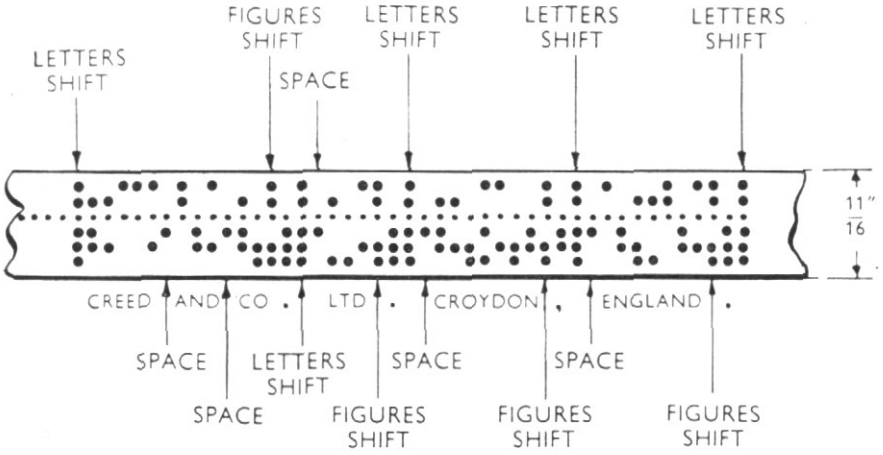


Fig. 6. Punched Tape

Fig. 7. Perforating Typewriter

viding the originator has the proper equipment the information can be passed to its destination with the minimum effort.

The equipment can be of two types, a teleprinter or a punched tape operated transmitter. Both will operate to a receiving teleprinter and/or a punched tape receiver but, since the teleprinter is generally known and a punched tape output is required finally, only the latter will be described.

Punched Tape Equipment

Punched tape is paper tape in which holes are punched, normal to the direction of movement, to represent letters and figures. The position of the holes can be electrically sensed and used to key a transmitter, whilst on being received an identical tape can be prepared. From this tape, punched cards may be prepared or the information may be reconstituted in its original typed form. A sample of the tape is shown in Fig 6.

At unit level a punched tape could be prepared in several ways. It could be done directly whilst the requisition was being typed using a perforating typewriter as shown in Fig 7 and then transmitted; or it could be prepared at a unit and sent to a

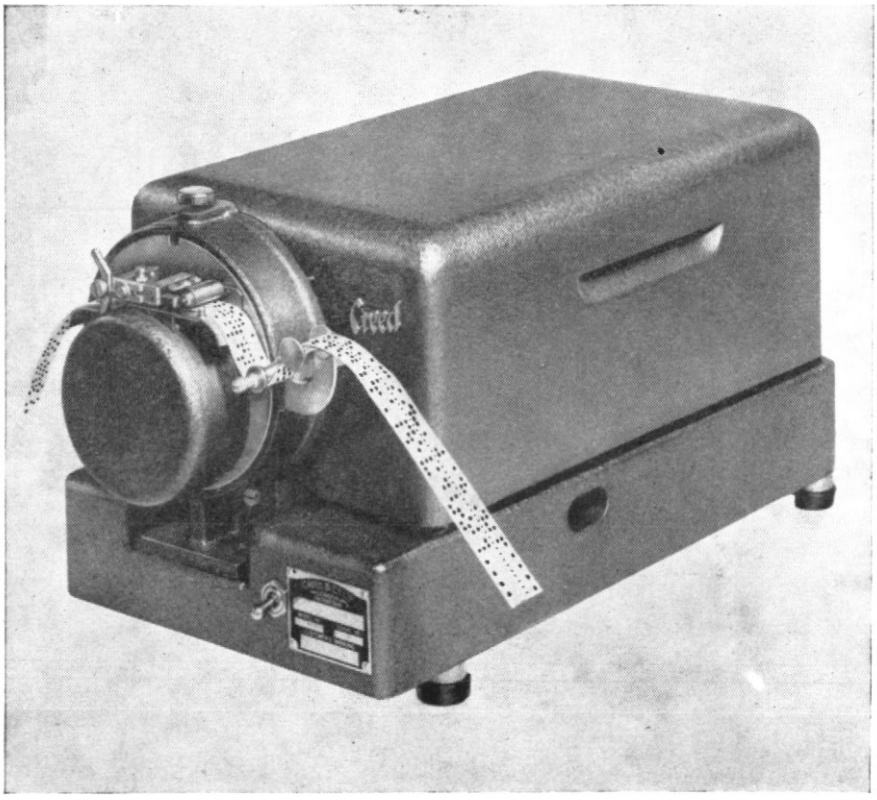


Fig. 8. Auto-Transmitter

message centre having automatic equipment, for transmission; or the message could be sent in the usual manner to a message centre where the tape itself could be prepared. If the unit had a teleprinter the message could be transmitted in the normal way.

Having produced the tape by any of the methods it would then be placed in the Auto-transmitter to be sent in clear or with "on-line" cipher equipment (see Fig 8). However, at its final destination, at corps, a tape would be prepared on a Printing Reperforator (see Fig 9). This can be done even if the message was sent on a teleprinter and can be done at the same time as the message is being received on a teleprinter, if necessary.

The Suggested Solution

The problem has been outlined and the elements of a solution have been described, it remains to show the system in operation as a whole.

Daily at each unit in the corps a requisition would be prepared to cover men, ammunition, vehicles and supplies. For a particular unit it might be as shown in Fig 10. In practice not all items would or could be requisitioned daily, but experience would dictate this and urgent exceptions could be made at any time.

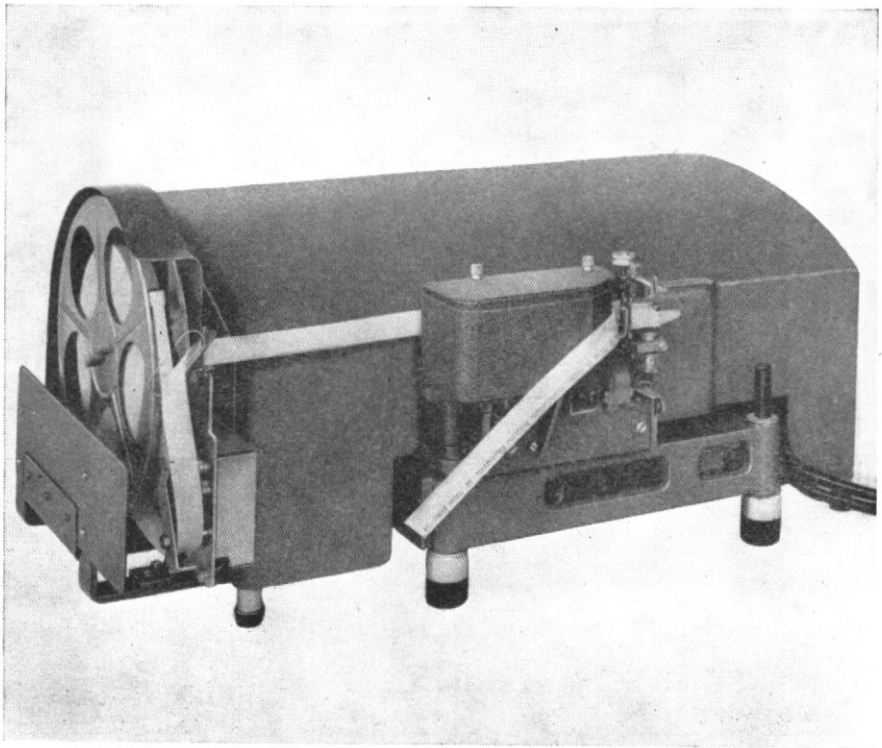
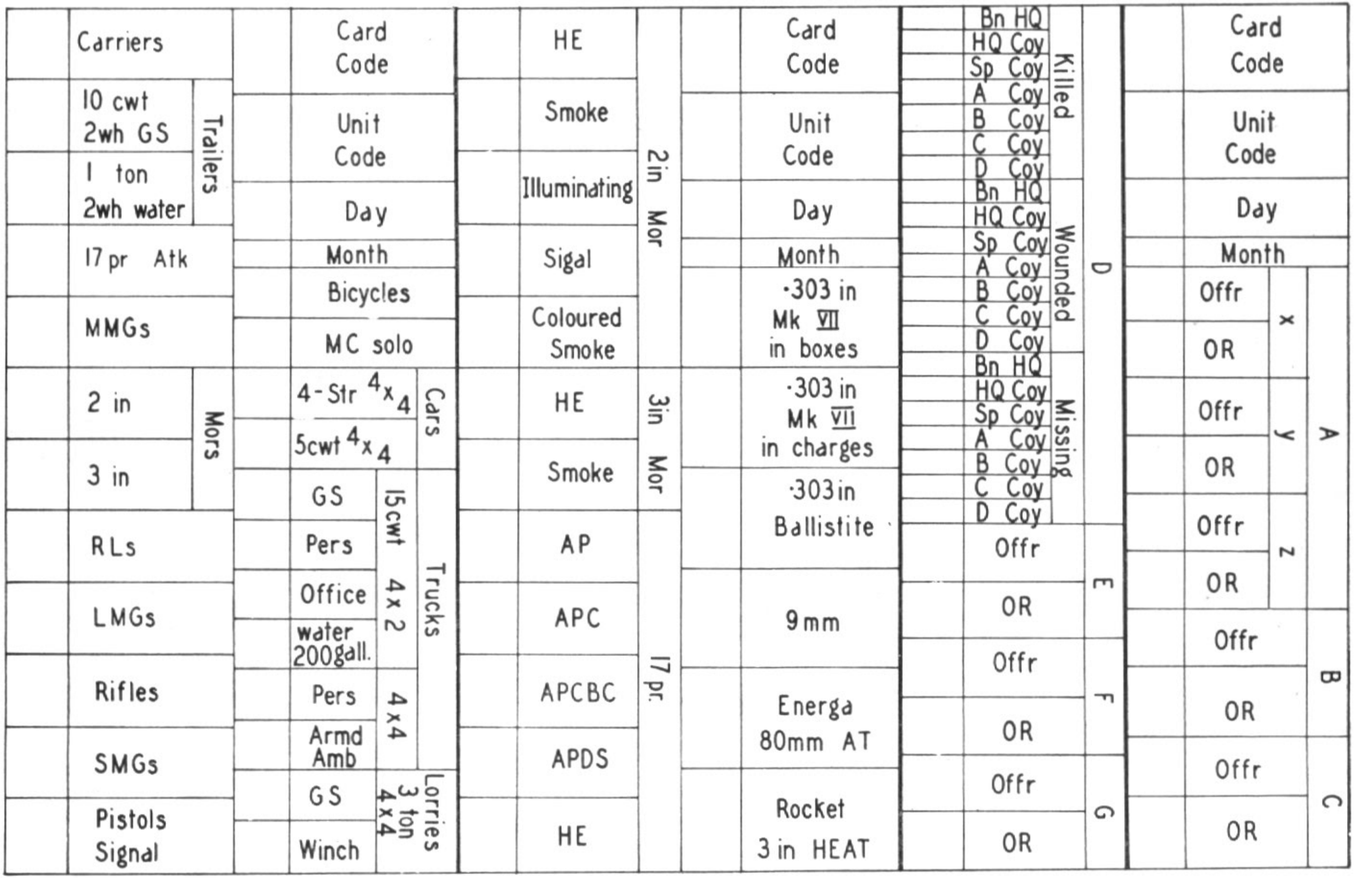


Fig. 9. Printing Reperforator



Carriers
10 cwt 2wh GS
1 ton 2wh water
Trailers
17 pr Atk
MMGs
2 in
3 in
Mors
RLs
LMGs
Rifles
SMGs
Pistols Signal
Card Code
Unit Code
Day
Month
Bicycles
MC solo
4-Str 4x4
5cwt 4x4
Cars
GS
Pers
15cwt
Office
water 200gall.
4x2
Pers
Armd Amb
4x4
Trucks
GS
Winch
3 ton 4x4
Lorries
HE
Smoke
Illuminating
Sigal
Coloured Smoke
2in Mor
HE
Smoke
3in Mor
AP
APC
APCBC
APDS
HE
17 pr.
Card Code
Unit Code
Day
Month
·303 in Mk VII in boxes
·303 in Mk VII in charges
·303in Ballistite
9mm
Energa 80mm AT
Rocket 3 in HEAT
Bn HQ
HQ Coy
Sp Coy
A Coy
B Coy
C Coy
D Coy
Killed
Bn HQ
HQ Coy
Sp Coy
A Coy
B Coy
C Coy
D Coy
Wounded
Bn HQ
HQ Coy
Sp Coy
A Coy
B Coy
C Coy
D Coy
Missing
D
Offr
OR
E
Offr
OR
F
Offr
OR
G
Card Code
Unit Code
Day
Month
Offr
OR
x
Offr
OR
y
Offr
OR
z
A
Offr
OR
B
Offr
OR
C

Fig. 10

To take the case of the unit without a teleprinter but with automatic transmitting facilities, as the requisition was being typed a punched tape would be prepared. This would be placed in the Auto-Transmitter and the message would be sent at a rate of about 400 characters a minute. Depending on the way the nets are set up the message may have to pass through a number of channels. However, at each stage retransmission can take place almost automatically if tape is used.

When received at its destination, the "Corps Computing Centre," a tape is made in a Printing Reperforator and passed to a Tape/Card converter (see Fig 11), and a card, or series of cards, is produced for each unit. The number would vary with the unit but would consist of at least one card each for men, ammunition, vehicles and supplies. As the cards are prepared they would be totalled automatically and posted against the issuing depot.

The final list for each issuing depot would be prepared by units and, using a Card/Tape converter (see Fig 12), together with the automatic transmitting and receiving equipment, passed to the depot and the unit. Here the received information is converted into typed form by an Interpreter (see Fig 13), from which the issue is made.

The transaction would be completed by loaded vehicles from corps moving forward at night to units and clearing before first light. This would leave the forward area clear

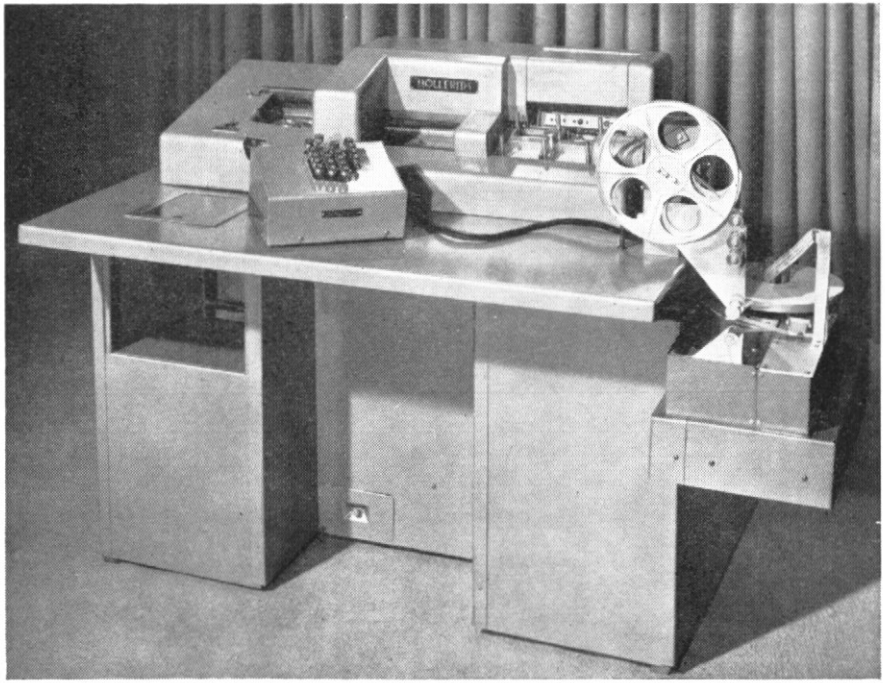


Fig. 11. Tape to Card Converter

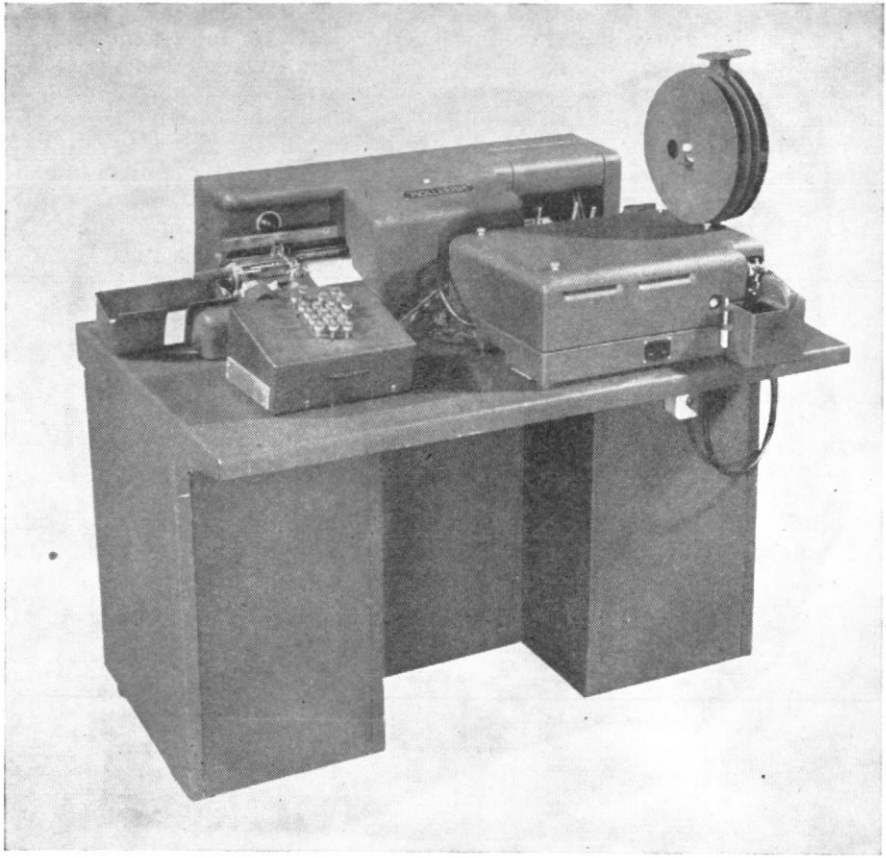


Fig. 12. Card to Tape Converter

and allow loading to take place by day and movement by night.

The work done at the Corps Computing Centre on the cards representing the requisitions may be summarized as:—

(a) Comparing the requisitions with the unit entitlements to ensure that there is no over-insurance.

(b) Comparing the requisitions with the policy of the moment as regards controlled stores, priorities of supply and the like.

(c) Comparing the requisitions with stocks held at the various depots to determine from which depot issues should be made.

(d) Calculating the numbers of vehicles required to move the various items to the respective units.

(e) Rejecting for closer consideration by an authorized staff officer any borderline cases.

When the orders for the daily issues have been completed the Centre would turn to each depot's stock

records and bring them up to date for the next day's operations. Requisitions for the stock replenishment to cover the day's transactions would also be prepared. None of these tasks would take very long and the machines would then be available for such other tasks as the staff might require. A schematic diagram of the system is shown as Fig. 14.

Conclusion

It is not expected that this system could be used in its entirety as a blueprint for changes in the present arrangements. The essential feature of the proposals is to show that through the exploitation of our technical achievements a small staff can control the corps holding, dispersed though it must be. The equipment

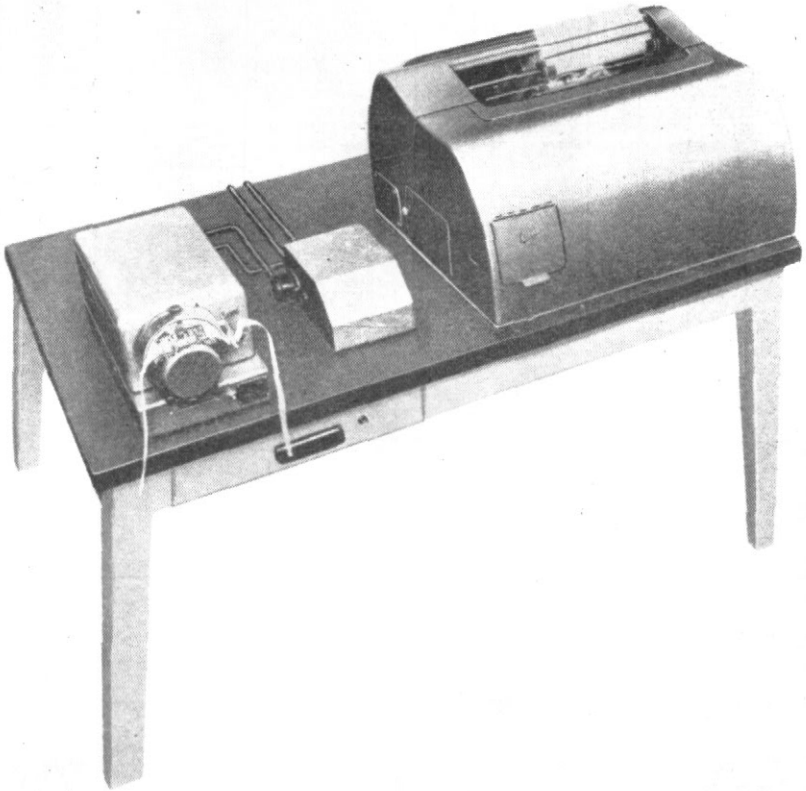


Fig. 13. Interpreter

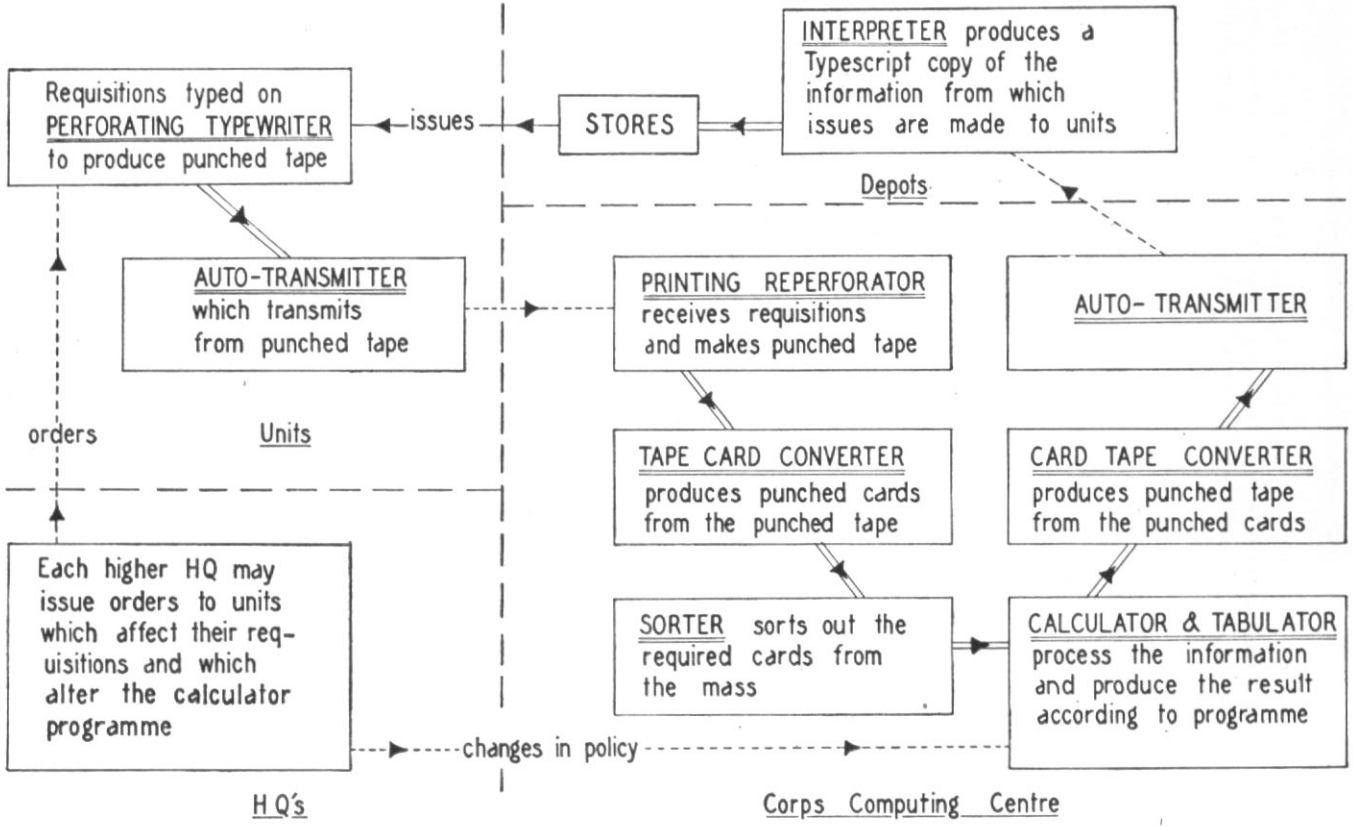

Requisitions typed on PERFORATING TYPEWRITER to produce punched tape
issues
STORES
INTERPRETER produces a Typescript copy of the information from which issues are made to units
Depots
AUTO-TRANSMITTER which transmits from punched tape
PRINTING REPERFORATOR receives requisitions and makes punched tape
AUTO- TRANSMITTER
orders
Units
TAPE CARD CONVERTER produces punched cards from the punched tape
CARD TAPE CONVERTER produces punched tape from the punched cards
Each higher HQ may issue orders to units which affect their requisitions and which alter the calculator programme
SORTER sorts out the required cards from the mass
CALCULATOR & TABULATOR process the information and produce the result according to programme
changes in policy
H Q's
Corps Computing Centre

Fig. 14

recommended is all standard and has been used at a higher level than is proposed here by the British Army of the Rhine as mobile equipment.

Finally, it is suggested that this facility merits consideration because its capacity so far exceeds that required for the supply system alone that it would be available for other purposes. Possibilities which come to mind immediately are the calculation of ammunition requirements for an elaborate artillery programme and road movement problems. Could it be that the computing equipment could be justified on these grounds alone? I am sure most staff officers would support this view.

(I should like to acknowledge the photographs accompanying the article, which were kindly supplied by The British Tabulating Machine Co. Ltd. and Creed and Co. Ltd.)

Nothing would be more futile than to suppose that a good organization can of itself produce good results. The impulse and drive can only come from the man or men who are operating the organization.

—Lieut.-General Sir Ian Jacob.

Special Warfare
A NEW APPRAISAL

Major-General Orlando C. Troxel, Jr.
Chief of Special Warfare
Department of the Army, USA

THE Army is planning for any possible future war without being mentally handcuffed to the last war. Not only has science developed an arsenal of super weapons which are continually modifying our concepts for the tactical employment of our conventional forces against an enemy, but it is opening an area of planning for the use of enemy-subjugated people against their oppressors.

Something had to be done, for instance, to reduce the increasing effectiveness of the MIGs during the later phases of the Korean conflict. By radio broadcasts and millions of leaflets the Chinese Communist Air Force pilots were informed that the United Nations Command would give haven and $50,000 to pilots who would surrender their planes to the UN Command. An additional bonus of $50,000 was offered to the first pilot to do so.

Although the first enemy pilot who actually did land his MIG on a UN air base claimed not to have known about the cash award, the effect of the propaganda effort was immediately noticeable. As a direct result of the combination of that first pilot's defection and the knowledge that other pilots were aware of the UN offer, all MIGs were grounded for eight days. When the MIGs started flying again, they were fewer in number and these were manned by pilots who were more politically reliable than competent air fighters.

Our victory ratio to losses rose perceptibly. Additionally, the Red Air Forces in Russia and the satellite countries grounded patrol flights, disrupted training programmes, and concentrated on the ideological training of pilots at the expense of combat training.

Here was a simple, inexpensive psychological warfare effort directed at a human attitude (distrust) that caused the enemy to act unfavourably to his own interests.

Special Warfare, however, is more than psychological warfare. Special

— From Army Information Digest, USA.

Warfare consists of both psychological and unconventional warfare. It is a carefully planned and co-ordinated effort to bring about the subversion of the enemy against himself in conjunction with our more conventional operations against him. Additionally, Special Warfare is concerned with the establishment of escape and evasion efforts behind enemy lines to assist our personnel in evading capture and to provide means for them to escape should they be captured.

The era during which psychological warfare was solely concerned with leaflet and loudspeaker surrender appeals is past. The time when partisan fighters organized haphazardly and fought harassing actions as best they could without co-ordination with the over-all effort is also past.

Psychological warfare is no longer primarily concerned with the delivery of hit-or-miss harassing messages and safe conduct passes to be used if conditions *happen* to be right. Unconventional warfare is no longer limited to spontaneous and poorly supported guerrilla efforts which succeed only if favoured by the genius of local leadership and plain luck.

Special Warfare, exploiting its psychological and unconventional warfare aspects, has emerged from a past of sporadic tactical support of local operations to become a strategic operation of potentially major importance to theatre commanders. It has extended the battlefield into the very heart of the enemy's country.

As in the case of development of tactics and doctrine for any arm, the first consideration is: *Know your weapon!*

The weapon of Special Warfare is the people dominated by the enemy.

Since 1954 an extensive research effort to know the enemy has been conducted under immediate supervision of the Office of the Chief of Special Warfare. Top-ranking social scientists and area experts of the United States have been employed to develop background information about strategically important and potentially hostile peoples.

For the first time, carefully organized data about the likes and dislikes, attiudes, emotional and intellectual characteristics, and subversive potentialities of critical target groups have been assembled. Additional research is being conducted to develop immediately usable guidance for the best means of communicating with and influencing the thoughts, emotions, and actions of those groups which have the greatest capabilities of reacting effectively in support of our more conventional operations.

The threat to the free peoples of the world today is from a system of powerfully armed dictatorships. The balance of power between the free world and this system of dictatorships lies in the loyalties and inner motivations of the opposed peoples. The balance is not in favour of the dictatorships.

A dictatorship, *per se*, contains a significant proportion of dissident people who must be controlled by force. But the dissident elements cannot be eliminated by force. The liquidation process of itself creates further disillusioned and disaffected groups who, in turn, must be controlled by force. A dictatorship, in other words, cannot rid itself of its own inner threat.

Russia, the heart of Communist power, has a long history of popular discontent with and revolution against one totalitarian regime after another. In World War I this dissatisfaction resulted in the collapse of Russia's military effort against Germany. In the early stages of World War II some four million Russian soldiers surrendered freely to the invading Germans. Many of these volunteered to take up arms with the Germans against the Red Army. The Nazis, of course, lost their greatest chance for victory by maltreating rather than accepting the service of most of the Russians under their control.

Considerable publicity has been given to the acceptance by captured American soldiers of Communist indoctrination in Korea. It should be remembered that only 22 Americans refused repatriation at the time of the armistice and nearly half of these have so far returned to this country. On the other side of the coin, 88,000 Communist prisoners of war refused to return to their homes under Communist domination.

Upon the cessation of hostilities in Vietnam, about 500,000 Vietnamese chose resettlement in South Vietnam in preference to remaining in the north under Communist rule.

More recently, there have been revolts in the satellite countries. There has been a steady stream of refugees who risked their lives to escape to the free world from Communist domination.

Nowhere, at any time, has there been any indication that a Communist regime has had the full popular support of the people it dominated. Rather, the very opposite has been frequently indicated.

Prior to the Korean conflict, the United States had never been at war with a power within which there existed such widespread, seething discontent. It does exist now, however, within each potentially hostile country. As such it constitutes a military advantage for the United States which we do not disregard nor minimize.

Our capability of mass, nuclear retaliation is a strong deterrent to World War III. Still another deterrent is the readiness of subjugated peoples to revolt against Communist regimes. In the event of war, the latter could conceivably reduce the need to use nuclear weapons by generating immediate unconventional warfare deep in the enemy's homeland.

During peacetime it is *not* the function of Army Special Warfare to foster discontent behind the Iron and Bamboo Curtains. There is always the small hope that other events may cause Communist regimes to so alter their objectives and philosophies as to humanize them, eliminate the causes of internal discontent, promote prosperity and, in the process, adjust themselves to peaceful co-habitation with the free world—becoming, in fact, non-Communist in thought and action.

During wartime, however, it *is* the function of Army Special Warfare to utilize the dissidence within enemy countries in co-ordination with our other military operations. As such, the research being conducted under supervision of the Office of the Chief of Special Warfare concentrates upon the understanding of our potential enemies—upon the identification and means of communicating

with, guiding, and assisting those groups which have the desire and capability of keeping the enemy military effort off balance by any means, from guerrilla operations to the spreading of rumours.

Development of effective guerrilla operations deep behind enemy lines is a prime objective of Special Warfare. Such operations not only tie down large numbers of enemy troops to protect lines of communication; they also disrupt his logistical support of front-line forces, foment distrust, and have an enormous psychological impact in assisting local freedom fighters.

Both the psychological and unconventional warfare elements of Special Warfare are concerned with the development of guerrilla warfare. By all the communications media at its disposal, the psychological warfare effort in time of war is directed at building a climate of opinion which will stimulate civilians and soldiers to active guerrilla operations and generate a sympathetic attitude on the part of civilians who do not participate actively. Their ultimate freedom is our goal; their wartime support is our weapon.

Partisan fighters and guerrillas initially seldom have adequate equipment, know-how, or organization. The unconventional warfare element of Special Warfare, therefore, provides Special Forces to equip, train, and organize guerrilla troops.

Special Forces personnel are carefully selected for physical, mental, and character qualifications. They receive the most rigorous training in living off the land, demolitions, communications, hit-and-run combat, field expedients, and the art of training and guiding others. They are, in fact, guerrilla instructors and function somewhat as military assistance groups.

Special Forces personnel infiltrate by land, sea, or air, as appropriate, into areas previously determined to be favourable for guerrilla operations by reason of terrain characteristics, presence of profitable targets, and the existence of native personnel ready to participate. If feasible, they take with them initial equipment and supplies to equip and train a small guerrilla force and establish communications with headquarters behind our lines for resupply and further instructions.

Considering the continual evidence of a large subversive potential within the powers most threatening to us today, Special Forces provide an extremely flexible and economical means of expanding the battlefields into an area difficult for the enemy to control.

Psychological warfare seeks to encourage those who are hostile to the enemy regime and to demoralize those who support it. There are many means by which this may be accomplished. There are the normal radio, loudspeaker, and leaflet propaganda operations by which enemy people and troops are informed of the true situation at home and at the front. Personal vulnerabilities are exploited. Techniques for industrial, agricultural, political and combat sabotage, slow-downs, and other forms of subversion are suggested. Distrust between the people and their regime is fostered. Surrender appeals are made to enemy troops when the situation is appropriate.

Psychological warfare, however, is not limited to propaganda. It includes such efforts as the MIG surrender offer cited earlier. It includes military manoeuvres and tactics tailored to special attitudes of opposing forces.

In summary, Special Warfare adds the enemy-dominated peoples to the weapons the Army can employ against the enemy within the Army's new concept of extreme depth of battlefields, mobility of forces, increase of fire power, and strategic flexibility. Trained and equipped Special Warfare units are ready for action. The existence of these ready-to-go Army troops and their capability of striking hard at the enemy's greatest weakness, deep within his country, is a strong deterrent to any potentially hostile power contemplating a hot war against us.