

CO

UNCLASSIFIED
Australian Army History Unit
16 July 2014



ARMY
LIBRARY

AUSTRALIAN ARMY JOURNAL



B

No. 51 AUGUST, 1953


Notified in AAO's for 31st August, 1953

MILITARY BOARD.

Army Headquarters,
Melbourne.

1/8/53

Issued by Command of the Military Board.



Acting Secretary to the Board.

Distribution:

One per Officer and Cadet Officer.

AUSTRALIAN ARMY JOURNAL

A Periodical Review of Military Literature

Number 51

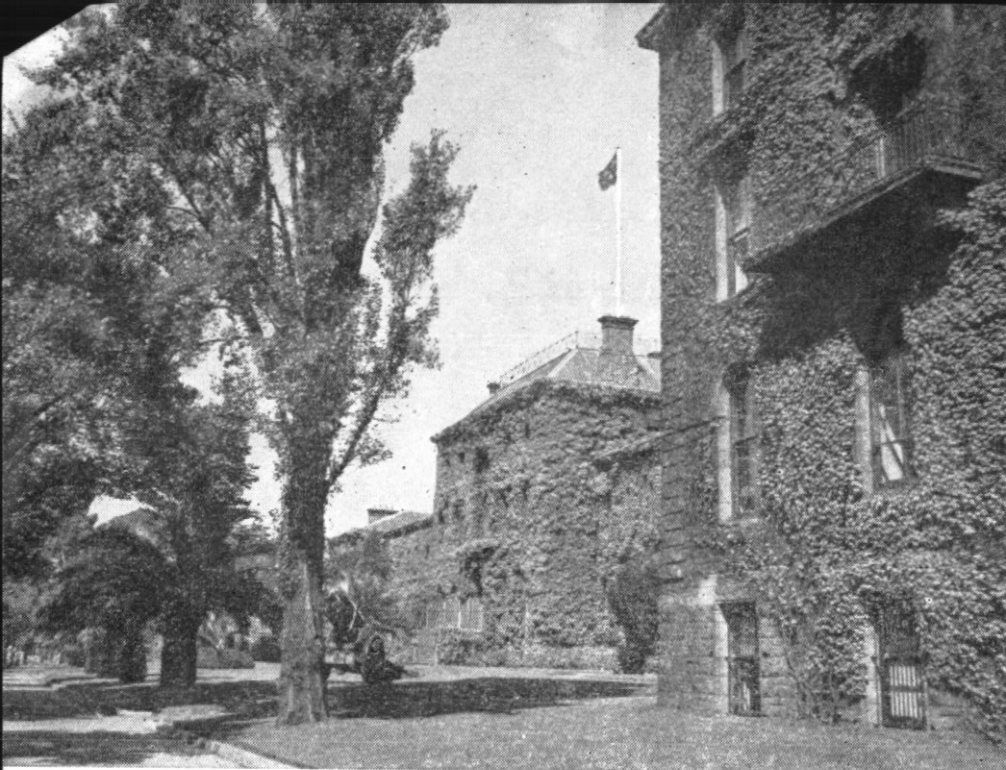
August, 1953

CONTENTS

Collective Security in Theory and Practice	<i>Major A. W. John</i>	5
The Army of the French Union in Indo-China	<i>From "La Revue Francaise"</i>	11
SE Asia Series—British Borneo	<i>Captain J. W. Leigh-Cooper</i>	14
Tanks and Anti-Tank Defence	<i>Kurt Gilbert</i>	21
History of the Military Forces in South Australia	<i>HQ Central Command</i>	25
Army Bands and Bandmasters	<i>Captain R. A. Newman</i>	35
Mobility and Firepower	<i>Major P. Martel</i>	40

The information given in this document is not to be communicated, either directly or indirectly, to the Press or to any person not authorized to receive it.

UNCLASSIFIED



VICTORIA BARRACKS, MELBOURNE.

AUSTRALIAN ARMY JOURNAL

Editor:

COLONEL E. G. KEOGH, ED (RL).

Assistant Editor:

CAPTAIN J. G. SLOMAN, CMF.

Staff Artist:

MR. CYRIL ROSS.

The AUSTRALIAN ARMY JOURNAL is printed and published for the Directorate of Military Training by Wilke & Co. Ltd. The contents are derived from various acknowledged official and unofficial sources and do not necessarily represent General Staff Policy.

Contributions, which should be addressed to the Director of Military Training, Army Headquarters, Melbourne, are invited from all ranks of the Army, Cadet Corps, and Reserve of Officers.

COLLECTIVE SECURITY

IN THEORY AND PRACTICE

Major A. W. John,
Director of Army Education.

COLLECTIVE security has been given its first trial in Korea. In a speech at Taunton on 29 July, 1950, Mr. Clement Attlee, the then British Prime Minister, summed up the matter in the following terms: "A government sponsored and recognised by the United Nations Organization has been attacked from without and has appealed for help; it might be argued that the government concerned is not a particularly good government, but that does not alter the situation; an act of aggression has been committed and if the United Nations is not to go the way of the League of Nations it is absolutely imperatively necessary that a halt should be called to aggression . . . we have got to say here and now that aggression shall not succeed."

That was three years ago. In the meantime, practice has made such an appalling mockery of theory that we may well pause to consider whether certain essentials for making collective security work in the manner that the framers of the United Nations Charter visualised have not been lacking in the case of Korea. The central purpose, as summed up in the language of the Charter, is to ". . . insure, by the acceptance of principles and the in-

stitution of methods, that armed force shall not be used, save in the common interest . . ."

Going back to the days of the League of Nations, there were grave discussions when the Italians invaded Ethiopia in October, 1935, as to possible preventive measures, including the application of sanctions. But the nations were not prepared to fight for the Ethiopians and those who had placed too great faith in the potentialities of the League to prevent or check wars suffered disillusionment. In the last resort, war had proved too formidable an instrument for the League to employ.

The chastening experience of World War II with its frightful cost in human lives (no less than twenty millions), immeasurable human suffering and staggering waste of material resources (placed at 1 trillion, 352 million dollars by the Bank of International Settlements), to say nothing of the horrifying prospects of multiplication on the atomic principle, impelled the framers of the Charter of the United Nations to insert provisions designed to develop a strong system of collective security. In Article 43 member nations are pledged to supply the Security Council on its call with the armed forces and facilities required

to quell acts of aggression. Therefore, in addition to an Atomic Energy Commission and a Commission for Conventional Armaments, set up for the purpose of establishing controls, a Military Staff Committee was also established to work out a system of regional security. The plan was to include arrangements for member nations to provide naval, military and air forces trained and ready for international "police" action in an emergency.

As is well known, the work of the control commissions for atomic energy and conventional armaments was soon deadlocked. The concerns of these bodies were reported regularly in the press, but those of the Military Staff Committee got little mention, which was perhaps due to the nature of the committee itself. Article 47 of the U.N. Charter, paragraph 2, stated that—"The Military Staff Committee shall consist of the Chiefs of Staff of the permanent members of the Security Council or their representatives." The generals and admirals met, but their deliberations were designated "Top Secret." In an atmosphere of increasing international political tension, it is difficult to imagine what secrets could be shared by say a Russian admiral and an American general and remain worthy of security designation. It seems obvious that progress was negligible.

Certain pessimistically wise gentlemen had been telling the world from the outset that these grandiose schemes were doomed to failure. The same nations of the League which talked of sanctions but did nothing when Mussolini invaded Ethiopia were now members of the United Nations, with some very important additions, but all retained their separate and several in-

terests, their jealousies and suspicions. Threats of invasion from another planet might have compelled integration and unity of purpose, but the more earthly proposition of collective security seemed impossible to organize.

No noticeable progress had been made prior to 25 June, 1950, when the Russian sponsored state of North Korea invaded the United Nations sponsored Republic of South Korea. If the world experienced a rude shock, this turn of events should have come as no shock to the Koreans themselves. Both sides had been issuing threats and insults over the 38th parallel ever since the two separate governments were set up in 1948. It would be well to summarise briefly the events which made open conflict practically certain.

The object of the Allies, discussed at the Cairo Conference in 1943 and reaffirmed at Potsdam in 1945, was to establish an independent state in Korea. There was then no thought of division. Whatever reasons might be found in ancient history, economic factors made unity the obvious course. The northern regions have virtually all the minerals, the electric power, the industrial potential and access to many of the best fishing grounds, whereas the southern lowlands provide the agricultural resources of the country.

It should be noted, too, that the Koreans have the misfortune to dwell in a geographical region of great strategic significance. By the Japanese it has been referred to as "a dagger pointed at the heart of Japan" and by the Chinese it is regarded as a spearhead for the invasion of China. Penetrating into farthest Asia in the nineteenth cen-

tury, the Russians joined in the competition for the control of the peninsula.

Amongst the strategic advantages secured by the USSR through declaration of war against Japan only six days before Japan's surrender, was control of Korea north of the 38th parallel. United States forces took over the control of the South. The geographical line was fixed in a mood of crazy optimism; it cut across towns and villages, up and over mountains and through mid-stream. The Moscow Conference of December, 1945, discussed the future of Korea, but found no solution to the territorial division. In 1947, over Russian protests, the United Nations Assembly set up a Temporary Commission on Korea, which entered South Korea and carried out investigations, but could never penetrate the North to examine the situation there.

Of the state of the country early in 1948, an American of Korean extraction, wrote: "In the Russian zone there is no freedom, little food, high taxes and fear. In the American zone it is at least as bad. South Koreans are imprisoned, tortured and impoverished by their own government."

In an attempt to break the deadlock over political control, it was resolved to hold elections in South Korea in 1948. The Republic of (South) Korea was set up with Dr. Syngman Rhee as president. Simultaneously, elections were held in North Korea, where a communist government was established with Kim Il Sung as its leader. This regime was formally recognised by the USSR and satellites as the government of all Korea. Applications were made early in 1949 by both governments for membership

of the United Nations Organization.

The Russians withdrew their forces from the North at the beginning of 1949 and the Americans withdrew all but about 500 technical troops by about May or June of that year. As against this situation, the Russians had trained and equipped a formidable force in the North. The stage was set for violent tragedy.

It is equally important to note the developments in the UNO. Having got nowhere with its insistence on the Chinese Communist Government taking over the representation of China in the UNO, including, of course, the "permanent" seat in the Security Council, the USSR announced its intention of boycotting the Security Council as from January, 1950, and conducted a "stay away" strike so that the USSR was not represented at the momentous meeting of 25 June, 1950. There was no veto! The USSR has maintained ever since that the United Nations intervention in Korea was illegal.

On 25 June, by nine votes to nil (Yugoslavia abstaining), the Security Council called for the immediate cessation of hostilities and the withdrawal of North Korean forces to the 38th parallel. On 27 June, a further resolution recommended that members of the United Nations "furnish such assistance to the Republic of South Korea as may be necessary to repel the armed attack and to restore international peace and security in the area." Fifty-one members, including Australia, the United Kingdom, Canada, New Zealand, Pakistan, South Africa, and the U.S.A., pledged support.

In co-operation with the UNO, President Truman authorised the issue of military supplies to South

Korea, ordered support by the United States naval and air forces, and, by the end of June, committed American troops to action on Korean soil. The relationship of the Chinese civil war to the situation in Korea was not overlooked and the US Seventh Fleet received instructions to prevent Mao-tse-tung's forces from invading Formosa and Chiang-kai-shek's forces from raiding the mainland. An early offer of 33,000 of Chiang's infantry to serve the United Nations cause was refused.

These proceedings bore little relationship to the intentions of the framers of the UN Charter, or the paper plans of the Military Staff Committee for regional security arrangements to deal with acts of aggression. However, there was no time to wait for everything to be worked out to a nicety.

Having occupation forces stationed in Japan, the USA gave the lead and plunged into the fray with scant regard for existing commitments. The Japanese were left to a large extent to occupy themselves, and it is from this period that the formation of the new Japanese armed forces dates.

As everyone who was on the spot knows, many American units were considerably under strength and largely composed of young draftees with no combat experience, some but recently arrived in Japan from induction centres in the States and others counting the days to their "separation." In early July, 1950, one met these lads, but recently doing clerical jobs in service units, on their way to battle not as members of trained and confident units, but as individuals in reinforcement drafts, somewhat bewildered at the dramatic turn of events.

At first there was a reluctance to face up to the realities of the situation. It is pertinent to recall that the always polite Japanese, out of deference, used to refer to the war as "the riot in Korea." There may have been some who considered it a God-given opportunity to unify Korea, but the facts of the situation gave the lie to rival propaganda that South Korean forces had actually invaded the North. It was touch and go, perhaps, but the Northerners set the match to the powder barrel.

The question of war aims, on which such grave emphasis was laid during World War II, was lightly tossed aside. Indeed the only person with a fixed and inflexible aim seems to have been Syngman Rhee, who has continued in favour of unifying Korea with the aid of the United Nations armed forces. On the other hand, the General Assembly repeatedly declared that its sole purpose was to repel aggression and to help by peaceful means to establish a unified, independent and democratic Korea.

With the return of the Russian representative to the Security Council in August, 1950, the shadow of the veto reigned again. To meet this situation, the General Assembly in November, 1950, adopted a resolution entitled "Uniting for Peace," designed to enable the United Nations to act effectively against future aggression in all circumstances. Under this resolution, the Assembly can be called into session within 24 hours by any seven members of the Security Council or by a majority of members of the UNO. It can deal with any matter which appears to threaten the peace, and recommend the use of armed forces to suppress an act of aggression.

Members are recommended to maintain within their national armed forces elements so trained, organized and equipped that they could promptly be made available for service as United Nations units. Neither these methods, nor the Collective Measures Committee, set up to study methods which might be used to maintain and strengthen international peace and security, provided actual United Nations control of the operations in Korea.

Lacking a "Joint High Authority" to give shape and direction to its own policy, United States leadership has been accepted by the United Nations. Exactly what was the USA policy concerning Korea has been difficult to determine. It has depended only partially on the White House, the State Department and the Pentagon. At times the US Proconsul in the Far East moulded it to his own manner of thinking, and the baleful influence of Chiang-kai-shek was felt via the China Lobby in the USA. Many Americans preferred to regard the "riot in Korea" as something in the nature of a jumping off place for operations against what they imagined to be a sort of modern Boxer Rebellion.

British policy was consistent even when Churchill followed Attlee in the lists: "to support the United Nations action against aggression; to limit that action as far as is humanly possible to Korea, and to end the war rapidly by a truce and a negotiated peace settlement."

Had there been United Nations direction of operations in Korea, the war might have been settled in six months with only a fraction of the destruction and loss of life. The overwhelming success of the Inchon landing in the grand MacArthurian style of World War II would have

provided opportunity for negotiation with the North Koreans from a position of strength insofar as the single act of aggression in Korea was concerned. What followed was certainly not the United Nations Charter method of settlement, nor the British policy method, but a combination of the MacArthur/Rhee method. Its effects must have given immense satisfaction in Moscow on the one hand and in Taipei on the other.

The Chinese Communist Government, having suffered loss of face over rejection by the UNO, was issuing solemn warnings over Peiping radio that it would consider its vital interests threatened if UN forces extended operations to the border regions. Any student of history could have foretold what would happen, but students were being bludgeoned into silence by the McCarthy movement. General MacArthur's judgment seems to have been based on similar influences to the "Life" editorial of 6 November, 1950, which claimed "... the danger of Chinese or Soviet intervention when the North Korean communists were pressed close to the border always was, in our curbstone opinion, negligible. Mao-tse-tung has seen what American air and sea power can do; he must be quaking in his boots lest this power be placed at the disposal of Chiang-kai-shek on Formosa." History records several expressions of the Monroe Doctrine which provide powerful contradictory evidence of what a government is likely to do in such circumstances.

The rage and indignation of those who saw the prospect of victory and unification so quickly dispelled through the consequences of their own folly, are understandable; but

rage and indignation are bad counsellors. The dangers of unilateral leadership were being underlined. It was about this time that the British Prime Minister, flew to Washington.

After two and a half more years of war Korea has been laid waste from one end to the other. The civilian death roll is agreed to run into millions. Millions more are homeless or reduced to starvation. The casualties of the opposing armies are on the scale of World War II.

Such catastrophic results mock the basic principles of collective security. Is the proposition hopeless, or is it possible to arrive at a set of conditions wherein a Mussolini or a Hitler could be stopped in his tracks and brought to trial as a war criminal? Is it possible to keep the peace through an overwhelming combination of the forces of the majority of nations? Or, in the language of the Charter, to ". . . insure, by the acceptance of principles and the institution of methods, that armed force shall not be used, save in the common interest . . .?"

Certain fundamental conditions appear to be necessary, namely:—

1. Universal acceptance of the principle that aggression is the unforgivable international crime.

2. The representation of all nations in the United Nations Organization by the governments which do in fact hold the power and represent the people.
3. A revision of the Security Council procedure to abolish the veto so that effective action could follow a simple or two-thirds majority (rather than risk a split through the alternative General Assembly action).
4. A new and untrammelled approach to the problems of atomic energy and conventional armaments.
5. Regional security arrangements brought to final and effective form.
6. A "Joint High Authority" to control actual collective security action.

Obviously, progress towards such conditions depends upon a political settlement of a number of contentious international problems. Whether the conditions, the environment for success, can be arrived at without a return to the actual mental atmosphere which attended the birth of the United Nations Organization itself in 1945 is the gravest question of the day.

THE ARMY OF THE FRENCH UNION

IN

INDO - CHINA

Translated and condensed by the "Military Review" from an article in "La Revue Francaise," France.

TO the uninitiated Frenchman landing in Indochina, his first contacts with the Army never fail to be rather surprising. This is no doubt because the Army of the French Union in Indochina is a unified force of heterogeneous elements and varying organizations.

Army Missions.

The Army is a product of circumstances which is constantly modified and changed according to the successive situations that have developed, but a force that is particularly well adapted to the missions that it is called upon to perform. The Army of the French Union in Indochina has three missions, namely:—

1. The pacification of Indochina by bringing the Vietminh into subjection.
2. The protection of Indochina against an eventual invasion.
3. The training of the armies of the associated states.

Instrument of Pacification.

As an instrument of pacification, it is charged with the task of destroying the Vietminh forces, by fighting against guerilla forces and

terrorism. However, because of his particular evolution, the Vietminh has ceased to be a purely internal enemy. He controls, as a matter of fact, a part of Vietnam, where he has organized regular forces which are attempting to penetrate into our dispositions. Until the day when all of Indochina is controlled, to the mission of internal pacification will be added the mission of defence.

Protection Against Invasion.

Internal pacification would be a relatively simple task, even for an army which has other missions to perform, if the menacing shadow of the Chinese hordes did not show itself on the frontier of Tonkin. As is well known, here they stand ready to fan out over the tempting and age-old prey which is represented by the rich plains of Tonkin and Cochin China. They hope, thereby, to reimburse themselves for the material aid which they have provided the Vietminh.

Training for the Armies.

Finally, to these two missions, which are more specifically of a military nature, is added a third, which is the heaviest responsibility:

that of preparing, materially and morally, the armies of the associated states.

In this task, the Army of the French Union furnishes these armies with a doctrine, with training, and with the necessary support to assist them in their growth and in their eventual baptism of fire. Moreover, the Army of the French Union, through the training in its mixed formations serves as the transitional element in providing trained combatants and technicians for the armies of the associated states.

Flexible Organization.

The number and the complexity of the problems to be solved have led to an organization of extreme flexibility. This organization includes standard regular units, as well as supplementary formations, working side by side in the accomplishment of their various missions.

Regular Units.

The regular units, in their organization and capabilities, are similar to the corresponding units of the French Army. They are the backbone of the colonial forces. To a large extent, these regular forces constitute attack units. Organized as well-equipped divisions or tactical groups, they are trained in the techniques of modern warfare.

Supplementary Units.

Alongside these regular formations are a large number of supplementary units, whose organization and physiognomy vary "ad infinitum." Composed of natives recruited, as a rule, in the zone in which they operate, these units are generally provided with French cadres. These formations are used primarily to maintain security in pacified zones and as scouts and flank guards for the regular units. Lightly equipped and capable of

movement anywhere, these units are used to infiltrate enemy positions, to cause confusion, and to bring back information and prisoners. Moreover, because these troops are well acquainted with the country and the inhabitants, they are used to explore and to mop up newly conquered territory.

Army Recruitment.

Besides being different from the French Army in organization and origin, this Army is also different from the recruitment point of view. France, occupied with many burdens, particularly European, has not been able to assign more than limited forces to the Far East theatre, and these have been mostly cadres. Therefore, this Army is composed of North Africans, Senegalese, Legionnaires, and persons from every corner of the globe. The associated states, who are chiefly interested in the outcome of the struggle, have contributed more than any other member of the French Union to the recruitment of the Army of the French Union in Indochina. They have furnished the men for all the supplementary units and about a third of the regular mixed forces.

Reasons for Unity.

After contemplating this mosaic formed by such differing elements coming from all regions of the globe, one is led to wonder how it was possible to achieve a unified army. Probably the main reason is that these men are all volunteers who have come to fight. The fact that they receive pay does not make them mercenaries, for it is the mysticism of action and risk that has attracted them to Indochina, and not the lure of compensation, which is ridiculously small in comparison with the value of life.

Another reason for this unity is the fact that all the units of this Army have been trained by French cadres, and, therefore, are accustomed to the same methods of command, are trained in the same combat methods, and have lived in the same French Army atmosphere.

A Combat-Tested Army.

This Army's real, deep, and living unity has stood the test of fire, and in point of combat camaraderie sur-

passes considerably the allied armies at the time of World War II, which was without question.

Thus is being trained on the soil of Indochina, in the crucible of battle, the Army which tomorrow will provide the cadres, troops, and doctrines for the armed forces of the associated states—armed forces which will be strong enough to ensure, alone, the pacification and security of their territories.

The enemy of today is the customer of tomorrow and often the ally of the future. To inflict widespread and excessive destruction is to damage one's own future prosperity, and, by sowing the seeds of revenge, to jeopardize one's future security.

—Liddell Hart.



BRITISH BORNEO

Captain J. W. Leigh-Cooper, RAAOC.
RAAOC.

BORNEO is the third largest island in the world, its area being 284,000 square miles. The greater portion—about two thirds—formed part of the Colonial Empire of the Netherlands; the remainder, comprising the States of Sarawak, Brunei and North Borneo, is un-

der British protection: the island of Labuan, about 5 miles off the west coast of North Borneo, was a part of the Crown Colony of the Straits Settlements.

The areas of the various states are:—

	Area Sq. Miles	Greatest Length	Greatest Breadth
Sarawak	50,000	450	120
Brunei	2,226	70	90
North Borneo	29,500	200	220
Labuan	40	11	6

In Sarawak, except in the extreme north and south, the coast line forms a broad belt of undu-

lating plain broken by occasional hills. In the interior the hills rise to 6000-8000 feet. Numerous rivers

intersect the country and form the cheapest means of transport. The principal of these rivers are the Rejang (navigable for 160 miles), the Baram (navigable for 100 miles), the Batang Lupar and the Limbang. Bars at the mouths of some of these rivers prevent the entrance of large vessels.

Kuching, the capital, stands on the Sarawak River, 20 miles from its mouth; Kuching, Sibiu, Miri, Sarikei, Bintulu and Binatang are the principal ports and have direct communication with Singapore, but none of these harbours can be called good.

North Borneo includes the whole of the northern portion of the island from the Benkulit River on the west, which divides it from Sarawak, to the centre of Sebaltik Island on the east, where it meets Dutch territory.

The centre of the territory is mountainous, culminating in the peak of Kinabalu, 13,453 feet high.

There are good harbours at Tawau

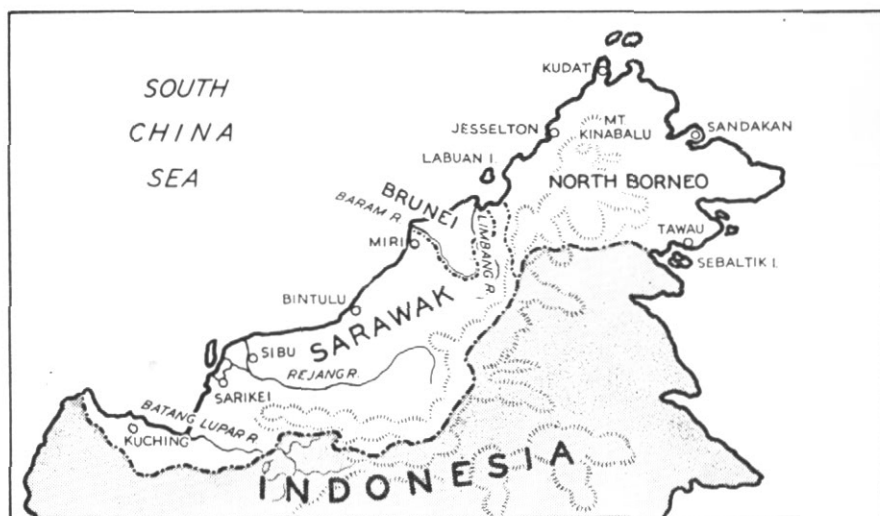
and Sandaken on the east coast, at Kudat in the north and at Jesselton on the west coast.

Labuan is a small island lying 5 miles off the mainland opposite the Bay of Brunei. Consisting of low, undulating land, it has a small well-sheltered harbour.

The climate of Borneo is equable, but hot and humid. In the lowlands the temperature rises from 70 degrees in the morning to 94 degrees in the afternoon; the annual rainfall is from 60 to 100 inches, according to locality. Monsoons are NW and SW; the former begins about the middle of October and continues until about April. During the SW monsoons, between April and October, the wind is usually light. Borneo lies outside the typhoon belt.

History.

Early in the sixteenth century, the Sultan of Brunei was the overlord of the territories which now comprise Sarawak, Brunei, North Borneo and Labuan.



Brunei tradition goes back to the first Mohammedan Sultan, and the few historical documents date from the subsequent introduction of the Arabic script. The first European account of Brunei was written by Pigafetta, the historian of Magellan's voyage around the world, who in 1521 visited the capital of this extensive kingdom and was greatly impressed by the imposing splendour of the ceremonial at court.

In the sixteenth and seventeenth centuries Brunei had connections with the Portuguese, Spanish and Dutch, but early European intrusions were unenlightened, and so restricted trade that the power of Brunei declined. An era of lawlessness ensued, and by the middle of the nineteenth century piracy had become such a scourge that for 40 years the charts warned merchants that it was certain death to go up river in Brunei.

During this period the territory of the east coast of North Borneo passed under the suzerainty of the Sultan of Sulu, whose seat of government was in Mindinao, Philippine Islands.

Brooke Rule.

In 1839 James Brooke first visited Sarawak, and the unique story of the founding of the State of Sarawak merits recital in some detail.

Brooke, the son of Thomas Brooke, of the Honourable East India Company's Bengal Civil Service, entered the East India Company's Army in 1819 at the age of 16. He was severely wounded in 1825 and given leave to England. His wounds took long to heal, and when he eventually left England shipwreck and storm made it impossible for him to return to duty before his commission lapsed in

1830. He accordingly resigned the service and returned to England via Singapore and China.

As a result of this voyage, Brooke conceived the idea of fitting out a ship for a voyage of trade and exploration in the China Seas. After his father's death he inherited the sum of £30,000 and he bought the schooner *Royalist* of 142 tons, in which he set sail on 16 December, 1838, with the blessings of the Admiralty.

The prospectus of his voyage, under the title "Expedition to Borneo," was published in the "Athenaeum" on 13 October, 1838, and in this he set out that the purpose of the expedition was to explore the territory in Borneo ceded in 1756 to the East India Company by the Sultan of Sulu. The *Royalist* reached Singapore at the end of May, 1839, and towards the end of July sailed for Brunei, the intention being to examine the coast as closely as possible and to visit Sarawak, whence antimony ore was sent to Singapore. The *Royalist* arrived at Kuching on 15 August, 1839, and friendly relations were immediately established with Pengiran Muda Hassim, Uncle and Vice Regent of the Sultan of Brunei.

Brooke left for Singapore on 1 October, 1839, taking with him a letter from Pengiran Muda Hassim granting the Singapore merchants permission to trade with Sarawak.

Brooke then visited the Celebes, returning to Singapore in May, 1840. He arrived in Sarawak for the second time on 29 August, 1840, to find that a rebellion which had prevented him visiting the interior in the previous year was still going on, and that some of the insurgent

Land Dayaks were within 30 miles of Kuching. Pengiran Muda Hasim entreated him to stay and help him, and offered him the country of Sarawak if he would. As a condition of his remaining, Brooke stipulated that the Pengiran Muda should give him authority in his army. This authority counted for little with undisciplined levies, and he was unable to exercise much influence until a charge by Brooke and his Europeans saved a party of Malays. From then on he had the full support of all troops.

Brooke then left for Singapore, promising to return with a mixed cargo of goods in return for which the Pengiran Muda undertook to have a cargo of antimony ready. Brooke returned in April, 1841, in the Royalist with the schooner Swift to find no antimony ready.

Brooke had not immediately accepted the offer of the cession of Sarawak, but on finding that he would otherwise be powerless against the intrigues of the Sultan's officials he finally consented, and an agreement was drawn up by the Pengiran Muda ceding Sarawak to James Brooke with the title of Rajah of Sarawak. In return Brooke undertook to pay an annual tribute to the Sultan of Brunei and to respect the customs and religion of the country. This agreement was signed on 24 September, 1841, and confirmed on 1 August, 1842.

The cession was of the territory known as Sarawak proper, extending from Tanjong Datu to the Samarahan River, and in 1904 the sovereign rights over the Lawas District were purchased from the British North Borneo Company.

Brooke's policy, repeatedly stated in his journals and letters, was to



Accepting a Dyak parang from the Temenggong Koh, Paramount Chief of the Ibans of Upper Rejang River: The Duchess of Kent in the portico of the Residency at Sibü.

rule the country through the native chiefs for the benefit of the country and the people. In a letter written early in 1842 he states:—

"If it please God to permit me to give a stamp to this country which shall last after I am no more, I shall have lived a life which emperors might envy. If, by dedicating myself to the task, I am able to introduce better customs and settled laws, and to raise the feeling of the people, so that their rights can never in future be wantonly infringed, I shall indeed be content and happy."

The policy laid down by the first

Rajah remained the policy of the State. Sir James Brooke died in 1868 and was succeeded by his nephew, Sir Charles Brooke, who ruled until his death in 1917, when he was succeeded by the last Rajah, his son, Sir Charles Vyner Brooke.

In 1847 the Sultan of Brunei concluded with Great Britain a Treaty for the furtherance of commercial relations and the mutual suppression of piracy, and also confirmed the cession of the Island of Labuan.

During the following decades both British and American interests endeavoured to obtain a firm footing in North Borneo; but it was not until 1872 that the Sultan of Brunei ceded a large area to Mr. Alfred Dent and his associates, in return for annual payments. The cession conveyed full rights over territory and was made in perpetuity. In November, 1881, the British Government granted a Charter to the British North Borneo Company, which had taken over the concessions from Mr. Dent.

In 1864 Great Britain recognised Sarawak as an independent State, and in 1888 concluded a Protectorate agreement with the Rajah, undertaking the protection of the State, but agreeing not to interfere with its internal administration. This was concluded in 1946 when the Rajah handed over the State to Great Britain.

Population.

Sarawak.

The population, as at last census in 1940, was:—

Men	Women	Children	Total
164,325	150,992	175,489	490,806

and was made up as follows:—

Natives of Sarawak	361,955
Europeans	427

Eurasians	277
Chinese	123,626
Indians	2,323
Japanese	155
Javanese	1,885
Others	158
	<hr/>
	490,806

North Borneo.

Natives.

Dusuns	117,482
Bajaus	34,089
Muruts	24,444
Others	30,429
	<hr/>
	206,444

Immigrant Stock.

Chinese	47,799
Javanese	9,854
Malays	953
Indians	1,298
Japanese	450
Eurasians	236
Europeans	340
Others	2,849
	<hr/>
	63,779

Grand Total 270,223

Native Races.

Sea Dayaks, or Ibans, are the most numerous of all the races in Sarawak. There is considerable conjecture as to the origin of these people, but it is certain that they are not indigenous to the country.

The Ibans are a vigorous healthy race who live in long houses containing as many as 40 families. They have little native culture, but are quick to learn and have borrowed customs and ideas freely from many races, including Europeans. Normally they plant hill padi, but in

recent years have adopted the idea of irrigation.

Malays (including Kedayans). — The Sarawak Malays claim affinity with Menangkabau in Sumatra and have inter-married with Land Dayaks and Sea Dayaks.

The Brunei Malay has evolved from the original Pa Belats of Brunei, inter-married with Arabs, Chinese and Rian Malays.

Kedays occur chiefly in Sibuti and at Limbang and Lawas; they are said to be descendants of Javanese slaves left behind by a Sultan on a visit to Brunei.

Land Dayaks.—Their origin is obscure, but it is of interest to note

that relics of Hindu culture have been found in the Samarahan and that some burn their dead.

Kelamautans. — This word was coined by the anthropologists McDougal and Hose to refer to the inland sago-eating inhabitants.

Kayans and Kenyaks.—There are 21 tribes of Kayans and 28 Kenyaks. Their origin has never been accurately determined, but there is some reason to believe that they are of Polynesian stock.

Kelabits and Muruts. — These people, having a common origin, live in the interior, but their origin is obscure and it can be assumed that they originated in some country well advanced in irrigation.



Awang Anak Rawang, who was awarded the George Cross for scout work in Malaya, waiting with Dyak notables for the arrival of the Duchess of Kent at Kuching.

The Dusuns are found between Tenghilan and Kimanis on the west coast and Ranau and Tambunan in the interior. They are substantially agriculturists and own most of the padi (rice) land.

The other groups found in Borneo and Sarawak comprise Muruts, Tagals, Bruneis, Besayas, Tutongs, Land Bajans and Sea Bajans, Illa-

nuns, Sulus and Tidongs.

With the occupation of the country by the Japanese in 1941 and subsequent migration of Indonesians and Malays from the Straits Settlements, it is possible that endeavours will be made to stir up feeling against the British in this area. This possibility will have to be closely watched.

Our victory in World War II and our successes in Korea were dependent on mobility and fire power. We acquired mobility by having available ample supplies of motor vehicles. While our fire power was dependent on reliable and accurate weapons supplied with adequate quantities of ammunition, it was equally dependent on the means of getting the ammunition to the men who could use it at the time they needed it—the men on the firing line.

—General J. Lawton Collins, US Army.

TANKS and ANTI-TANK DEFENCE



Translated and condensed by the "Military Review,"
USA, from an article by Kurt Gilbert in
"Revue de Defense Nationale" (France).

IT is not the purpose of this article to advocate a particular type of employment for tanks or anti-tank defence, but, rather, to discuss the respective values of the tank and anti-tank defence, based on the author's combat experience with the German Army in World War II.

The Tank.

The tank possesses three fundamental characteristics; mobility, fire power, and armour protection. It is in accordance with these characteristics that the tank is engaged on the battlefield. At times, one of these three will dominate, at times another, depending upon the situation. It is the duty of the commander and the individual tank crews to make the decisions in regard to these characteristics, for they give the tank its value in combat.

Anti-tank Defence.

Anti-tank defence aims, above all, at penetrating the armour of the tank in order, to put it or its crew, or both, out of action. At first glance,

this might sound like a simple task, especially if the number of anti-tank weapons bears any relationship to the number of tanks. However, we know that the North Koreans obtained their alarming successes during the initial stages of the Korean conflict with only four battalions of tanks, which enabled them to bring the opposing forces almost to the brink of destruction. Let it be noted also that Korea does not possess terrain that is favourable for the operation of tanks; on the contrary, the terrain lends itself particularly well to a defence against the tank. Moreover, the tanks employed by the North Koreans were not ultramodern, but rather T34s, with an improved turret and 85-mm. gun.

What has been said so far is not intended to place major emphasis on the tank, for it goes without saying that the anti-tank guns are capable of putting a tank out of action. There is, however, quite a discrepancy between theory and

practice. There is much that can be said for both sides—that is, the tank and anti-tank defence — they both have their advantages and their disadvantages.

Penetrating Power.

During the Polish campaign, my tank was hit six times by projectiles, which pierced the armour, but it was only the seventh that set fire to it, putting it out of action. Although the tank was knocked out of action, not a man of the crew was wounded.

During the course of the Kurland fighting, which lasted 10 days, we counted, every evening, the number of hits received by our tanks. Every tank had been hit at least two to four times. In totalling them all up, it was reassuring to find that the percentage of hits actually attaining their aim of putting the tank out of action was relatively small.

Attempts were made during the last war to improve the penetrating power of the various anti-tank weapons, but these changes were generally met with improvements in tanks, such as thicker armour and better slope of the outer surfaces to deflect projectiles. Thus, tanks became heavier and slower, and anti-tank weapons became bulkier and harder to conceal.

Psychological Factor.

There is another factor that must also be considered in a discussion of the tank and anti-tank defence — this one is psychological. There is a great deal of difference between a weapon which is protected by an armoured shield, and able to manoeuvre with calmness and assurance, and a weapon which is unprotected and threatened from every side. Everyone who has witnessed a tank charge into enemy lines has

seen this psychological factor produce greater results than the employment of its weapons.

Air Attack.

There were many examples of aircraft attacking tanks during the last war, but it is impossible to state that individual attacks by planes were always crowned with success—either in the East or the West. In the initial phase of the Normandy landings, allied bombers, operating in groups, were able to achieve certain results against tanks which were not engaged, but fighter planes did not register particular success. Who does not remember the diving attacks that Soviet fighters made against our isolated tanks, sometimes lasting for hours, but which ended with no success? Liddell Hart has also stated that the action of United Nations planes against tanks in Korea has not justified the hopes founded on this action. The tank has chances, therefore, in the face of aircraft. The effort must be made to maintain these chances, even of increasing them.

Tank Construction.

As has been stated before, three elements must be considered in the tank—its mobility, its fire power, and its armour protection. It is the harmonious balance of these elements that makes the tank a weapon of great value. However, since these elements work against one another, one is always forced into a compromise. An increase in the strength of the armour protection results in an increase of weight, which holds back speed or leads to fitting the tank with heavy appendages.

Armour protection is certainly an important consideration, and one is

inclined to develop it as much as possible, as was done in the case of the German "Tiger" tanks. However, it must not be forgotten that the most common Soviet tank is a medium tank, which has played, and still continues to play, its role perfectly—as witnessed in Korea.

Everything considered, a medium tank incorporating the following features could play a decisive role on the battlefield; weight not exceeding 45 tons; armour plates placed at the optimum angle to deflect projectiles; top protection against air attacks; a speed of up to 25 miles an hour, even in loose soil; a powerful engine, diesel if possible; a radius of action of 125 miles; a 75-mm. or 88-mm. gun of very high muzzle velocity; a machine gun firing forward; an anti-aircraft machine gun capable of being manoeuvred from the turret; steel bogie wheels faced with rubber; and broad caterpillar treads.

Number and Organization.

A certain school of thought sees the tanks as an instrument to support the infantry in attack and defence. Another sees it as a strategic weapon which, in the form of divisions or corps, fulfils in an offensive manner even defensive missions. Only this latter concept corresponds with the real nature of the tank; all the others rob it of its principal element: mobility.

The manner in which an army organizes its tanks is the clearest index of its intentions. On the other hand, the absence or the presence of tanks determine its possibilities. The conclusion that one can draw from the German experiences on the various fronts is that the success and possibilities of tanks diminish with their number (see diagram) and that increases in

calibre should never be obtained at the expense of numbers.

The construction and maintenance costs of the armoured formations, and the limits which are imposed on the same, will stand in the way, doubtless, of the possession of two types of tanks: one type to support the infantry and another type for the strategic armoured divisions. It will be necessary, therefore, to decide on one or the other. If one chooses the first solution, we have the experience of World War II to show us where that will lead. Although the number and the quality of the tanks employed in 1944 were greatly superior to what they were in 1940, it was no longer possible to achieve decisive concentrations; the tanks were distributed like "corset stays" over the entire length of the front, utilized in part as fixed strong points, and shorn of their most valuable characteristic—movement.

Resistance in Combat.

Tanks are much less vulnerable than is commonly admitted. Their resistance in combat in the face of special weapons is astonishing, even unbelievable. The most recent experiences from Korea confirm this fact. When one hears it said that the era of great armoured operations has passed, it suffices to recall the victorious action of the Soviet tank units in Germany during the final phases of World War II. However, as is the case with all weapons, certain conditions have to be fulfilled. In addition to the purely technical problems, one has also to solve those of organization. The organization that most nearly emulates the tank's major characteristic — movement — is the armoured division. The armoured division should have at its disposal a sufficient number of

tanks to give it the ability to attack with all the power and to whatever depth that is necessary. The minimum should be 300 tanks.

The armoured division finds its complement in armoured infantry, artillery, engineer, signal, and reconnaissance units. All of these should be capable of following the tanks on the field of battle. All should, therefore, be equipped with light armoured vehicles capable of cross-country movement.

It will be necessary in the future to give particular attention to protection against air attacks. All the units of the armoured divisions must be provided with weapons of great fire power for this purpose. These weapons must likewise possess suffi-

cient protection to enable their crews to serve them with the calm and assurance necessary in the face of attacks by fighter planes and fighter bombers.

Another factor, and this one is of primary importance, is the selection and training of the men who will operate these costly weapons. They must possess the ability to make prompt decisions, they must be mentally supple, and they must possess great perseverance. Appropriate training must make them capable of rapid independent action, and of perceiving instantly the smallest chances offered by a local success. It is they who create the conditions which enable the command to act decisively.

Unless we are honest about our past and alertly critical about our present, the odds are heavily against any improvement in our future — at our next test.

—Liddell Hart.

THE HISTORY OF THE MILITARY FORCES IN SOUTH AUSTRALIA



THREE phases stand clear in the military history of South Australia — first, the spacious Victorian era which closed with “Soldiers of the Queen” replayed at each Boer War veterans’ dinner; second, the post-Federation phase of awakening to national responsibility, closing with the conversion of the Citizen Forces to a voluntary basis on 1 Nov., 1929; third, the current period of rearmament.

Active interest in the military forces ebbed and flowed with the alarm that cables could induce in the parochial. The nett effect was a record of peacetime enthusiasm by a small group of volunteers, and a sound record in wars when the public mind eventually was stirred to action.

Phase 1.

Conception.

The Colony of South Australia was proclaimed by Governor Hindmarsh, RN, on 28 December, 1836, Adelaide was planned and sited with defence in mind, and was protected by Royal Marines of HMS Buffalo, which swung at anchor at Birkenhead, near present Navy HQ. Colonists objected to the Marines’ “evil effect on the labouring population”; the Sheriff resigned because the Marines allowed prisoners to escape from the gaol; the Surgeon reported in a postmortem on an alcoholic that with one exception his Marine patients had illnesses “produced or aggravated by drinking spirits”; the Governor personally directed that Marines were not to

enter public houses or be sold drink of any sort. Small wonder "the Colony rejoiced" when they left on 21 July, 1838.

Disputes then arose in the newspapers about Governor Hindmarsh assuming the title of C in C, some claiming he did not rank with an Army colonel, which was the minimum rank for a C in C in a station abroad. There was no Army.

Strong-speaking watchdog of public interest, the "SA Gazette and Colonial Register," on 11 August, 1838, commented that Governor Hindmarsh had "endangered the safety of the Province by rejecting the police force and militia staff which the Commissioners (in England) had proposed." They were supporters of a "well organized body" and expressed "strong aversion to all varieties of amateur watchmen or diletante militia." It was further urged that "in the present state of the police force it would be desirable that there were some means by preconcerted signal of collecting the colonists together at a particular point in case of emergency. We suggest one of the carronades at the bay be brought up and placed near Government House, the firing of which would immediately collect colonists at that spot."

The Register allowed its business instinct enough ascendancy over its aversion to amateurism to run an advertisement on 6 October, 1838: "Lovers of the manly sport are hereby informed that a society is about to be formed at Watt's British Tavern, North Adelaide, to be called the Adelaide Rifle Company. The private citizen proposing this said 'a draft of the rules will be laid before the members' and 'amateurs will find superior pieces ready for practice'."

Volunteer Militia to 1854.

By 29 February, 1840, the Government proposed a volunteer force of lancers or light dragoons and some light infantry. Horse and foot artillery were to be added when pieces came from England.

Service was to be local, except in emergency. Each member would buy his equipment and horse, and if he desired could have his fusil and bayonet for thirty shillings after two years' satisfactory service. Persons with "serviceable musquets" were invited to volunteer as light infantry. Drill was for three months for one hour on three days weekly or until proficient. "Moderate fines and penalties by Act of Council to ensure attendance at parades and necessary regularity of conduct" were proposed.

Applications at Brigade Office, King William Street, between 1100 and 1500 hours from 28 March, 1840, resulted in 77 officers and men organized as two cavalry troops and one infantry company. Though provided with two lieutenants, one cornet, one cavalry surgeon and one infantry surgeon there were no drills held after June, 1850.

Imperial Troops Brought In.

Although SA had representative Government in 1850, and responsible Government from 1857, Imperial troops served there from 1840 to 1870. Not until 1882 was any SA Permanent Forces enlisted.

On 17 October, 1841, "A" Company, 96 Regiment, under Captain Butler, arrived from Hobart. They were quartered in a warehouse in Grenfell Street.

On "A" Company's move to India, 1846, a company of 84 men, under Major Reeves, 99 Regiment, relieved them before in turn it was relieved

by a company of 11 Regiment under Captain R. Webster. The "Barracks" was now in Flinders Street. "A" Company of 12 Regiment was next relief.

Stone barracks were occupied in 1851. These had barrack rooms for 100 men, offices, and apartments for married couples. "A" Company of 40 Regiment under Captain Blyth enjoyed these quarters until 1863.

The First Russian Scare.

In 1854 the Russian menace brought about the appointment of Brevet Major Moore, of 11 Regiment, as Colonel Commandant to supervise organization of volunteers. A Board of Survey detailed the colony's arms and ammunition, comprising two brass 6 prs, two 12 prs, two mortars 4 inch, some shot case and round strapt, commonshell, mortar shell, and small arms of 514 flint muskets and 24 carbines percussion (without ammunition), one pistol, 840 bayonets, and 51 swords, including 17 unserviceable and declared for disposal. There were some less lethal items, including 501 breastplates.

The September, 1854, Militia Act had by November produced a troop of SA Mounted Rifles, two artillery companies, and two infantry battalions, each of six companies. Pay for a private was 6/- daily. By 9 February, 1856, the crisis seemed over. Arms were returned to store, and the force ceased to exist.

In 1858 a Select Committee recommended raising volunteer forces against "predatory attack made by the crews of enemy ships" and based faith on a British steam naval force which could be summoned by "instantaneous communication" of the electric telegraph. Its appreciation pointed to the need of artillery, volunteer or otherwise, comprising

50 foot artillery at the Port and 20 at Glenelg. A battery in a martello tower at the entrance to the Port and a gun platform at Glenelg were also needed. Purchase of Newcastle coal at 35/- a ton to coal cruisers was recommended.

In 1859 Major Nelson was general supervisor of the volunteers to be raised, again under the 1854 Act. The total of 550 was organized as artillery at Port Adelaide and Adelaide, plus 14 small rifle companies at the Port — First Adelaide, Glen Osmond, Glenelg, Mitcham, Adelaide, Adelaide Marksmen, One Tree Hill Rifles, West Adelaide, Sturt and Brighton, Edwardstown, and outside the metropolitan area, Nairne, Gawler and Noarlunga. By April, 1860, the force numbered 2,000, and included a troop of Reedbeds Cavalry (Lockleys). In 1861 the SA Free Rifles were organised as skirmishers with a strength of 42, and supplied their own weapons and equipment. In 1862 two more committees reported at length on defence. (I read their report, but it is not apparent from later events if anyone else did.)

Maori War.

When in 1863 the Imperial Troops left for the Maori War, the only regular representative for three years was the Commissariat man. Women and children were left to themselves until a Soldiers' Wives' Relief Committee undertook their support by public subscription. The wives later joined their menfolk.

Reorganization.

In 1864 Britain politely refused replacement of Imperial troops as "foreign aggression or extensive conflagration" did not warrant it.

In 1866 a Volunteer Forces Act replaced existing forces with a reserve of men of three years' service, an active force of the South Austra-

lian Regiment (four cavalry troops), three artillery companies, and the Adelaide Regiment of volunteers of nine companies including No. 2 Scots Company.

In 1864 means of making the Army popular were being discussed. The opinions of Colonel Biggs of the Volunteer Military Force were called for, and captains of RN ships entering the Port were requested to report on the effectiveness of the batteries at the Port. In 1865 a further Commission prepared a voluminous report. It recommended two guns at Port Wallaroo (this is a shallow dint in the coast-line with a long jetty for shipping wheat), and expressed the opinion that volunteer forces could never be effective except as auxiliaries. Perhaps there was no wish to repeat the story of the Kapunda Mine Rifle Company which claimed seniority over the Kapunda Company, formed on the same day — the Governor would not grant the claim so the whole unit resigned. The Commission felt the volunteers should assist a paid, well-drilled militia, called out "for specified periods and paid at current rate of labour wages."

In 1867 the Duke of Edinburgh visited Adelaide and renamed the cavalry "Duke of Edinburgh Volunteer Light Dragoons" the Adelaide Regiment "Prince Alfred's Rifle Volunteers" and No. 2 Scots Company "Duke of Edinburgh's Own."

Imperials had returned in 1866, and in 1867 enthusiasm was waning for volunteers. In 1870, volunteers being mostly a force on paper, most employees in the Volunteer office were dismissed.

In 1866 two full companies of the 2/14 Buckinghamshire Infantry arrived, but departed on 10 August,

1867, on relief by 50 (Queen's Own) from Taranaki, NZ. Their commander became acting Governor. The Register commented that "In the absence of duly commissioned representatives of Royalty the duties of the Vice-regal office were well discharged by Colonel and Mrs. Hamley." (A township is now known as Hamley Bridge.)

The "new policy of self reliance" responsible for the withdrawal of the Imperials on 10 September, 1870, prompted the Register to comment that in 6½ months "they have well stood the criticism to which civilians are in the habit of subjecting their gallant defenders."

The Second Russian Scare.

From 1870 to 1876 the colony had no defences—but many letters and ample reports had been written.

The Russo-Turkish war stirred a little action. On 3 March, 1870, volunteers were invited.

The force comprised Adelaide Mounted Rifles, Adelaide Artillery, Port Adelaide Artillery, and Adelaide Rifles (including Kapunda and Clare).

In 1878 the SA Permanent Force Act authorised 130 men (artillery and infantry) and the SA Military Reserve Force for those who had done military training. A Rifle Companies Act caused enrolment of two companies, with the Government supplying rifles, ammunition and the same pay as volunteers. By 1880 rifle companies were being organized in many places.

In 1882 Permanent Artillery was embodied under the 1878 Act, and in 1883 Largs Bay Fort was being erected. A gunboat, HMCS Protector, was to patrol St. Vincent Gulf. In 1885 small vessels were fitted for duty in Investigator Straits and Backstairs Passage to

advise ground forces by rocket. Russian ship moves were reported between Batavia and Cape of Good Hope.

The Forts.

These were something really tangible, and were the local pride. They were at Largs Bay and at Glanville, about two miles further south. Fort Largs guns were two 84 prs, two 9 inch 12 ton Woolwich with 300 rounds, two 80 pr flank guns. Glanville had two 10 inch 20 ton and two 64 pr flank guns.

Largs, a barbette battery, cost £9,098. It was manned by Permanent SA Artillery, strength 1 sergeant-major, one corporal, one bombardier and 20 men. Gunners got 2/9 a day. In one practice the Largs 9 inch ML guns were badly cracked and were later replaced by two 6 inch Mk 5 BL guns on disappearing carriages.

Glenelg never got its fort. Two guns got as far as being safely housed by the Permanent Force after being barge landed. Negotiations broke down when the owner of the land where they were to be erected wanted £2,000. A Glenelg deputation waited on the Hon T. Playford, Treasurer, and went away satisfied when assured a Parliamentary Bill would take the land at a fair rate. However, there was a change of government.

Further Reorganization.

The Defences Act of 1895 organized the forces from 1896 to 1900 as (a) Permanent Artillery (Adelaide, Glanville, Largs), (b) Active Military Force (Mounted Rifles four companies, field artillery two batteries, garrison artillery two batteries, MG corps, infantry twelve companies, signalling corps, medical staff corps), and (c) Reserve

Military Force recruited from the country.

A feature from 1889 was a special Drill Company of 100 men training usually at Montefiore Hill at the city entrance. This laid on all ceremonial and membership was vied for keenly by members of all units.

One Gilbertian story must be told of B Company, Adelaide Rifles. When in camp at Black Forest the Commandant desired to continue camp for one more day. He could not do so without permission of the Minister for Defence, then in camp as a corporal. Corporal Kingston was sent for and gravely swapped seats with the Commandant, who explained the case. The Minister considered the facts, assented and gave the seat back to the Commandant.

Efforts in the South African War.

Between 1899 and 1902 SA raised and dispatched to South Africa six contingents and a quota of Commonwealth Horse, a total of 1,430.

Conditions of Service.

All were volunteers drawn from citizens, with preference to men of some previous military service. Service was for approximately 12 months. Later contingents included men who had served in the early part of the war.

The First and Second Contingents were raised and paid by the SA Government and granted 30 days' pay on their return to Adelaide, plus a war gratuity ranging from £200. Daily pay varied from private 5/- to major 25/-, plus 3/6 field allowance.

The Third Contingent (Bushmen's) was entirely equipped and partly paid from private contributions. Later contingents were paid by the Imperial Government.

Contingents' Actions.

The First Contingent enrolled first as infantry, but was mounted in South Africa in January, 1900. It comprised 5 officers and 121 other ranks, who embarked on 2 November, 1899, in the *Medic*. This contingent fought with the Berkshires and marched on Bloemfontein, where they combined with the Second Contingent to form the SA Mounted Rifles. They formed the rearguard for General Clements' force in the retirement on Arundel. Later they moved to the Orange Free State.

Honours included a DSO; Queen's Medal with five clasps, 2; with four clasps, 1; three clasps, 1.

The Second Contingent comprised 6 officers, 112 other ranks, 120 horses and a machine gun. It left Adelaide 26 January, 1900. Nine days after getting to South Africa it assisted in the relief of Priesta. At Bloemfontein it joined the Fourth Corps, including Victorian and Tasmanian Mounted Rifles, under General Hutton, who later allegedly chose the motif of the wrongly described Rising Sun badge. They were first into the fort at Johannesburg and helped take Pretoria. Honours of the Contingent included 1 CB; 1 DSO; 1 Queen's Medal with six clasps; 1 with five; and 2 King's Medals with two clasps.

The colourfully titled Bushmen's Contingent comprised 6 officers and 93 other ranks. Its costs were defrayed by the citizens. The Bushmen were required to be good riders and shots, and used to hard bush life. They operated in Western Transvaal in a composite regiment with NSW First Mounted Rifles, Fifth New Zealand and Third Tasmanian from June, 1900, to April, 1901. Its honours included a DSO

and two Queen's Medals with five clasps.

The Fourth Contingent, styled Imperial Bushmen, was entirely in the pay of the Imperial Government. Pay varied from buglers 2/3 plus 2/3 deferred pay to captains 20/- plus 3/6 deferred pay. Separation allowance varied from privates 1/1 to warrant officers 2/3 a day. The Contingent comprised 12 officers and 222 other ranks. It was involved in the pursuit of De Wet to the Reitzburg Hills and later served in Cape Colony. Honours included 1 CB and 2 DSOs.

Fifth and Sixth Contingents formed a regiment under Major Shea (India Staff Corps) after a 300 miles trek from Durban into Orange Colony. Their exploits included an attack by Major Shea with 200 men on Smut's Commando at Grootval-lier Farm by night, when wire fencing was encountered, but the South Australians pressed the attack with the bayonet. Again the South Australians scoured the Orange River Colony, and relieved a force after riding 75 miles in 22 hours — no mean feat. Numerous honours included 2 DSOs and King's and Queen's Medals with many clasps.

South Australia contributed to the composite Commonwealth Horse, the Second, Fourth and Eighth Battalions. Only the first saw action.

Phase 2: Federation.

With Federation came the need to create a homogeneous army. This was to be attempted by Major-General Sir Edward Hutton and a Military Board, aided by the Inspector-General Major-General H. Finn.

Major-General Hutton spoke far-sightedly of "The shift of power to the East and the probable struggle

for commercial supremacy in the Pacific" — before the Russo-Japanese war was fought.

Things started to tighten up. Officers were forbidden under King's Regulations to write to the Minister except through the GOC. In 1903 officers were starting to resign because they were required to undertake too much correspondence and they said they couldn't "afford a clerk." This was before the introduction of the Gestetner, MBI's, AMRO's and their numerous amendments.

Reorganisation gave SA 16 LH Regiment (SA Mounted Rifles), 17 LH, a SA Bty AFA, 1 SA Coy AGA, 10 Australian Infantry Regiment (Adelaide Rifles) and the SA Infantry Regiment. Twelve "lady nurses" between 21 and 40 years, with retiring age of 50, were contributed by SA to the AAMC. Combined exercises in April, 1904, included live shooting for troops of the Mounted Rifles. Rifle clubs first formed in 1888 continued under the Secretary for Defence as a reserve to the militia. Cadets were active in 1905.

Pleasant and active though this voluntary army was, the inspection of Lord Kitchener in 1909 indicated its inadequacy for bigger purposes.

Universal Training, 1911.

SA had become 4 Military District in 1907, and included Northern Territory — this was ceded to the Commonwealth in 1911. In 1909 the obligation of all to serve was placed on citizens by the Defence Act.

The universal training scheme in 1911 involved raising 74 Battalion (Boothby) as part of the S.A. Infantry Regiment stretching from Unley (an Adelaide southern suburb) to the Victorian border at

Mt. Gambier. Its HQ was first established in the delicensed Unley Inn, then in Thomas Street, where 3/9 SAMR now is. At the first camp at Gawler 74 Battalion won the prizes for sanitation and marching.

Other units were 78 Infantry Regiment and 76 Regiment (HQ at Southwark, an inner industrial suburb, with subunits at Prospect, Walkerville and North Adelaide). Field artillery was 13 Battery — 1 Battery became 34 Battery, 1 SA Coy AGA became 10 Battery Garrison Artillery Fort Largs. The LH regiments changed—16 into 22 LH, 17 to 24 (country) and 23 in Adelaide.

These forces followed the common routine of universal training and provided the basis for SA components of the AIF.

The Great War 1914-1918.

The history of the SA forces in the Great War is very fully covered in the Official History.

Some local events are worth mentioning. 74 Battalion was mobilised for defence of Port Adelaide, its country detachments being billeted in the Unley Town Hall. By early 1915 it had contributed 300 members to form 27 Infantry Battalion AIF. 27 Battalion on 31 May, 1915, was in Egypt and was the first Australian battalion in action in France. It received 300 decorations.

78 Regiment in 1914 had contributed all its officers to 10 Infantry Battalion AIF, which was first away as part of 3 Infantry Brigade. On 25 April, 1915, it covered the landing at Anzac of the rest of the brigade. 10 Battalion won 260 decorations, including 3 VCs, and suffered a total of 3,509 casualties. It fought from Suvla to the Hindenburg Line.

48 and 40 Battalions AIF were also formed and fought through many campaigns.

76 Infantry Regiment received mobilization orders on 6 August, 1914, at 1400 hours, and by 1900 hours had all troops on parade. Many of its members helped at Morphettville to raise 43 Battalion AIF.

3 LH Regiment AIF and 9 LH Regiment AIF were formed largely from the products of the universal training scheme and acquitted themselves well in the Middle East campaigns. 34 Battery AFA gave 4 officers and 110 others to the AIF.

Post War Developments.

After the Great War the universal training scheme was resumed. The tradition of wiping out tradition was adhered to with another re-organisation that removed most traces of pre and post federation efforts to produce a territorial army with some continuity of associations.

Units now raised were 10/50 Infantry Battalion (Adelaide); 27 Battalion (SA Regiment) of 1 and 2 Battalions amalgamated on 27 December, 1920, with 90 per cent. AIF officers; 43 Battalion with HQ and two rifle companies at Southwark and one company at Alberton and Kilkenny (Adelaide inner suburbs); 48 Battalion with HQ at Southwark and centres at Moonta, Kadina, Wallaroo and Balaklava. In 1922 HQ 48 Battalion moved to Alberton and in 1925 to the Torrens drill hall at the city site known as the "Parade Ground." Field artillery raised were 48 Battery as part of 22 Field Brigade (Melbourne); 51 Battery at Unley as part of 12 Brigade, and 49 Battery. Cavalry units were 3 LH (SA Mounted Rifles); 9 LH (Flinders Light Horse); 18 LH (Adelaide Lancers); 23 LH (Barossa Light Horse).

The slow build-up of units in a post-war era of "it can't happen here" and developing pacifism started to take shape. History was searched now to try to establish a tradition. 10 Battalion traced its history as the Adelaide Rifles, 27 Battalion found a family tree springing from the SA Infantry Regiment. Both these Regiments had been presented with King's Colours shortly after their participation in the South African War. 10 Battalion claimed inheritance of old privileges such as marching through the city with bayonets fixed, exchanging compliments on passing the Adelaide Town Hall when the city's flag was dipped. Battle honours were passed on—10 Battalion had the safe keeping of 10 and 50 Battalions AIF. 48 Battalion AIF officers joined 48 Battalion to help it on; it resumed the territorial title of Torrens Regiment and claimed descent from 76 Regiment of pre-war days.

Affiliations were sought with units in other parts of the British Empire as a means of improving liaison and widening interest. 10 Battalion affiliated with Canada's Regiment de St. Hyacinthe, NZ Southland Regiment and Great Britain's Manchester Regiment. 48 Battalion affiliated with 48 (Northamptonshire) Regiment.

Such was the situation in 1929. Strident pacifists claimed "the fighting instinct is at the root of war" and got support of an obscure London doctor saying "it is useless to waste millions on battleships as a teaspoonful of toxic powder would kill a million men." Many would wish the doctor had been more prominent with his teaspoon as they sweated out the years on bullybeef and sugarless tea. Great Britain

and USA were trying to decide at the Disarmament Conference whether battleships should be 20,000 or 27,000 tons maximum.

Phase 3.

On 25 November, 1929, the Defence Minister announced that "conscription is not essential for raising and maintaining an effective defence force." The Defence Act provisions for universal training were suspended and annual camp cut out, so saving £50,000, and in nucleus the Army was to keep its existing organisation by voluntary enlistment. Its strength was then 2,758 officers, 49,000 others.

The Militia was no task for the faint-hearted. By steady effort in the face of indifference the militia built up a reservoir of officers and NCOs who were to form the backbone of the Second AIF. The steady routine went on of officer and NCO classes and examinations, of bivouacs, of night and week-end parades, all unpaid and strictly voluntary, of substituting training stores and providing them from pockets of unit officers, of rifle club practices on fantastically limited allowances, of coaching of keener young soldiers at private homes. There was little thanks or recognition. Yet countries in Europe continued to fall into the Axis maw, and the fears at Federation of the GOC of the rise of Japan were plainly about to be realized.

After the Depression some attempt was made to improve "drill halls." The parade ground beside the Torrens Lake was brightened by the opening on 22 September, 1936, of a double-storeyed brick building designed to house a battalion and 13 Field Brigade. Unfortunately, the sets of double doors

of the gun park open on to the Adelaide Bowling Club's green. This is due allegedly to an old agreement that the Army could hold the ground while the ramshackle drill hall stood. Resourcefully, the new depot was built under the old roof. The gun park was entered by a new doorway cut in the front of the new building, which was apparently designed to be 100 yards further forward.

The volunteer CMF provided the backbone of the Second AIF units raised in SA. In addition the VDC grew to 5,000 by 19 October, 1940. Rifle clubs strength was 6,000 by November, 1940, when they went into recess. Universal training was resumed 30 November, 1939.

From a population of 630,000 SA produced in the Second World War 40,000 AIF, 4,000 Women's Services (Army), 95,000 universal trainees, excluding AIF, apart from Navy and Air Force volunteer enlistments. One in four of the population was actively associated with the war, quite apart from the great expansion of heavy industry directly concerned with the war.

Past and Future.

A retiring SA Commandant soon after Federation made the point that relations with the Government had been most cordial—"they said yes to almost anything as long as it was not for more money." He regretted that employers had hindered recruiting by stopping the wages of employees who joined the militia or volunteers while they were absent at parade.

The Adelaide Lancers of 1867 appeared voluntarily with no pay in self-bought scarlet hunting jacket, black cap, long black overalls with yellow stripes. In 1887 the SA

Volunteer Mounted Rifles of 17 groups formed themselves in detachments of 1 officer and 20 ranks, elected their own officers and NCOs, paid £5 joining fee while the SA Government paid £1 annually for each efficient member and gave one staff instructor who spent 20 days monthly in travel between centres. In 1888 Government pay daily was 5/- to a lancer, 6/- for his charger.

In the Great War one battalion got 3 VCs, in the Second World War, 1939/45, another battalion got 4 VCs.

In the present CMF SA has a brigade group plus divisional units

to raise—the highest in proportion to population of any State. SA's 27 Battalion is the only CMF unit to win twice the RSL Trophy for Australia-wide competition — the Adelaide University Regiment won it in 1949. Expansion of the infantry brigade and school cadets throughout the State are in progress.

Interest and pride in the local unit have always been evident where a keen nucleus whipped it up and patiently built it into the corporate life of the community. Once this is accomplished the quiet stability of the citizens is expressed in loyal and spontaneous support.

Strategic air landings and present-day air power used in mass can together constitute a decisive factor capable of influencing the course of a war.

—Major-General of Aviation, Iu Kostin, Soviet Military Forces.

ARMY BANDS

and

BANDMASTERS

Captain R. A. Newman, ARCM,
Director of Music, AMF.

SINCE the beginning of recorded history, music of some kind has played a major part in the lives and affairs of martial men.

In all nations, from the earliest times, music has been the accompaniment to feats of arms, serving the twofold purpose of inspiring the troops to fight, and as a method of conveying orders and commands.

It was used in time of battle as a means of exciting that passion which the most eloquent oration would fail to inspire.

The term "music" is, however, applied with reserve, implying only that sounds were produced by the use of implements which are the natural precursors of the instruments used today.

Various opinions exist as to the exact date on which Bands were introduced into the British Army. General Sir F. W. Hamilton, in his "Origin and History of the Grenadier Guards," states that in 1685 "Musicians were introduced into the British Army and a Warrant signed

by Charles II, dated January 3rd, 1684, authorising the entertainment of twelve Hautbois (Oboes) in his Companies of the King's Regiment of Foot Guards in London, and that a fictitious name should be borne on the strength of the other Companies of the Regiment quartered in the country, with a view to granting these musicians higher pay, was one of the last acts performed by the King concerning the Army."

Of the development of this Band, W. T. Parke, in his "Musical Memoirs," says, "The Bands of the three Regiments of Guards consisted in 1783 of only eight performers — two oboes, two clarinets, two horns, and two bassoons. They were excellent performers on their instruments, and were paid by the month, being well paid. They were not attested, and only played from the parade at the Horse Guards to St. James' Palace, while the King's guard mounted, and back again from there to the Horse Guards."

Lord Cathcart, an officer of the

Coldstreams, desired the Band to play at an aquatic excursion to Greenwich. This the musicians deemed to be incompatible with their respectable musical engagements, and they declined to do it.

The officers, who had to subscribe and were responsible for the pay of the Band, wished to have a Band which they could command on all occasions, and a letter to that effect was written to the Duke of York, Colonel-in-Chief of the Regiment.

The Duke, who at that time was in Hanover, consented to the wish of his officers, and with the approval of the King a Band of a much larger number than hitherto was employed in Germany, consisting entirely of Germans, and was sent over to England. It consisted of twenty-four members, including clarinets, horns, oboes, bassoons, trumpets, trombones, and serpents, while "three black men were employed to beat tambourines and carry crescents."

This innovation met with universal approval, and Regiments of the Line were allowed by the War Office to raise similar Bands at their own expense.

It must be understood that the entire welfare of the Bands depended on the enthusiasm and pockets of the officers of the regiments, and it has been stated that this system, where Bands were maintained by the officers, was more beneficial to military music than that in vogue now.

This may be, but it is certain that it took official recognition of Bands to create the highly efficient organizations that are seen and heard today in the British Army, because, despite the keen rivalry between Regiments, there was the same confusion of pitch and organization, developing into exhibitions of the in-

efficacy of goodwill without proper direction.

The necessary stimulus for this came about through an incident which would make a modern Bandmaster shudder.

At Scutari, in 1854, the British troops comprising the Army of the East, destined for the Crimea, held a grand review on the birthday of Queen Victoria. There were some sixteen thousand men on parade, and, while their appearance and marching was perfect, what a tragedy occurred when the massed Bands played the National Anthem. Not only was it scored in different ways for the various Bands, but it was pitched in different keys and with an assortment of different harmonizations in addition! No wonder that a staff officer wrote afterwards, that "It rather spoiled the effect of the review."

The British officers realised for the first time what an amount of money they had been paying for very indifferent music.

This debacle was a blessing in disguise. It exposed the necessity for the standardization of Bands, and stirred into action men who had the welfare of Army Bands at heart, and whose qualifications gave them the right to demand reforms.

Greatly depressed by this state of affairs, two Bandmasters, James Smyth and Henry Schallehn, approached the Secretary of State for War on the subject, seeking reforms that would prevent a repetition of this disastrous exhibition.

They met with doubtful success; officialdom still regarded Army Bands as a luxury.

Schallehn, however, had the good fortune to have the ear of the new Commander-in-Chief, the Duke of

Cambridge, under whom he had served in the 17th Lancers.

H.R.H. needed very little prompting concerning the state of Army Bands, as he had campaigned in the Crimea and was present at the Scutari fiasco.

He at once took the matter in hand personally, and, aided by the practical advice of Smyth and Schallehn on training and education, established the Royal Military School of Music at Kneller Hall on 3 March, 1857, to train Bandmasters for appointment to Regiments of the British Army.

It was also meant to stimulate the acquisition of musical knowledge amongst his own countrymen, by training young men and boys as competent instrumentalists for the various Regimental Bands, and by holding out to them, if they improved and developed sufficient talent, the prospect of a worthwhile career.

The immediate effect of these improvements was to raise the status of Army Bands considerably. Composers for the first time got a conception of the capabilities of this hitherto despised branch of musical art. A marked improvement was shown in the musical outlook of the general public towards Army Bands; outdoor music was lifted into a superior position, and the Army Band became an established and recognized art factor.

It took mistakes to convince the authorities that good organization and administration of Army Bands was not enough, and that correct musical training, from the very fundamentals, was of paramount importance to ensure the continual flow of qualified Bandsmen so that vacancies created by normal contingencies could immediately be filled

by capable players, thus ensuring that the Band's efficiency was at no time impaired.

It is well-nigh impossible to make any accurate estimate on the length of time required to train the average Bandsman as each individual case is affected by a number of physical, mental, and occupational circumstances.

Members of a Band begin their actual playing in the Band at a low standard; for instance, each Band has four cornet parts, solo cornet, repiano cornet, 2nd cornet and 3rd cornet.

The solo cornet player is of necessity the best cornetist in the Band, the others usually following in order of ability; the parts for these are arranged so that the 3rd cornetist is not called on for so high a degree of technical efficiency as the others. The same applies to other instrumental groups throughout the Band.

Thus it is never possible to say that a Bandsman is fully trained, because even when he reaches the position of solo cornet, or leader of his particular instrumental group, he still has far to go. It should be remembered that there are ranks within each Band that call for a higher degree of all-round efficiency than just that of a solo musician.

Bandsmen should at all times be able to see clearly a future open before them, whereby they can progress both in musical knowledge and in rank. Like the recruit who is told that he has a Marshal's baton in his knapsack, the young Bandsman should be able to see a path of advancement open to him with the ultimate position of Bandmaster.

For this reason it is essential that all Bandmasters are capable of training their personnel both theoretically and practically. The

commitments of the average Band, however, are such that the Bandmaster, however capable he may be, cannot allot sufficient time for this to any great extent. It is necessary, therefore, that an establishment or course be made available for the advanced training of those suitable, to fit them for the appointment as Bandmasters as vacancies occur.

The term "Bandmaster" is taken to signify master of the Band; mastery implies power, which in this case means a special knowledge and a certain fitness, both of which can be assisted in development by training, but can only exist in perfection as an inherent trait of character and temperament. Lacking this high essential, it matters not how profound a Bandmaster's learning may be, how exacting his methods; the ultimate results, as shown by the performance of his Band, will be unsatisfactory.

If he cannot arouse in each member of his Band a contagious enthusiasm commensurate with his own, the playing of the Band, even if technically perfect, will inspire the feeling of being learnedly dull.

It may be said that Bandmasters, like poets, are born, not made, though this opinion should not be taken to imply that training is not necessary.

On the contrary, training is always required to cultivate the latent talent, as a guide to command, and to foster the attainment of the fullest manifestation of both factors. A soloist or 1st class instrumentalist is usually a specialist. He more or less confines his energies to the arduous task of mastering the technical difficulties of some instrument in particular, and frequently, too often, neglects to inform himself of other matters essential to the acquirement of a sound musical education.

An instrumentalist of this type thus becomes fitted as one of the parts of a machine, truly essential in his place, but not qualified, by the limitations of his knowledge, to exercise the functions of a controlling power.

A sailor before the mast, or a soldier in the ranks, may be most efficient as a sailor or soldier, but no one, on general principles, would admit either as being fitted to take command of a ship or regiment.

In some countries, Bandmasters can only attain to such rank as the result of successfully passing a very severe musical examination.

As stated earlier, the British Army established The Royal Military School of Music at Kneller Hall nearly 100 years ago for the purpose of training Bandmasters, Band NCOs and Bandsmen for the Army.

British Army Bandmasters must graduate from this school, at which the course is three years and the curriculum severe. Admission is confined to musicians serving in the Army, who are first nominated by their Bandmasters for musicianship, after which they must pass an entrance examination set by the Director of Music at Kneller Hall. Further, each applicant must be recommended by his Commanding Officer, who is concerned with his character and qualities of leadership. The result of these methods of careful selection is apparent in the playing of Bands under the direction of Kneller Hall trained Bandmasters.

The essential qualifications of a Bandmaster are varied and broad in scope and they should include:—

- (a) Skill on some wind instrument in particular.
- (b) Practical knowledge of all other wind instruments; that is, to be able to play them

sufficiently well for teaching purposes.

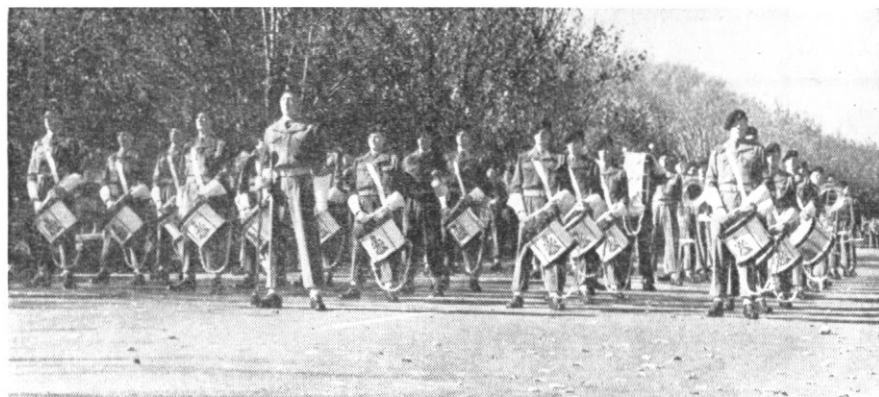
- (c) Knowledge of the Theory and Practice of music, including Harmony, Instrumentation and Orchestration, Forms, and some acquaintance with acoustics in relation to wind instruments as well as musical history in general.
- (d) Capacity to read musical scores and interpret them.
- (e) Capacity to direct the teaching, tuning, and toning of a Band.
- (f) Capacity for direction—otherwise conducting.
- (g) Capacity to command.

Just as water under ordinary circumstances will not rise higher than its level, so may we never expect to find a Band better than its

Bandmaster. If he be a man of high attainments, ideals and energy, he will lift the quality of the Band to his own level; but should he be the reverse, the Band will sink to his status.

Operation of the law of cause and effect being inevitable, it is futile to expect good Bands as the result of the employment of incompetent or untrained Bandmasters.

Hence it is obvious and necessary that a Bandmaster should be a man of good musical and general education. He should be instinctively refined and of a magnetic and commanding personality. Possessed of these qualifications, he will command the confidence and respect of his Band, of the Army which he serves, of the musical profession as a whole, and of the general public.



The Band of the Army Apprentices' School.

Mobility and Firepower

Major P. Martel, B.A., B.A.Sc,
Directorate of Armament Development,
Army Headquarters, Ottawa.

The ultimate object of mobility is to obtain superior power in battle.

—Maurice.

MOBILITY is so important to the successful conduct of operations that prior to the Second World War it was listed as a Principle of War. In the new list of Principles, mobility has not been included; it has been replaced by flexibility, but it is nevertheless an integral part of concentration of force. Obviously, no concentration can be effected unless the commander is able to move his troops. As a matter of fact, it is almost impossible to speak of concentration without thinking of mobility, and the ultimate end of mobility is concentration.

Speed and mobility are not necessarily synonymous. Marlborough, for instance, is cited as an expert in the art of mobility because he moved his troops from the Netherlands down to Bavaria with efficiency and success. Many of Napoleon's campaigns are a series of brilliant manoeuvres. In more recent history the American Civil War is often quoted. By the standards

of modern methods of transportation the movement of troops under Marlborough, Napoleon or Jackson were slow. So why can we say that these commanders achieved mobility?

Mobility is a relative concept which may be defined as the ratio between the ability of a commander to move his troops and the ability possessed by the commander of the opposing forces. To illustrate this idea, it is possible to imagine a body of troops being moved in exact synchronism with a similar body of enemy troops; whatever the speed of movement may be, in neither case will the ultimate end of mobility, concentration of superior power, be achieved. On the other hand, it is conceivable that a commander may have all his troops mounted on trucks against an enemy on foot and that notwithstanding a series of movement carried out at high speed, he could still be defeated by a heavier concentration of the enemy. Mobility is therefore the ability to move troops not only rapidly, but more rapidly than the opponent, towards the objective.

—From *Canadian Army Journal*.

What, then, is at the root of mobility? In my opinion there are four factors which are essential: intelligence, staff work, generalship and freedom of movement.

Intelligence and staff work need hardly be explained. It is obvious that if the ultimate end of mobility is "to obtain superior power in battle," good intelligence of the enemy's dispositions and intentions is needed. Similarly, without proper organization and orders a movement of thousands of men would end in complete confusion.

Generalship in relation to mobility is harder to define. It is one of those imponderables based on ability to make decisions from scanty information, act quickly when a more timorous mind would wait, select the proper object and care for the security of the troops and at the same time gamble on the results. With respect to mobility, the characteristic of generalship which is of paramount importance is the selection of the objective so that all forces can be brought into action before the enemy has time to counteract.

Freedom of transportation is the aspect of mobility which is seldom adequately emphasized. It is not sufficient to carry the men and their weapons. All the impedimenta of war also have to be supplied. For instance, an Infantry Division has some 3,200 vehicles which are road bound. They have a cross-country performance, but at a considerably reduced speed. All of these vehicles are needed to supply the division with ammunition, petrol, food, clothing, etc., for a given period of time. Only by keeping the supplies moving can penetration be exploited.

The advent of the aircraft has made movement by road a nightmare for the Army which does not have air superiority. The Allies in 1945 waged a war in which they had complete air superiority over the battlefield and its approaches. That this will not be true in another war is almost a truism. Tactical and strategical bombardment of supply lines and march columns can harass an enemy to the point of breakdown as was shown in Africa during Rommel's retreat. It was proven again during the Allied invasion of Normandy.

Intelligence is a field of endeavour which is still wide open to scientific development. New methods of data handling and sorting, new methods of listening to the enemy's activities are needed if the speed available in other arms and services is to be of any use. However, freedom of the road is the aspect of mobility which has been the most altered by the advent of fire power in all its forms: bombing, artillery, small arms, etc.

For centuries mobility was simply the movement of men on foot, quite often in plain view of the enemy. The advent of fire power, while it did not detract from the soundness of the principle, forced the commanders to devise new means and methods to retain their ease of manoeuvre.

"Movement has been called the 'soul of war,' which is true, for movement is to organization what range is to weapon power—it is the governing element. Thus when the energy from which the military movements were derived was generated by muscle power, because the muscular energy of the horse was greater than that of man, tactical

organization was built around that animal. This remained true so long as the range and volume of fire were limited, and it was not until the introduction of the rifled musket that the holding power of infantry became so great that cavalry movement was immobilized. When this occurred, as it did during the nineteenth century, tactical organization became decadent. It was based, not on power to move, but on power to hit; therefore, volume of fire became the be-all and end-all of the military organizer."*

Not so many years ago the strength of Armies was measured in numbers of men only and the importance of a country in the international field was almost proportional to the number of sabres it could raise. The impact of gunpowder and of the industrial revolution was to change the emphasis from men to machines. Gustavus Adolphus in the early 17th century opened wide the door by deploying artillery in the field, but it was not until two centuries later that the gun became a major factor in deciding the issue of battles, despite the evidence offered by the Napoleonic wars.

In the 20th century, masses of artillery were often used to regain the advantages lost by the offensive to fire power. Following Napoleon's lead, holes were blasted through the front in an attempt to pave the way for the infantry. This method was used with success in the last two wars. However, it seldom enables the breakthrough which is so essential to mobile warfare. An inherent handicap of extensive use of artillery is that it ploughs the ground so

much that rapid advance is not always possible and the enemy gains sufficient time to recover unless the first waves ride with a barrage regardless of casualties. This handicap is even more pronounced in the case of tactical air bombardment prior to an attack.

The latest war machine used in ground attacks in an effort to defeat fire power and gain mobility is the tank, which Nazi Germany coupled with air power for their rapid advances in Poland and Northern France. The first reaction to German success was that the offensive had regained its superiority over the defensive. The Desert and Russian campaigns helped considerably to dispel this notion. It was then proved that deep penetration does not necessarily automatically mean retreat.

Air power has brought a third dimension to war. Originally the aircraft was used to increase the range of cavalry and was compared to the eyes of the commander. Later it became a weapon of war when it was loaded with bombs. As such it is an extension of artillery capable of engaging targets hundreds of miles behind the enemy lines, but far more dependent upon external conditions than artillery. The proper use of aircraft as a weapon is still the source of considerable discussion. As a troop carrier the aircraft and its companion, the helicopter, are still in their infancy.

Along with the development of fire power the discoveries of steam and later of gasoline-powered vehicles have caused striking changes in the mobility of armies. While from the earliest times the movement of troops had been limi-

*Fuller, "Armament and History."

ted to the distance that a man or horse could cover and still be capable of fighting, the use of the railway increased considerably the pace of strategical manoeuvre; paradoxically, however, the range of tactical movement became limited by the newly-gained fire power. Although it became possible to move larger masses of men and their supplies, the end of the railway line was the limit and the sum effect was a decrease in the mobility of operations, with the exception of theatres of war where the ratio of man to space was so small that flanking was still possible.

Armies have treated the motor vehicle as previously they treated the railway; as a means of amassing their supplies more rapidly. Because of the greater ease of transport, they have unfortunately at the same time increased considerably the mass of stocks needed on the front lines. The result: they became as road-bound in 1945 as they were rail-bound in 1918. The striking head of an armoured division may be able to penetrate deeply and bypass obstacles but it cannot push on because its tail is stuck until the obstacle has been removed.

The weapons available today, guns and aeroplanes, are relatively efficient for the purpose of preventing the enemy from concentrating his troops. Artillery from a close support point of view is well suited to harassing zones of concentration prior to attack, while air power can prevent the supplies from reaching the front. Strategic bombardment prior to "D" day, for instance, was successfully diverted to destroy bridges, rail centres and roads leading to the Normandy beaches, and it is generally conceded that a great

deal of the success of the invasion was due to the inability of the Germans to move their troops in sufficient number and in time.

At the lower level, the isolation of the battlefield was one of the missions of the tactical air force used first with great success by the Germans in the early stages of the war and later by the Allies after they had defeated the Luftwaffe. However, in all cases of success by the tactical air force, air superiority and clement weather go together. The Ardennes offensive is a striking example of what havoc weather can play with a tactical air force.

It would appear that the Russian concept is that war will be decided on the ground and that strategic bombing, although it may help win a much prolonged war, will not remedy the lack of supplies over the battle area. They do not appear to consider the destruction of large cities advantageous. Furthermore, problems of reconstruction of which we, in Canada, have no first-hand knowledge, are so large that rehabilitation during the peacetime years becomes a staggering effort. Many centuries ago, this was expressed by Sun Tzu, the great Chinese general, as follows: "In the practical art of war, the best of all is to take the enemy country whole and intact; to shatter and destroy it is not so profitable."

These Russian concepts are somewhat vindicated by Germany, which survived several years of the most intensive bombing and was finally defeated because the lines of communication to the front were broken. They are also a confirmation of Clausewitz' theories. It might be more profitable to concentrate our

efforts in preventing the supplies from reaching the front lines than in attempting the destruction of factories when we know very well that stockpiles sufficient for several years of war will be in the hands of the enemy.

Obviously these concepts are based on experience obtained during the last war and may not take full account of the power of the atomic bomb. However, it is reasonable to assume that it would take several months before the effect of atomic bombing would be felt. During that time battles will have to be fought—battles which, if lost, might mean the end of the war. Furthermore, due to the Iron Curtain, very little is known about profitable targets, thereby reducing the effect of strategic bombing by denying its first and essential need: a target.

A new weapon is now appearing on the scene which might very well revolutionize air and land warfare: the guided weapon. A guided missile is free from weather obstruction, does not need air superiority or the immense investment for airports and the associated infrastructure.

Guided missiles are but one more step taken along the path of weapon development, "for today, as yesterday, perfection is sought through an ever-increasing range of action, striking power, accuracy of aim, volume of fire and portability, or now better defined as 'power-propelled means of mobility.' The sole fundamental difference between present and past development is that today it is scientific, whereas formerly it was haphazard or by rule of thumb."*

The German lead in the field of guided missiles has now been reduced and all nations are pouring millions of dollars into research and development of more accurate missiles. The original weapons, the V-1 and V-2, launched by the Nazis in 1944, each carried a ton of explosive and are now obsolete. They were, nevertheless, responsible for over a million wounds, the killing of close to one hundred thousand people and the destruction of nearly a million homes.

The German use of the V-1 and of the V-2 was a premature effort forced upon them by the almost complete collapse of the Luftwaffe on the Western Front and, as a premature effort, it was relatively ineffective. It must be remembered that any one of several scores of heavy bombing raids against German or Japanese cities dropped a greater weight of explosives than the Germans delivered by the entire V-2 attack against London. In addition, the bombs were dropped with a very useful degree of precision, while the V-weapons could hardly be aimed at anything smaller than a city. In spite of their indecisive role in the Second World War, the German weapons did dramatize the potential military usefulness of high-speed, unmanned jet-propelled missiles, if they can be guided with sufficient accuracy to hit a reasonably small target.

It was only the retaliation-complex of Hitler and his indecision early in the development stages of the weapons which prevented them from attaining their full efficiency. As a matter of fact, if the German had succeeded in perfecting his weapon six months earlier and had selected the Portsmouth-Southampton region as a target, the invasion

*Fuller, "Armament and History."

of Europe would have proved "exceedingly difficult, perhaps impossible."*

The German V-1 and V-2 were especially intended as extensions of artillery. Since then, several years of intensive research have no doubt produced weapons which are considerably more accurate and have greater range; it should not be hard to visualize a tactical missile capable of reaching a target some 150 to 200 miles behind the front or which would prevent any road traffic on a given section of the front. Other profitable targets would be zones of concentration, bridges, railroad yards, etc.

The German V-1 had a 50 per cent. zone of some fourteen to sixteen miles at maximum range. It was basically a pilotless aircraft flying at a low altitude and relatively high speed. Fortunately for the Allies, it was also an ideal anti-aircraft target and during the last week of its employment more than 80 per cent. of the V-1's launched were destroyed by artillery fire. On the other hand, no defence has yet been devised against the V-2. Although the V-2 had no greater accuracy than the V-1, it gave no warning of its approach and even today would be an efficient weapon against large area targets.

For security reasons, very little is known of the performance of the new guided weapons. It can be surmised, however, that every army is striving for a family of weapons capable of tactical and strategical bombing against pinpoint targets. Accuracies of the order of .1 per cent. of range should easily be achieved by missiles large enough to carry an atomic warhead.

These missiles, when available in quantity, will be sufficient to engage any target, whatever its size, and place the commander in a situation where he might control any enemy movement on his front. From the point of view of isolating the battlefield, the surface-to-surface missile will be capable of bombarding the enemy lines of supplies as well in daylight as at night, as well in rain as during sunshine. For the first time in history, a weapon will be available which will enable a commander to completely block a given road. It may be the answer to human-sea tactics.

With the advent of the guided weapon, two aspects of mobility will need a complete revision: intelligence and transportation. Intelligence with the greatest degree of precision will be needed for the direction of the missile towards profitable targets. In the same way that strategical bombardment becomes useless unless the targets are well defined, the short and long range guided missile will be superfluous until some means of detecting troop concentration, well-used roads, supply areas, etc., have been found.

An obvious limitation in present-day tactical air warfare is the lack of knowledge of the enemy's disposition. For instance, we see in Korea a war where the United Nations have complete air superiority, but nevertheless are incapable of influencing to a controlling degree the flow of supplies and personnel to the front lines. Furthermore, the exact position of the enemy units for tactical operations has largely to be surmised from piecemeal reports obtained by patrols, guerillas and air photos.

*Eisenhower, "Crusade in Europe."

"In Napoleon's time, fighting dispositions were taken at a very short distance in presence of an enemy one could easily see, the power and situation of whom could easily be measured. Later, in proportion as the range and power of arms increased, distances increased too; troops had to look for shelter and to adopt a more and more dispersed order. Still, the smoke produced by powder enables the general to reconnoitre, at least partly, the first dispositions of the enemy. The latter disclosed by his fire the positions he was occupying. Smokeless powder has changed the picture and made the unknown both complete and lasting. Going into action today reminds one of a struggle between two blind men, between two adversaries who perpetually seek each other, but cannot see. Shall our new method, then, consist in rushing straight on, or to the right, or to the left, at random? Shall we allow the enemy to throw his arm round our body, to grasp us completely, without our retaining the possibility of first grasping him ourselves, and of striking hard? Obviously not. In order to conquer that unknown which follows us until the very point of going into action, there is only one means, which consists in looking out until the last moment, even on the battlefield, for INFORMATION. . . ."

An immense field of research is opened where men of great imagination rather than great technical knowledge are needed. Devices which can keep constant watch over hundreds of square miles day and night are needed before full benefit of newly-found accuracies can be

realized. We already know the possibilities of radar; what is needed now is detection at very long range.

Modern techniques permit the transmission of any kind of data almost instantaneously around the world. It is possible for instance to transmit pictures of a baseball game held in New York to a TV screen in Los Angeles. Although it is obviously hard to set up a TV camera behind the enemy line, it might be possible to fire "listening shells" which could discriminate between the noises of trucks, guns, etc., or it might be feasible to have a high-speed missile armed with an infra-red camera patrolling the enemy lines. These suggestions may seem fantastic, but in the light of modern science they are not more of a dream today than VT fuses were ten years ago.

The most immediate result of the range and accuracy available through this new type of fire power will be the spreading of the concentration, supply and headquarters areas over distances unheard of before. Future land warfare will have to be tailored to the power of a guided weapon armed with an atomic warhead and will be characterized by great depths of deployment. The combat zone can be expected to be of the order of 100 to 150 miles. Camouflage will become easier on account of the lower density of troops per unit area and therefore intelligence will become more arduous.

The problems raised are not insurmountable, but certainly need a new angle of attack. The first conclusion which can be reached is that a modern army should be completely independent of roads, at

*Foch, "Precepts and Judgments."

least for fifty to seventy miles behind the front lines, and the second, which is also a deduction from the first, is that, to alleviate the difficulties, the minimum possible number of men, of equipment and of supplies should be allowed to enter not only the front lines, but also the full depth of the combat zone.

Modern armies will need to be independent of roads because the roads and bridges are a primary target for any air support, piloted or not. There are three ways to achieve this independence. The first, which is also the most ancient and most reliable, is the foot. The major advantage of marching is ease of camouflage and flexibility. The Chinese in Korea have achieved great success against powerful air strikes by depending upon man transport supplemented by the horse or other pack-saddle animals. The major disadvantage, which is also the reason why this method cannot be used by Western powers, is the immense amount of manpower required.

Secondly, the motor vehicle can be put on tracks and driven across country. While there will obviously be a tendency to keep on roads, this method permits a great deal of independence from delays due to road failure. It is necessarily more subject to location from the air and, therefore, more vulnerable if the enemy has air superiority. It is considerably limited in its cross-country performance by ditches, small streams, rivers, etc. Barring the maintenance aspect, it is far less costly in manpower.

Thirdly, there is a method of transportation which has not been fully developed, but which should be capable of great success — the

helicopter. The helicopter is not only independent of the road situation, but also does not leave any line or traces on the ground to direct the enemy. If the helicopter cannot be used in daytime more than a truck can on account of enemy air superiority, it comes into its own element at night. It is completely independent of terrain features and its use should decrease the manpower required to build bridges, keep the roads in repair, etc. The tactical implications of the general use of this vehicle will be considerable. For instance natural features of terrain will lose their importance and more emphasis than ever will be needed for all around defence. The helicopter will also have a negative influence on guided weapons by depriving them of one of their targets—bridges and crossroads.

The second conclusion reached was that the transportation or freedom of the road aspect of mobility should be minimized by reducing to a bare minimum the number of men and equipment needed at the front lines. Equipment should be designed with simplicity and reliability in sight even at the expense of accuracy, thus reducing the amount of maintenance needed and consequently the quantity of spare parts and repairmen.

As it is more than likely that the enemy tactics will be to attack by mass-waves of men, it should be noted that area weapons are needed more than accurate guns. Accuracy, when obtainable, is not to be neglected, but should not be aimed at for accuracy's sake. Weapons cheaper to make than to repair are the type needed so that when they fail they can be thrown away and

replaced by new ones, thus obviating the need of maintenance in the combat zone. A reduction of one man in the front line means a decrease of three in the communication lines. Accuracy should be reserved for long-range weapons which can be sited well back, where resources for fine adjustments are more considerable.

In conclusion, a summary of the aspects of mobility and the effect upon it of fire power might be profitable:—

- (a) Absolute speed, although available today, is not the end-all of mobility.
- (b) Due to tactical air forces and the coming guided weapons, roads, bridges, either permanent or temporary, will become increasingly difficult to use both night and day.
- (c) New means of intelligence and transport are needed.
- (d) The guided missile will force spreading the zones of concentration, supplies, etc., over large areas, thus altering considerably the usual demands on transport.
- (e) The number of maintenance men needed in the combat zone should be reduced by emphasizing reliability and simplicity in the military characteristics of new weapons.
-