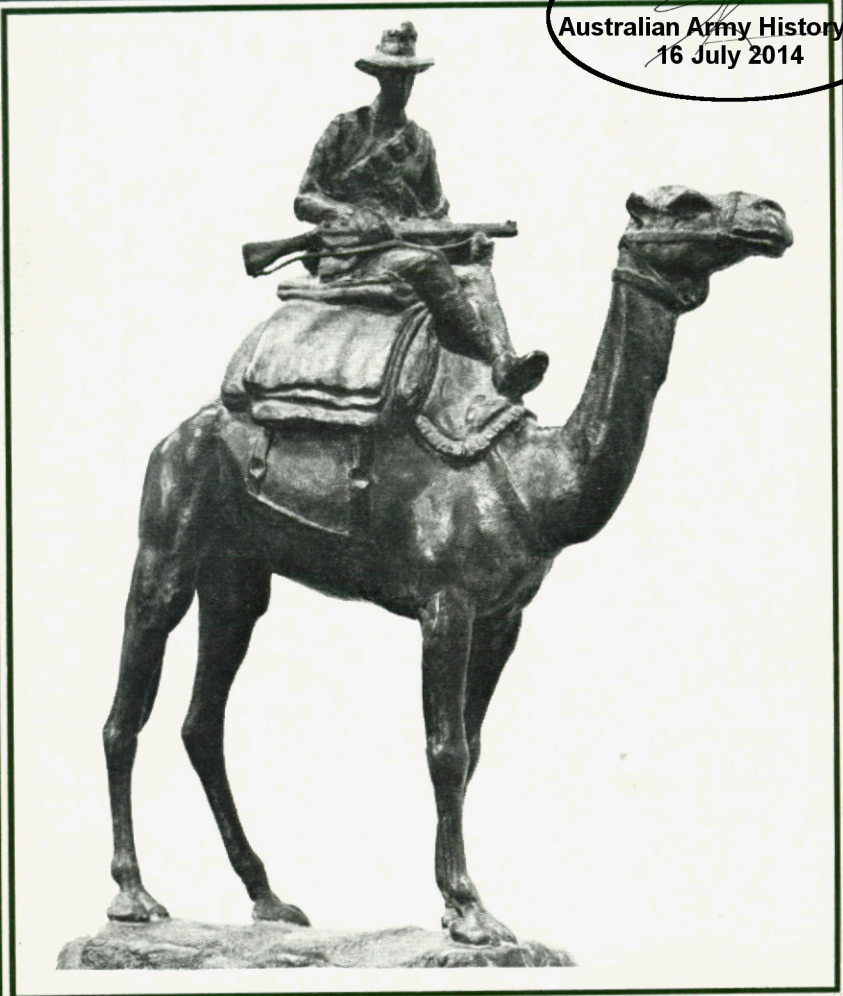


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At the Australian War Memorial.

ARMY JOURNAL

A periodical review of military literature

No. 251, APRIL 1970

Contents

- 3 Technical and Tactical Review of Small Arms
Major R. L. Twiss
- 22 Adventure Training in the Australian Military Forces
Major P. N. D. White
- 29 Sir Basil Liddell Hart: An Appreciation
Robert O'Neill
- 40 Proposed Reorganization of Task Force Logistics
Major P. A. Davison
- 51 The Proper Leader: Two Views
Lieutenant Colonel Fielding L. Greaves

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(Australian War Memorial)

Technical and Tactical Review of Small Arms

Major R. L. Twiss
Royal Australian Corps of Signals

In my view the infantry soldier is here for keeps.

—Field Marshal Lord Montgomery

Introduction

BECAUSE of the varied nature of tasks and diversity of targets, the infantry is armed with a wide variety of weapons. The present weapons are relatively new to the army. Replacement of the original weapons resulted mainly from the combined stimuli of technological advance, requirements arising from tactical doctrine, and the concept of future wars.

Most of the new weapons are of foreign origin, modified as necessary to meet our requirements. The need for standardization, and the economy derived from a policy of inter-dependence has made us rely heavily on foreign development for our small arms. This dependence on overseas development gives rise to a series of problems:

- A delay in evaluation and acceptance into service of a weapon.
- The weapons introduced are designed to meet a wider operational concept than is currently accepted within Australian defence policy.
- Support for these weapons is spread over a number of countries, rather than under our own control.

Major Twiss graduated from the Royal Military College, Duntroon, in 1957 and gained a diploma in Communication Engineering at the Royal Melbourne Institute of Technology in 1959. Since then he has served in various regimental and non corps postings, including two years as a radio engineer at Weapons Research Establishment, Salisbury, and two years in Vietnam (1965-66). He then attended RMCS, Shrivenham, followed by Staff College, Queenscliff. In 1968 he was posted as OC 28 Bde HQ and Sig Sqn, Terendak. His current appointment is SO2 Sigs HQ AAF Singapore.

Whether depending on local or foreign development, the weapons introduced must conform to the official agreed policy on the concept of operations. The future infantry roles within this concept must be studied in order to assess their influence on weapon design. Nevertheless, it should be remembered that the small arms designed for the infantry also form the basic armament for the rest of the army, and that the requirements of other corps may lead to alteration or modification of the original concept. It is essential that any modification to the weapon does not detract from the original concept, or affect the weapon's capability in the prime role as an infantry weapon.

Infantry weapons can, in broad terms, be divided into three categories:

- Small arms.
- Area target weapons.
- Anti-tank weapons.

Small arms for the purpose of this article are defined as — those weapons firing a non-explosive projectile of less than 20-mm calibre, capable of being carried and operated by a crew of not more than two men. The small arms as defined include the weapons normally found within the infantry platoon.

Aim

The aim of this article is to prove the proposition that, 'The current concept of operations for the AMF demands a technical and tactical review of the present family of small arms'.

DESIGN CONCEPT

In the broadest sense, the requirements associated with the design of any weapon system to suit an operational concept are the same. They are:

- Definition of the weapon capability to suit the operational concept.
- Reduce the weight of the basic weapon.
- Increase the lethality.
- Reduce the family of weapons.
- Simplify the weapon system.
- Increase the combat power of the infantry.

A small arms weapon system is comprised of two basic elements; the gun or weapon and the round of ammunition fired from it. A study of any weapon system should include both gun and ammunition to be complete. Emphasis should be placed on the ammunition rather than the weapon, particularly when the logistic implications are considered.

CONCEPT OF OPERATIONS

General

The concept of operations against which the current organizations are designed may be briefly summarized as:

- a. The area of operations of prime concern to Australia is South-East Asia, including Papua and New Guinea.
- b. The threat is comprised of a mixture of regular force units combined with a guerilla threat on the lines of communication and rear installations. The enemy will normally have numerical superiority.
- c. Australian forces can expect to be deployed with, and operate as part of a larger allied force, in cold, limited or general war situations.
- d. Requirement to move quickly and operate in a theatre on relatively light scales. (Thus the infantry division is air portable in Tac T(SR) and Tac T(MR) aircraft.)
- e. Maintenance requirements will be met primarily from Australian resources, but arrangements may be made with allied forces for provision of common user items.

Mobilization of the armed forces is a separate facet of the operational concept. The mobilization concept relies heavily on the readiness of the CMF, but more crucial is the ability of the nation to equip the forces mobilized. The nation must have ample mobilization stocks available immediately; have the capacity to produce the requirements from within her own resources, or rely heavily on Allied support. The last course is precarious if any cognizance is to be placed on experience gained during World War II or, more recently, in South Vietnam.

Area of Operations

The current concept of operations limits the area of interest to South-East Asia. Since restriction of the area of interest is defined, the

effect of these restrictions on the desired capabilities and design of weapons should be studied.

The terrain in South-East Asia is generally undeveloped by western standards. The effect of this lack of development, particularly in communications, places a stress on the administrative machine. This stress is expressed by the emphasis on air maintenance and air portability. Movement by air immediately requires effort to be directed to decreasing the weight of any item that may be moved by that agency. The direct effect of the airmobile concept should be for the weapon designer to:

- Produce a lighter weapon.
- Produce a round of ammunition that can produce the required terminal effects at a lower weight penalty.
- Stress the importance of ammunition weight rather than weapon weight.

Operational requirements will not vary to any marked degree due to the area of operations. The only real effect that could be considered is that of jungle on likely infantry engagement range, but since only a small percentage of the area of interest is jungle, the designer should plan on engagement ranges for open rather than close country. A study of anticipated infantry engagement ranges in North-West Europe has been carried out by the British Army: this study indicates that the mean small arms engagement range is about 160 metres and that some 88% of all small arms engagements will be at less than 300 metres.

Logistic requirements, by the nature of the area, are of prime importance. To this end the designer should consider all means at his disposal to reduce the logistical load. Such design features as interchangeability of component parts and standardization of ammunition should be incorporated in the design of the family of weapons. Any advance in this direction, so long as it does not affect the operational effectiveness of the weapon systems, would certainly ease the maintenance and re-supply problems.

Thus the concept of operations for the AMF requires a family of small arms weapons that is:

- Light and robust.
- Accurate against a point target to a range of 300 metres and in the area role out to 600 metres.
- Capable of being produced in Australia.

- Capable of producing the desired effect at the target.
- Contains an element of interchangeability between weapons.
- Preferably of the same calibre—that is, using the same ammunition.

Weapons in Service with the AMF

As a direct result of her defence policy Australia is party to a number of collective defence treaties designed to ensure the security of South-East Asia. The strength of the treaties is external to South-East Asia, the major signatories being the United States and the United Kingdom. The defence treaties, together with strong historical ties with Britain and the more recent association with the United States, have led to the AMF accepting into service an assortment of small arms of mixed origin.

The current small arms weapons are:

- A rifle of Belgian origin, currently in service with the British Army and using the standard NATO 7.62-mm ammunition (the automatic version of this weapon is included for simplicity).
- A machine carbine developed in Australia using a non-standard 9-mm round.
- A pistol of Belgian development, based on an original United States design using the non-standard 9-mm round.
- The 'light rifle,' or Armalite, of United States origin using a non-standard 5.56-mm round.
- The general purpose machine gun (GPMG) of United States origin using the standard 7.62-mm round.

Five small arms weapon systems are currently in service with the AMF. Each weapon has some particular role for which it was specifically designed and for which it is well suited. However, when it is considered that for five weapons in service three different calibres of ammunition are required, and to this is added the fact that only two of the weapons are produced in Australia, it is doubtful whether our current series of weapons is a sound logistic proposition.

The fire power of the infantry, and in fact the organization of the basic fighting section, is based on the GPMG. The weapon adopted for this role is the M60 of United States manufacture. This particular weapon system uses standard NATO 7.62-mm ammunition, but the weapon itself is bought as a complete unit from the United States.

No production facilities for the weapon exist in Australia, leaving us dependent, as in the early stages of World War II, on overseas production for our basic infantry automatic weapon.

The rifle and machine carbine, together with the necessary ammunition, are produced in Australia. This statement seems to disprove the theory that the current small arms are inadequate, yet on closer examination it can be seen that even this apparent advance falls well short of the ideal. First, we should consider our most likely allies — Britain and America. Britain is rapidly withdrawing from her Far East bases, and the likelihood of her early intervention in any situation in South-East Asia is remote. America, on the other hand, is deeply involved in South Vietnam and Thailand, so that it is more likely that the AMF will be committed to operations with American rather than British troops. Secondly, America has always been loath to commit ground troops to the mainland of South-East Asia.

The position in relation to our current rifle and machine carbine may be summarized as:

- The rifle can, and is, currently supported from either United States or Australian logistic resources for ammunition, but maintenance for the equipment itself must come from Australia.
- The machine carbine must, of necessity, be maintained from Australian resources, as both ammunition and weapon are non-standard to United States forces.

The remaining weapon systems suffer from similar disadvantages. The main problems are:

- The pistol is basically a self-protection weapon and is ineffectual in any other role. The same problem exists with ammunition as for the machine carbine; in addition, the weapon is not produced in Australia.
- The Armalite weapon system requires complete support from the United States logistic system. This in itself is not critical, as the weapon is a complementary, rather than a basic, requirement.

To summarize the problems relating to the existing small arms situation in the AMF:

- The basic firepower source, the GPMG, is not produced in Australia though the ammunition is.
- The rifle can be supported in ammunition by United States

forces, but maintenance of the weapon itself must be from Australian resources.

- The machine carbine must, of necessity, be supported completely from Australian resources.
- The pistol is designed for self-protection purposes only and depends for weapon maintenance and ammunition on Australian resources.
- The 'light rifle,' or Armalite, is entirely of United States origin and all support must come from United States resources, either directly or indirectly.
- The five weapon systems use three different calibres of ammunition, only one of which is common to both British and United States forces.
- There is no compatibility or interchangeability between weapon components other than to a limited degree in ammunition.

From the summary of problems arising from the current series of weapons, it becomes obvious that a review of small arms is necessary.* The weapons are not specifically designed to meet the AMF concept; logistically they are not completely compatible with those of our major allies, and even though they are capable of fulfilling the tactical requirements, this does not necessarily mean that they are the right weapons for the AMF. To accept such a diversity of weapons and ammunition is illogical. Surely it would be more logical to investigate what we really do require. Then, if these investigations prove that a new concept in weapons is necessary, we would at least have weapons suited to our tasks. Production of new weapons, even of ammunition of a new or non-standard calibre, would not detract from the ability to fulfil our roles, nor could it aggravate the present logistic situation. In fact, the whole range of problems, tactical, logistic and training, could well be simplified. This, together with the ability to produce our own weapons — that is, the complete range of small arms weapons — must improve our defence capability.

The primary purpose of any infantry weapon is to inflict casualties on the enemy. Before consideration of any alternative weapon systems can be undertaken it is necessary to outline the targets likely to be engaged and the terminal effects necessary to cause effective casualties.

* *A study of future developments in the whole field of small arms has been under way for some time.*—Editor.

TARGET ANALYSIS

General

The capability of the family of small arms weapons should extend to cover the range of soft targets likely to be encountered under the existing operational concept. Soft targets include all lightly protected or exposed targets; the natural bias is towards personnel, though targets such as vehicles, equipment and lightly constructed buildings should be considered. The remainder of this section is directed at examining the specific problem of the attack on personnel; in particular, the terminal effects required and the means of obtaining these effects.

Terminal Effects

In general both psychological and physical effects are required at the target. Psychological effects should be such as to prevent the enemy from using his weapons effectively, demoralizing him and depriving him of the will to fight. Physical effects must be capable of causing casualties to personnel and damage to material targets.

Psychological Effects

The psychological effects available from small arms weapons are dependent on the rate of fire, the accuracy of the fire applied and the capacity to maintain that fire. This indicates that the family of weapons required should be either semi-automatic or automatic and accurate to the expected engagement range. The ammunition should be light enough to ensure that the combat soldier can carry sufficient to ensure the endurance of the applied fire.

Physical Effects

The physical effects of a weapon are determined by the performance of the individual projectile and the probability of that projectile hitting the target. In other words, the physical effects depend on accuracy and the wound inflicted.

Wound Ballistics

A wound is caused by the transfer to the target of some of the projectile's energy. The severity of the wound is determined by the actual energy transferred and the rate at which the transfer is effected. These two parameters are in turn governed by the velocity of the

projectile and the cross-section presented to the target. The cross-section of the projectile to the target is determined by the calibre, attitude on arrival and stability on contact.

If the total energy transfer is small and/or the time application of energy is long, then a comparatively mild type of puncture wound occurs. The area of damage is small and resultant casualty will not generally be serious. The exceptions are in the case of a severed artery or a hit on a vital organ. This type of wound is prevalent with low velocity projectiles, such as a spent bullet, and with high velocity, streamlined projectiles flying true and not easily tumbled by the target. This type of wound is the type that may be expected from a 7.62-mm ball bullet at ranges of 200 to 300 metres.

If, however, the total transfer of energy is large and/or the time of application of energy is short, a much more severe type of wound is caused. The effect is known as 'cavitation,' or explosive wounding, since subsequent examination reveals a large, macerated, partial cavity in the flesh in which it appears that a mild explosion has occurred. In this case the area of damage is large and the casualty will nearly always be severe. This type of wound is prevalent with high velocity projectiles that are not flying true, such as a 7.62-mm bullet whilst yawing, or are easily tumbled by the target, such as the 5.56-mm Armalite bullet, and low velocity fragments which give up their energy extremely quickly.

Lethality

Evaluation of a small arms weapon must of necessity be based on a lethality criteria. The incapacitating effect of the anti-personnel missile appears to depend on the formula mass (m) and velocity ($V^{3/2}$).

Since velocity is the more important than mass in the wounding criteria, velocity should always be kept as high as possible. The mass of the projectile is thus the only parameter left with which the weapon designer can vary the lethality of the weapon system. Generally the mass of a projectile will be influenced by the range required, ballistic shape and matching to the target. Since range is laid down by the tactical requirement, and shape is already well established for maximum performance, target/projectile matching should be considered.

Projectile to Target Matching

Ideal matching of a projectile to a human target has been proved to be a high velocity fragment of a mass of 2-10 grains. To obtain this ideal with a small arms bullet is virtually impossible since the velocity

required demands a relatively large calibre. This large calibre, together with ballistic shape requirements, produce a projectile mass well in excess of the ideal. Current projectiles are the 7.62-mm of 150 grains and the 5.56-mm of 50 grains.

Three different calibres of small arms ammunition are in service with the AMF. A study of these ammunitions reveals:

- The 7.62-mm round is grossly over-matched to the average target, since only a small proportion of the total energy available is necessary to produce an effective wound.
- The 9-mm round is a medium velocity, high mass projectile that has a limited range and due to its relatively low velocity is under-matched to the average target at expected engagement ranges.
- The 5.56-mm round is more closely matched to the average target and imparts a high proportion of the energy available to the target.

The Intermediate Round

The obvious disadvantage of the gross over-match of projectile to target leads to the idea of the intermediate round. This concept is not new. Basically the question is, why use two or three calibres when one may satisfy all requirements? Surely the logical approach is to produce an ammunition that is efficient for a carbine or rifle and is still effective when fired from an automatic area weapon. The Germans had such a round, the 7.62-mm Kurz, in 1942; the Russians currently use the 7.62-mm AK, and the British produced the very effective .280-in prior to adopting the 7.62-mm NATO round.

The immediate advantages of the intermediate round concept are:

- One weapon, the machine carbine, becomes redundant.
- Only one calibre ammunition is necessary to satisfy the normal infantry point and area target requirements.

The logistic implications of these benefits are overwhelming. The fact that there would be one less weapon to produce and maintain is insignificant when compared with the reduced ammunition problem. The adoption of a single small arms ammunition would improve and simplify production, handling, storage and re-supply of ammunition to forces in the field.

STANDARDIZATION

Standardization within ABCA

The introduction of an intermediate round raises the problem of standardization. The object of the ABCA agreement is, in part, to achieve standardization in weaponry — in particular, ammunition. This ideal has not, except in the case of the 7.62-mm NATO round, been achieved. The United States currently uses three calibres of ammunition, only one of which is standard to the United Kingdom, and two with Australia.

Before standardization can be discussed current trends in small arms development should be considered. In the late 1950s Britain evaluated an intermediate round weapon, the .280-in rifle. This weapon, which proved entirely satisfactory, was abandoned to allow standardization to the NATO 7.62-mm standard. The main proponent for the acceptance of this standard was, in fact, the United States.

Since introduction of the NATO standard round considerable research effort has been directed towards the improvement of small arms. The research has been directed towards improved target effects, in particular the relative lethality of the various rounds. This research has indicated that although the 7.62-mm round is effective, smaller and lighter rounds can achieve as good, if not better, effects out to normal infantry engagement ranges. The United States, once the leading proponent of full-bore ammunition, has devoted considerable effort to the development of the 5.56-mm round, which is not standard with ABCA, nor as effective as the discarded British .280-in round.

Standardization of ammunition is important within ABCA, but it is doubly so within the AMF. The adoption of an intermediate round, say, the 5.56-mm, could provide this standardization within the country, reduce the production problems and still provide a measure of standardization with the United States. The trend of ammunition design in the future must be towards a lighter round. This in turn means that the adoption of an intermediate round as a standard is a definite possibility in the foreseeable future. The round developed or accepted need not necessarily be the 5.56-mm, but it will certainly be something similar.

NEW CONCEPTS

The Stoner Weapon System

Eugene Stoner, designer of the 5.56-mm round, developed a revolutionary new concept in weapons in parallel with the new intermediate round. The basic elements of the concept are:

- A basic trigger/ammunition feed group.
- An inbuilt capacity to accept belt or magazine feed.
- Interchangeable barrels of varying length to suit particular tasks.
- Interchangeable butt groups to suit the weapon role.
- Interchangeable ancillaries such as tripods, bipods and electric firing mechanism.

Additional design features incorporated in the concept are:

- Light construction.
- Maximum use of plastic mouldings and steel pressings.
- Simple and relatively cheap production.

The Stoner concept offers a flexible weapon system that could provide, with the necessary ancillaries, any weapon required by the infantry battalion. The system based on the 5.56-mm round falls short of the ideal, particularly in the sustained fire, area weapon role as currently filled by the GPMG. This failing is a shortcoming of the ammunition rather than a fault in the concept. This fault could be remedied relatively simply by adoption of a proved round with the required characteristics. Examples of suitable rounds are the British .280-in and the Russian 7.62-mm AK rounds.

Introduction of a family of weapons based on the Stoner concept offers a solution to the AMF weapon problems. The single round would make the logistician's task easier, reduce training problems, both in the use and maintenance of the weapon, and the production aspects of both weapon and ammunition would be simplified. These three factors would enhance Australia's capacity to produce and maintain weapons for her army in any situation.

Dardick System

The Dardick system offers basically the same facilities as the Stoner system. The radical difference is in the ammunition. The concept is a unique combination of revolver and semi-automatic weapon principles. The Dardick uses a revolving, open-ended cylinder as both

ammunition feed and firing chamber. The cylinder is indexed to the barrel and on each firing rotates into the firing position, picking up a round from the magazine on the way. This is fairly normal operation, but the cartridges are triangular in shape. The triangular structure is necessary to allow the open chamber design of the cylinder which is necessary for a rotating cylinder magazine fed weapon.

The significant features of the design are:

- Interchangeability of components allows a one-calibre family of weapons.
- Elimination of a spring or gas operated bolt action.
- Eliminates the design problem of extraction.

The Dardick system has considerable merit. There are many advantages inherent to the design, not the least of which is the ability to load the weapon with individual rounds as necessary. On the debit side, however, are the manufacturing problems associated with both the weapon and the ammunition.

A comparison of the two systems reveals that the Stoner system is more adaptable than the Dardick. This applies in particular to production facilities and the cost involved in re-tooling to accommodate an unorthodox cartridge case.

TACTICAL CONSIDERATIONS

General

The main points for discussion are:

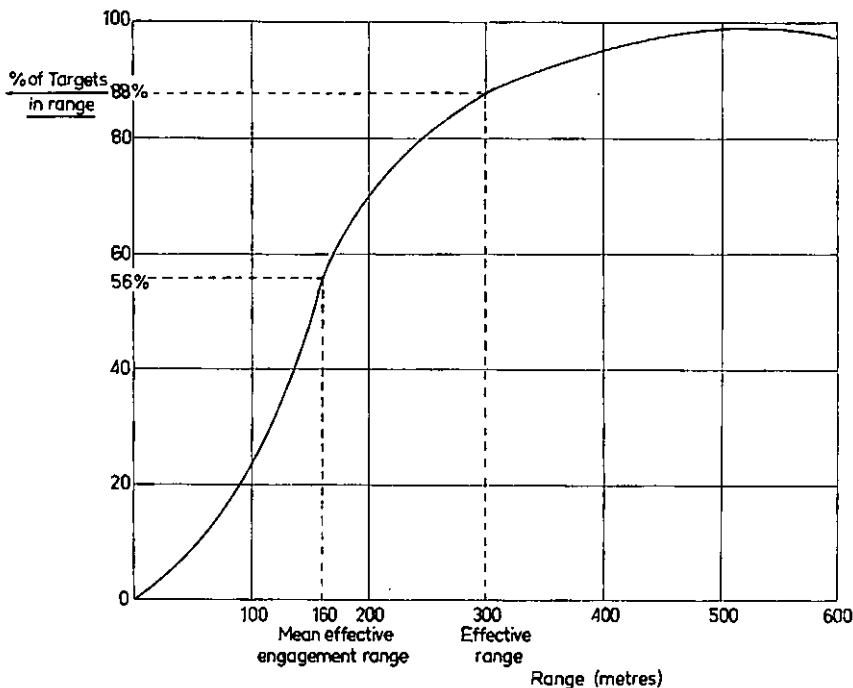
- Expected engagement range.
- Accuracy of the weapon.
- Adaptability.
- Sighting system.
- Training.

Expected Engagement Range

The range at which a single shot engagement can be expected will vary considerably depending on the terrain. In general, the open country engagement range should be accepted as a design criterion, as this is the worst case as far as accuracy is concerned. Figure 1 is an extract from a British publication. This extract indicates that under

conditions in North-West Europe 88% of the engagements will occur at, or less than, 300 metres, and that 60% of the engagements will be carried out at less than 200 metres. These figures apply to open country and should be reconsidered if jungle conditions are to be the criterion.

FIGURE 1. EXPECTED RANGE FOR RIFLE FIRE ENGAGEMENTS



The weapons in service with the AMF should be considered in relation to the expected engagement range. Even a cursory survey will indicate that:

- The rifle is effective to well beyond 300 metres, the sights are, in fact, calibrated out to 600 metres.
- The Armalite is effective out to the range required.
- The machine carbine is not effective beyond 150 metres.
- The pistol is effective only at point blank range.
- The GPMG is effective in the area weapon role out to at least 800 metres; the round itself is still lethal to about 1,100 metres.

The current series of weapons falls short of the ideal by a considerable margin. No valid arguments could be found to support the inclusion of the pistol or machine carbine in the inventory of weapons. On the contrary, both weapons are an economic and tactical liability, since neither can reach out to the expected engagement range, require a special 9-mm round of limited lethality, and require the production and maintenance of two separate weapons.

The rifle, however, is capable of fulfilling the tactical role. Even so, is it necessary to produce a weapon accurate in static tests and with sights graduated to 600 metres when 300 metres is the most likely engagement range? The weight penalty in both weapon and ammunition for over-insurance is heavy and unnecessary.

The infantry requirement for a section machine-gun is for a light, sustained fire weapon with the ability to reach out to 600 metres. The current machine-gun can, in fact, accomplish this task though with some attendant problems. It is quite difficult to patrol with a long ammunition belt trailing from the weapon — a magazine feed would probably be preferable. The ideal, of course, is a weapon which can provide both the magazine feed for immediate use and the belt feed for the sustained fire role.

Each of the weapons discussed fall short of the ideal by a considerable margin in at least one respect. The solution to the problem could lie in the acceptance of the intermediate round concept, combined with a family of weapons based on the Stoner concept. The selection of weapons is adequate to fill all the normal tasks, added to which are the fringe benefits of a round designed primarily for the average target, a lighter weapon, lighter ammunition and adaptability of the weapon to varying types of warfare.

Accuracy

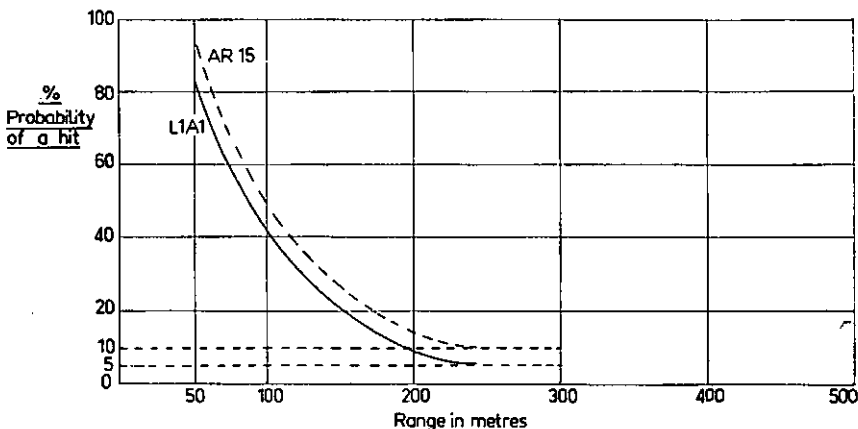
Accuracy of a weapon system on the battlefield is essential. There are two elements affecting this accuracy; they are:

- Weapon accuracy.
- System accuracy. The system, of course, must include the operator.

A study of the tactical hit probabilities of a single shot engagement is shown in Figure 2. From this it can be seen that the average hit probability at 300 metres is about 4% with the current rifle and 7%

with the Armalite (from RMC of S). Yet a static accuracy test proves that the current rifle is a slightly more accurate weapon. The discrepancy occurs not in the weapon or conditions under which it is operated, but in the operator. The current rifle has quite a 'kick,' due to both its high muzzle velocity and weight of projectile; the Armalite, however, has virtually no 'kick.' This single factor increases performance of the complete weapon system quite considerably over the expected engagement range.

FIGURE 2 AVERAGE TACTICAL HIT PROBABILITIES OF A SINGLE SHOT



A further significant factor is related directly to range and hit probability. The merit of producing a rifle with sights graduated to 600 metres seems pointless when the probability of a hit is as low as 4% at 300 metres. Any range increase beyond 300 metres will considerably decrease the probability of a hit. The most logical answer to this is that a rifle capable of accuracy to 600 metres is a luxury. An area weapon with a lesser degree of accuracy could cope more effectively with any target at the extreme range purely on the number of rounds delivered into the target area, with the automatically increased probability of a hit.

Adaptability

The ability of the weapon system to accommodate to the environment is a desirable design feature. Throughout World War II efforts were made to reduce the length of the Lee-Enfield rifle for use in jungle terrain. The modifications produced a weapon easy to

manoeuvre in close country, but only just usable from the soldier's point of view. Accuracy was limited and the weapon had a considerable 'kick.'

The ability of the current series of weapons to adapt to the environment is questionable. The rifle, if shortened, would suffer from the same problems as the jungle carbine of World War II. The problem lies in the power of the charge required for a full bore round. An intermediate round uses less charge and even if a short barrel were used the rearward thrust of the weapon would only increase to approximately that of the standard rifle. Accuracy would naturally be decreased.

One feature of adaptability that should be stressed is weapon balance. A well balanced weapon 'throws' into line readily. The ideal would be to emulate the better shotgun designs which have gained popularity, mainly through balance and the ability of the firer to point instinctively at the target. A military weapon with this degree of balance would decrease the engagement time and increase the probability of a hit with unexpected short range targets.

A major failing with the current weapons is the inability to reload quickly. The rifle is a particularly good example of this failing. The rifleman is issued with two magazines; after these are expended he must reload the magazines, round by round, before he can continue to fight. This is a retrograde step; even the Lee-Enfield allowed quick, easy reloading of the magazine, from ammunition pre-loaded in clips, at any time during an engagement.

The only means of overcoming this problem in the current, or a future series of weapons appear to be:

- Incorporation of a 'charger guide' such as in the Lee-Enfield.
- Use of disposable plastic magazines.

The idea of a plastic magazine conjures up all sorts of logistics bogeys. The concept is, however, perfectly feasible, particularly if the Stoner concept were adopted. In this case only one type of magazine need be produced for all the weapons and the issue of ammunition in pre-loaded magazines would reduce the packaging and distribution problems for both the logistician and the field soldier.

Sighting Systems

All the current weapons have adequate sighting systems for normal daylight use. There are, however, five weapons each with a slight

variation of range indication. Simplicity of operation and training demands that a uniform sighting mechanism be introduced. This could be achieved with the multi-purpose weapon concept.

The night sighting capability of most infantry weapons is limited. It is not suggested that all infantrymen be issued with elaborate infra-red or image intensifier sights, but at least some effort should be directed towards improving the capability of the weapon by night. The United States Army has developed the 'Multi-Lite' sight and the British Army currently use the 'Tri-lux' sight. The advent of the 'Beta-Light', a small radio-active light source, offers a very real possibility for a cheap, effective night sight. The 'Beta-Light', if aligned with the barrel, could facilitate the alignment of weapon to target at extreme night vision range. This is not available on the current weapons.

Training

Training on weapons must be considered from two aspects. These are:

- User training.
- Training of maintenance personnel.

The current inventory of weapons poses a considerable problem in both fields. The user must be trained in use of all five weapons, or at least four if the pistol is disregarded. Since each of these weapons is quite different in concept, this training, though not difficult for the soldier to assimilate, takes some time. The maintenance effort on the other hand is quite complex both as regards training of personnel and provision of parts.

The entire system of training could be simplified by the introduction of a multi-purpose weapon concept system. Training of the user is simplified, since he has only one basic weapon to master, the maintenance training is simplified for the same reason and the logistic problem of provision of spare parts is reduced.

CONCLUSIONS

The conclusions drawn are:

- The current series of weapons suffers from both logistic and tactical shortcomings.
- Standardization, while desirable is not essential, provided Australia's defence capability is improved.

- New design concepts are available that could overcome the tactical short-comings and reduce the logistic problems associated with our current weapons.
- Australia should improve her capability of providing small arms for her forces.
- Current weapon design is tending towards an intermediate round concept.
- Night firing capability of the weapon systems could be improved by a simple, inexpensive sighting system.

RECOMMENDATIONS

Recommendations are:

- Current weapon systems be reviewed with the aim of reducing the number of weapons used and increasing compatibility with allied forces.
- A programme of research be instituted to study the weapon effects required in the projected area of operations.
- A development programme aimed at developing an intermediate round, combined with a multi-purpose weapon system, be initiated to study the weapon system and Australia's capacity to produce such a weapon in quantity. □

TARAKAN 1945

The main object of the Tarakan operation was to establish an air base from which to support later operations in Borneo. The airfield proved so difficult to repair that it was not ready in time for the opening of the operation against either Brunei or Balikpapan, and fighter cover for those landings was provided from Tawitawi and from aircraft carriers. Thus events demonstrated that the role allotted to the Tarakan airfield, which was strongly defended, could be performed by the Tawitawi airfield, which, with Jolo Island, had been taken by American forces without opposition early in April. Another reason why, in retrospect, the choice of Tarakan as an objective seems unfortunate is that it was an island from which the defenders had no means of withdrawal, and since they would not surrender, they sold their lives dearly. The Australian losses on Tarakan were nearly as high as those suffered by the 6th Australian Division in the conquest of Cyrenaica early in 1941.

—Gavin Long, *The Final Campaigns* (1963)

Adventure Training in the Australian Military Forces

*Major P. N. D. White, MC
Royal Australian Infantry*

**I'd have you learn to sleep upon the ground,
March in your armour through watery fens.
Sustain the scorching heat and freezing cold,
Hunger and thirst, right adjuncts of the war,
And after this to scale a wall,
Besiege a fort, to undermine a town,
And make whole cities caper in the air.**

—Tamburlaine (to his sons)

**Whenever I have the feeling to take some physical
exercise, I lie down until the feeling passes.**

—Anon.

THE conflict of opinion as expressed by Tamburlaine and by the anonymous, but widely representative gentleman above, may never be resolved, but as we have not yet reached the age of push button, computerized war we must, as soldiers, encourage the more basic virtues which appealed to Tamburlaine, and, one hopes, to his sons. One way of encouraging and developing these qualities is through a scheme of Adventure Training.

Adventure Training is an accepted activity in many armies in the world, yet it has never been recognized by the Australian Military Forces. This article suggests that such a scheme be introduced into the AMF, and how it may best be implemented and controlled.

Major White graduated from RMC, Duntroon, in 1957 and served as a platoon commander with 11 NS Trg Bn for 12 months. From 1959 to 1961 he was a platoon commander and later the intelligence officer in 1 RAR whilst in N Comd and Malaya. He was Adjt RMC (1962-63) followed by three years (1964-67) in PNG with 1 PIR and 2 PIR. In 1968 he joined 2 RAR and served with them in Vietnam. In August 1968 Major White was sent to the UK to attend the 1968-69 British Staff Course and on completion of this assumed his present posting in the Office of the Military Secretary, AHQ, Canberra.

The aim of all Adventure Training should be the improvement of a soldier's physical and mental condition. (Improvement in his spiritual condition may well follow, but the soldier's spiritual welfare is not the object of Adventure Training). The particular qualities it is aimed to develop are initiative, self-confidence, self-reliance, dependability, mental resilience and powers of leadership. It is true that normal tactical training will develop these qualities to a considerable degree. However, further training of a less rigid, but no less personally demanding, nature can be a valuable aid in the full development of the soldier and the man.

Whenever the subject of Adventure Training is raised, it is usually summarily dismissed as 'not necessary for Australians'. This attitude is based partly on the revered but erroneous Anzac tradition which implies that all Australians are physically tough, fearless fighters and natural soldiers. Nothing of course could be further from the truth. Australians, like anyone else, require the very best training available to fit them for modern war. The increasing urbanization of recruits, the development of an affluent welfare state, and the increasing loss of individual identity in modern society all play their part in detracting from the particular qualities a soldier is required to have. Adventure Training could be a valuable aid in improving these qualities.

To Be and not To Be

What, then, are the elements of an Adventure Training scheme? Based on the experience of other armies, the scheme should:

- a. Be open to all ranks.
- b. Have adequate (i.e. tri-service) support in finance and equipment.
- c. Encourage such activities as sailing, canoeing, mountaineering, ski-ing, underwater swimming, exploration — but not preclude any activity without consideration.
- d. Include in each activity:
 - (1) A distinct element of adventure and hardship.
 - (2) A team with a team objective.
 - (3) A definite challenge and obstacles.

It is important that the scheme be open to all ranks. The leader of a mountaineering party may well be a private soldier, if he is the most experienced mountaineer in the party. It is the junior ranks of

the Army which should be encouraged, as in these are the men who have probably had least opportunity for this type of activity.

Tri-service support is important for several reasons. The most important one is that each service can assist in reducing the enormous cost of moving parties on Adventure Training schemes, by providing service facilities where available. Other reasons are the reduction of wasteful, overlapping effort (inevitable if each service ran its own scheme) and the provision of positive opportunities for inter-service contact and co-operation.

Australia and its territories are well placed in terms of terrain and climate to support Adventure Training. From the jungles of New Guinea, where tribes still remain undiscovered, through the mountains, deserts, and plains of Australia, to the snow and ice of Antarctica, every conceivable type of climate and terrain can be found.

The duration and scope of activities should range from week-end hikes to full scale expeditions. Some expeditions may last months, if the objectives of these longer activities are considered important enough.

It is fundamental that activities in the scheme will involve some risk, and accidents are bound to happen. These must be accepted. One of the essential elements of the scheme is the training of men to calculate the risks, physical and administrative, and to overcome them.

There are aspects of Adventure Training which have arisen in other armies, which should not be encouraged or permitted in our own. An Adventure Training scheme should not be:

- An extension of normal military training embracing activities which can be carried out in unit tactical training.
- An exclusive organization for officer excursions to the more exotic parts of the world.
- Dominated by cliques of experts who regard Adventure Training as their private preserve, to the exclusion of the less gifted.
- An adventure for the benefit of one or two men with a strong supporting cast.
- A scheme so encased with rules, restrictions and red tape as to make its understanding by soldiers difficult, and its widespread application almost impossible. A balance must be kept between fun and safety.

It is important to emphasize that Adventure Training should not (unlike the scheme in the British Army) be 'considered a normal part of military training'. If normal military training can cover Adventure

Training activities then the latter is wasteful and unnecessary. The essential idea of the scheme is that it is different, exciting, and to a maximum extent privately initiated, organized and executed. It should allow soldiers an opportunity for self-expression in a disciplined environment. In a society where youth considers individual expression an important factor, the publicity of Adventure Training could be an important recruiting factor.

Benefits to the Army

What benefits will the army reap from the introduction of an Adventure Training scheme? The physical and mental condition of participant soldiers will improve and so will, in some cases, their power of leadership. This is the most important benefit to the army, but not the only one. Adventure Training can be a magnificent source of good publicity and thus an important aid to recruiting. Well presented publicity of an exciting expedition is more likely to increase recruiting than tomes of publications on pay, pensions and promotion. Other benefits include an increased knowledge throughout the army of different climates, terrain and conditions, the testing of vehicles and equipment, and an increase in well motivated soldiers through the provision of constructive recreation facilities.

Control

A study of other existing schemes would suggest that in brief outline the most effective form of control would be:

Joint Service Control at AHQ level. This may be a board of three men (one from each service) working on a full-time basis in Canberra. Its tasks are overall control of Adventure Training, the allocation of funds and service support to approved activities, the co-ordination of activities across command boundaries, and the supervision of activities outside command boundaries.

Control by Commands. At this level commands would approve activities within their commands and allocate what funds are delegated to the command.

Units. The units, as usual, must bear the brunt of the scheme. Here the activity is initiated, organized, and the men trained. The appointment of an Adventure Training officer in each

major unit, or in each group of minor units seems a logical and necessary step. COs must have the power to reject any activities; but more important, they must have the authority to approve them and support them through the command headquarters.

Safety

Mention has been made before of the need to balance the elements of fun, adventure and safety. An element of risk is essential but this risk must be calculated and weighed by someone with the necessary experience. This will be, in most cases, the team leader. It is not the place here to specify the detailed qualifications of team leaders. There are many organizations, both civilian and military, who can train and qualify men for various activities. If, for example, the proposed activity is a canoeing trek, then approval should not be given until the team leader and the team members have proved their proficiency at required minimum levels. The essential elements of Adventure Training safety exist in thorough planning, experienced leadership, prior training and qualified medical assistance.

Financial and Service Support

The financial implications of support for Adventure Training will no doubt be, or be made, complex and difficult. It is sufficient to say that the allocation of a sum of money for each participant in an Adventure Training activity has not been a success in existing schemes. For example, if the Adventure Training grant is \$20 for each man in an approved activity, he may get it regardless of whether the activity is a week-end of rock climbing or a three months' expedition to Timbuktu. This situation is obviously unsatisfactory.

A more sensible arrangement would be the allocation of funds at AHQ and command level. At these levels they could be disbursed according to the merit and the difficulty of the team's objective, the extent of service support, the number of soldiers involved, and the distance and weight of stores and men to be moved. The extra cost of any activity, must, of course, be borne by the members themselves. In large and difficult expeditions the cost can be considerable. Usually the biggest single expense in any undertaking will be transport. A positive attitude by all three services and the provision of service transport can reduce this cost.

Costs can also be reduced in other ways. For example, private firms (cars, petrol, food, radio), societies of exploration, geography, science, medicine, automobile associations—all can be approached, and may be induced to contribute. The fact that advertising would not be allowed (except perhaps in trade journals) would inhibit their participation but not extinguish their interest. In major undertakings press, magazine and book rights could be sold in advance, as well as film and TV rights.

The degree of service support will vary with each activity, but requests for transport (air, sea, and land), training stores, leave, etc. must not be considered as outrageous demands. These requests must be considered and granted wherever possible. It must be accepted as basic that all soldiers on approved Adventure Training schemes are on full military duty.

Criticisms

There are some obvious criticisms of an Adventure Training scheme for the AMF. Some might be:

The cost does not justify the return. This is purely a matter of opinion. How does one value the return? It is my opinion, as a regimental officer, that the return would far outweigh the cost. A Treasury official's view might understandably be somewhat different, until perhaps he has been shown the results of a successful Adventure Training activity.

It is not necessary for Australian soldiers. While it is true that the Australian Army has never been found wanting, there is room for great improvement in some aspects, and Adventure Training could make a valuable contribution to this improvement. In addition, the increasing urbanization of our society increases the value of any scheme for the improvement of a soldier's ability to 'rough it'. This factor will become increasingly important as the percentage of recruits from urban areas increases year by year.

War provides the greatest adventure. First, wars are short. Secondly, Adventure Training is designed to improve the quality of the soldiers before they get to war. Thirdly, it provides some useful relaxation for them whilst training for war or between tours of operational duty.

Tactical training should be tough, imaginative and testing enough to make Adventure Training unnecessary. It rarely is, because of the large numbers of men involved and because of the wide range of their calibre. In addition, tactical training is not planned by soldiers and junior officers and NCOs, as is Adventure Training.

Conclusion

One can hardly pretend that Adventure Training is a burning issue in the Australian Army. However, Adventure Training is proposed as a valuable addition to the spectrum of army activities. In summary the reasons again are:

- The improvement of soldiers', junior officers' and NCOs' physical and mental condition and powers of leadership.
- An increased knowledge within the army of the different climate, terrain and operational problems to be encountered within Australia and its territories.
- An opportunity to present a new and interesting aspect of the army. Given good publicity, the impact on recruiting could be powerful.
- An opportunity to provide constructive recreation for many soldiers as an alternative to the profitless and debilitating pursuits that soldiers have been known to follow from time to time.

Adventure Training in the Australian Army may be somewhat late in being introduced. Some recommended guidelines for a scheme are suggested in this article and one hopes that a scheme which has been tried and proven in many armies of the world will not remain untried in our own. □

25 APRIL 1915

Until 7 a.m. those in the transports had no idea as to whether the landing had succeeded. The constant burst of shells on Plugge's, and the small boats far ahead returning singly and rather aimlessly from the beach, gave the impression that fighting was still heavy near the shore. About 7 o'clock, in the growing light, the anxious watchers along the ships' rails made out the forms of men digging, walking, and apparently talking together unconcernedly upon the high ridges ahead. There was no mistaking that casual gait—it was a sure sign throughout the war. They were Australians.

—C. E. W. Bean, *The Story of Anzac*, Vol. I.

Sir Basil Liddell Hart: An Appreciation

Robert O'Neill

CAPTAIN Sir Basil Liddell Hart died 29 January 1970, aged seventy-four. His passing marks the close of a life which was devoted to the advancement of military thinking. His watchword was not 'if you desire peace, prepare for war', but rather his own maxim 'if you desire peace, understand war'. His assumption that an understanding of war would lead to its control demonstrates his adherence to the rationalist tradition which, in strategic thinking, has been most notably personified by Jomini and Mahan. Perhaps his greatest contribution to military thought was in carrying this tradition through to solve the problem which defeated offensive strategies during World War I, and reduced warfare to a peculiar state of primitiveness. His notion of strategic penetration, the essence of the later method of *Blitzkrieg*, was developed out of his ideas for achieving tactical penetration, which were formed in the later stages of World War I. The power of the defensive, based on the machine-gun, the trench or pill-box and the barbed wire obstacle, had to be offset, Liddell Hart reasoned, by surprise, rapidity and flexibility on the part of the attacker, coupled with a determination to attack only at the enemy's weak points — not all along his front line.

It was but a short step from tactical penetration to the 'expanding torrent' system of attack which Liddell Hart evolved in 1919, whereby once a breach had been made in the enemy's defences at a weak point, a mass of infantry was quickly concentrated at the breach and then fed forward through it at maximum speed, expanding out behind the enemy's front as it went, spreading paralysis through the rear support areas at little cost in casualties. Although these ideas were taken up by some senior

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(Photograph: Janet Stone)

officers with enthusiasm, notably by Generals Maxse and Dugan, it was necessary for their general acceptance to bring about a revolution in thinking throughout the senior ranks of the British Army. Such changes had little appeal for those officers who felt that Liddell Hart's new methods were an implied criticism of their tactics during World War I and Liddell Hart soon became a centre of controversy, acquiring enemies as well as friends.

He was invalided out of the Army in 1924 on half pay, primarily because of poor health, but there were some members of the General Staff who were at least glad to be rid of this troublesome innovator. As a journalist, first covering tennis and rugby, and then commenting on military affairs for the *Morning Post*, Liddell Hart could both develop his ideas more freely and express them publicly. In 1925 he received his first major piece of good fortune in being appointed military correspondent for the *Daily Telegraph* on the death of the celebrated Colonel Repington. Soon afterwards he was offered the editorship of the military section of the *Encyclopaedia Britannica*. These two posts gave Liddell Hart the opportunity to widen his thinking to embrace the realm of strategy, by way of close study of some of the great commanders of the past who had achieved success through their own new discoveries and reforms. Gradually the notion of the expanding torrent in infantry tactics broadened to become the basis of his thinking about the nature of future warfare. Breakthrough was to be achieved by joint application of air power, tanks and artillery at a weak point and success was to be exploited by pouring through the gap a torrent of fast moving armoured vehicles which would advance deep into the enemy's rear, achieving what Liddell Hart termed 'strategic penetration'. The aim of these penetrating forces was to render the enemy incapable of resisting as quickly and as economically as possible. Set piece battles were to be avoided as the moving armoured spearheads swerved around centres of opposition to attack the more vulnerable communications on which the defenders depended. Of particular importance in the development of these ideas had been Liddell Hart's studies of the Mongol armies of the thirteenth century and of Sherman's generalship in the American Civil War.

The concept of mechanized warfare fell upon stony ground in Britain but, ironically, was nurtured and flourished in Germany in an army which was only too keen to make up for its deficiencies during World War I. Britain, like most countries, was beset by financial

difficulties in the late 1920s and early 1930s and although experiments with mechanized warfare were carried out, they were not pressed through to reveal the great efficacy of the new methods. No doubt the desires of senior cavalrymen to preserve what Lord Haig called 'the well-bred horse' in its outmoded position of prestige on the battlefield mitigated heavily against mechanization. Liddell Hart was not the only thinker and writer active in advocating such a new approach to tactics. Both Colonel Fuller and Major Martel in particular made notable contributions to the theory and practice of mechanized warfare but they did not enjoy the power of the press to the same extent as Liddell Hart. Not only was it easier for the latter to publicize his ideas but also a greater responsibility devolved upon him to play the role of prophet for this very reason.

Further research led Liddell Hart to think more about the fundamentals of strategy rather than tactics and in the late 1920s he evolved what has probably become his most well known doctrine, the strategy of the indirect approach. It is arguable as to whether this notion is really a major step forward in strategic thinking or not for despite the fascination of its title it amounts to little more than the truisms of the principles of war. However, seen in the context of its times, when Liddell Hart was struggling against military conservatism which tended to see little wrong in the tactics of the trenches, it amounted to a statement which was both more meaningful and challenging than it appears today. Like all popular theories of strategy it is essentially an oversimplification to imply, as Liddell Hart did in his book, that all successful strategies are essentially indirect ones. To support this thesis he had to stretch some of the cases which he quotes beyond the limits of historical accuracy, such as in his account of the Franco-Prussian War of 1870 where he claimed that the German Third Army after the battle of Froeschweiler was 'allowed' to continue on its path instead of wheeling northwards to concentrate with Moltke's other two armies. In fact the Third Army took this course because Moltke's system of control had broken down and chaos reigned in the high command. To run one's armies chaotically may indeed be an indirect approach to an enemy who normally expects competence in his opponent but it is hardly likely to be an acceptable basis for logical planning. There are many other instances which Liddell Hart has claimed to be successful examples of the strategy of the indirect approach but which boil down to blunders which the enemy was unable to exploit. The very idea of the intrinsic success of indirect methods is open to question, although

naturally a well thought out, cunning plan which is likely to conceal its aim from the enemy until the last minute is likely to be superior to a direct frontal assault. When for example time presses acutely or when one side possesses overwhelming superiority, a rapid, direct approach may be a more effective strategy than an indirect one. There may be much in favour of the strategy of indirect approach but it would be fairer to Liddell Hart to remember him more for the strategy of the breakthrough and deep penetration.

Between the wars, Liddell Hart was not concerned merely with land warfare but also took a close interest in questions of naval and air power. He aroused the opposition of the Admiralty by stressing the greatly increased vulnerability of capital ships, particularly in the narrower seas. In their place he advocated a large number of small, high speed surface craft and a medium sized force of submarines. He was also quick to emphasize the value of the combat aircraft as technology advanced and he incorporated airpower into the basic idea of strategic penetration. German progress in developing the *Luftwaffe* after 1934 also led him to take a keen interest in the techniques of air defence, particularly the supply of anti-aircraft guns for the London area. London's poor state of protection against bombing at the time of the Munich crisis, despite the urgent warnings of Liddell Hart, was a significant factor in Prime Minister Chamberlain's mind in deciding to appease Hitler.

The success of most of his ideas was proved in World War II, initially by the Germans, particularly Guderian and Reichenau, but in time by all of the major contenders in the European theatre. The advent of nuclear weapons posed even bigger problems for post-second world war strategists than the tank had after 1918 but Liddell Hart was not content to rest on his laurels. Since 1945 his writings have been more concerned with questions of history or of long range thinking about strategic problems than before 1939 when he was deeply involved in commenting on day to day policies. He did not achieve the eminence in post-war strategic debate which he had enjoyed earlier but nonetheless his writings show an acute grasp of the problems of maintaining international stability in the nuclear age. His reluctance to involve himself deeply in the controversies of counter-insurgency warfare perhaps shows a judgement which has done him credit. At any rate his reputation will not be sullied by any mistakes in forecasting the trend of events in Vietnam, although in late 1965 he did state that the Americans would

need at least one million troops in South Vietnam to bring the countryside under control and it seems unlikely that he will be proven wrong.

Basil Henry Liddell Hart was born on 31 October 1895 in Paris. His father, a clergyman of some private means, ministered to British Parisians until his return to England in 1901. Basil soon displayed a fascination for tactical manoeuvres with toy soldiers and this grew into an absorbing interest in military affairs and the history of warfare which diverted him from other studies during his secondary education at St Paul's School, London. Nonetheless he gained admission to Corpus Christi College, Cambridge in 1913 and commenced the history tripos. His studies were interrupted by the outbreak of war in 1914 when he joined the Kings Own Yorkshire Light Infantry and went to France in 1915 as a subaltern. His period in the trenches was interrupted by bouts of fever but he went on to become second-in-command of a company, a posting which probably saved his life during the bloody Somme offensive of 1916 for he was kept back from the first attack wave to form part of a nucleus of officers who were to take over command if the worst happened and the battalion was decimated. The worst did happen and, for a short time, Liddell Hart found himself in command of the remnants of a battalion. Two weeks later he was gassed by the then little known phosgene, a more insidious poison than chlorine because its effects were not noticeable until after some time, by when usually fatal damage had been done. Liddell Hart's strong lungs, which had been developed by long distance running, pulled him through although he did not return to the front.

During the last two years of the war, Captain Liddell Hart as he then was concentrated his energies on training raw troops according to his own ideas. He was given wide scope because by that stage of the war there was such a need for new methods that nobody was inclined to stop him from transgressing the bounds of orthodoxy. This period stood him in good stead when the armistice came and he endeavoured to stay on in the Army as a regular. His health mitigated against him but due to the interest of General Sir Ivor Maxse he was relieved. Maxse had been Inspector General of Training to the British Armies in France in 1918 and he had been impressed by some of Liddell Hart's early writings. In 1919, at the age of 24, he was asked to assist General Dugan (later Sir Winston) in the writing of new tactics manuals for the infantry. Liddell Hart's advocacy of the tank and other revolutionary ideas quickly brought him into collision with the conservative wing of

the British Army and he made more enemies than friends. He narrowly avoided dismissal as a result of the Government's economy drive, and suffered from severe heart trouble in 1921. On the formation of the Royal Tank Corps in 1923 he applied for a transfer to it, but although accepted by the Tanks a re-examination of his medical record led to his being placed on the half pay list in 1924 — a civilian without any skills or professional training to fall back on and insecure in the knowledge that he would be kept on the half-pay list only for a period of five years for his war injury.

Hard up against adversity and with the responsibilities of supporting a wife, Jessie *nee* Strong, and his son Adrian, his ingenuity and persistence triumphed after a period in which he reported tennis and Rugby football for newspapers and in 1925 he became the military correspondent of the *Daily Telegraph*. From then his career did not look back until 1939. He was producing books at the rate of nearly one a year and in 1934, when the *Times* decided to take defence seriously again and to appoint a full time military correspondent, Liddell Hart accepted the offer of this position and left the *Daily Telegraph*. By the mid-1930s he had become not only a national figure but his name was known and respected in military circles the world over. He received some lucrative offers from other countries, notably Germany and the Soviet Union, to advise their armies but he wisely elected to remain in Britain.

In 1937, he entered into a close partnership with the newly appointed War Minister, Mr Leslie Hore-Belisha. In many ways this liaison was a mistake because it led to Liddell Hart acquiring the reputation of a powerful *eminence grise* and earned him the dislike of many senior military men over whose careers Liddell Hart had great influence. This factor helped to preclude him from any position of authority during World War II when he had to sit by in relatively idle frustration in the Lake District while the Germans, using his ideas, made rings around the British who had chosen to ignore him until the last minute. He also suffered somewhat from his association with Hore-Belisha because the latter had aroused the enmity of Winston Churchill through an attack on Churchill's son-in-law, Duncan Sandys. Although Churchill sought Liddell Hart's advice during 1938 and 1939, the relationship between the two was generally a strained one, at times severely strained for neither was particularly tactful when it came to the implementation of his own theories. Throughout the course of the war, Churchill left Liddell Hart

on the outside of great events and this added to feelings of bitterness which had been building up inside him during his struggle to get his ideas adopted in his own country.

However, had Liddell Hart not agreed to advise the reform-bent Hore-Belisha, even less might have been accomplished to make the British Army an effective fighting force before the outbreak of the war. In one sense, Liddell Hart was trapped by the logic of setting himself up as a critic for when he was offered a position from which he could influence policy it would have been hypocrisy to refuse. By mid-1938, the partnership was all but finished. Hore-Belisha did not wish to implement the full Liddell Hart programme and Liddell Hart did not want to be muzzled by a close association with the Government which was espousing appeasement of Hitler and Mussolini.

Liddell Hart's opposition to appeasement also complicated his relations with the *Times* which was endeavouring to keep the Government on a conciliatory course and in 1939 he resigned over his employers' attitude towards the Polish guarantee. Spurred on by a sense of doom he threw himself into a welter of activities, speaking, writing and organizing and even going so far as to give serious consideration to standing for Parliament.

During the 1930s Liddell Hart's marriage began to come under great stress, which resulted in separation in 1938. His second marriage, to Kathleen Nelson, proved more durable and provided him with the constant affection of which he was in great need to sustain his role as a lone and independent thinker. After World War II he took a close interest in the high ranking German prisoners of war who were interned at Drysdale Hall in the Lake District. Amongst these officers were such famous figures as Field Marshals von Rundstedt and von Brauchitsch, men to whom the writings of Liddell Hart were well known. They were only too keenly aware of their own relative friendlessness in the atmosphere of defeat and they assiduously cultivated Liddell Hart's acquaintance. He, of course, was gratified to meet and talk with military leaders who had proved the success of his own ideas and who, in themselves, represented a valuable historical source. The outcome was Liddell Hart's *The Other Side of the Hill*, also known as *The German Generals Talk*. Some critics regarded this book as excessively pro-German and it did not win him any new friends although when viewed from today's perspective alongside other writings which were being published in 1948, its objectivity was of a high order.

His major activities since 1945 have embraced the field of history rather than strategy, although his *Deterrent or Defence*, published in 1960, attracted a wide readership. However, the greater part of his time was put into projects such as *The Tanks*, a two volume history of the Royal Tank Regiment, rated by many as his finest book, his memoirs and a history of the Second World War which was delivered to his publisher, Cassell, shortly before his death and whose publication is expected later this year. He was knighted in the New Year's honours in 1966. Although he was free of the daily deadline of his pre-war journalism he took on so many other tasks that his post-war years were almost as fully occupied. Apart from free-lance journalism and lecturing he kept up a voluminous correspondence which ranged from senior military commanders the world over to statesmen such as Nehru, Tito and Churchill. Once he had achieved eminence his advice was constantly being sought by others who were interested in military history or strategy. In the role of mentor he achieved a mellowness which replaced the bitterness of his earlier years and he was unstinting in the generosity with which he helped young students who were feeling their way into his field, always taking great care in reading and commenting on drafts and in granting free access not only to his library but also to his personal papers.

The question has frequently been raised as to who could succeed Liddell Hart. The answer has probably already been given by the trend of events in the past twenty years which has resulted in a transfer of leadership of the strategic debate from the independent writer and journalist to the teams of analysts supported by the research institutes such as the Rand Corporation, the Hudson Institute and the Brookings Institute in the U.S.A., the Institute for Strategic Studies in London and special departments of universities. This transfer has not been without its critics who feel, *inter alia*, that it has caused a fundamental split between the theorists and the servicemen whereby the former have little understanding of the practical difficulties which face the latter in the implementation of policy. Certainly this problem did not arise when Liddell Hart and Fuller were at the peak of their influence although their very closeness to the British Army created special difficulties in their relationship with former colleagues. However, today no lone thinker can command the resources which are essential for keeping abreast of the world wide debate — the libraries, research funds, secretarial assistance, travel grants and so on — and the greatly increased number of workers in the strategic field by comparison with the 1920s

and 1930s has enabled the formation of small communities of thinkers in which each can add to the other's work. The question of the gap between thinkers and doers remains a complex matter. The most obvious solution, close liaison between the services and the research institutes, and interchange of personnel for short periods has produced some good results, particularly in the U.S.A., although much remains to be done in this regard in Australia. Many research workers are former servicemen themselves but just as many are not. The reverse side of the coin is that while many servicemen take an interest in the defence debate which is carried on in public there are also many who look upon these enterprises with reserve and suspicion. To prevent the widening of the civil-military gap in strategic thinking it will be necessary to take more constructive steps on both sides than to lament the passing of Sir Basil Liddell Hart and the role he fulfilled.

Apart from his intellectual accomplishments, Sir Basil will be remembered for his colourful personality in which the more attractive traits and the less attractive constantly interacted. He coupled charm in manner with elegance in dress, a ready wit with a fund of anecdotes and open hospitality with an excellent table and cellar. His most devoted admirer could not help but be struck with his vanity and desire for adulation. Probably he had this fault to no worse an extent than most of us but it tended to become noticeable earlier in the course of acquaintance with him than is generally the case. No doubt part of the explanation for his concern with the way in which he was viewed by the world derives from the rejection encountered by his ideas, his lack of success in obtaining any position within the establishment from which he could direct the application of these ideas and the personal hostility shown towards him by those who were out of sympathy with his thinking and whose sensitivities he did little to assuage. However, this cannot be the whole rationale — consideration must also be given to a more basic facet of personality which was magnified by the relative loneliness of the role of a prophet who was, for many years at least, without honour in his own country.

This sensitivity was accompanied by a certain innocence, a willingness to believe the best of people and to discount what others had said against them. Perhaps the most notable example of this trait was his reaction to *Lawrence of Arabia* with whom Liddell Hart had a close friendship and of whom he wrote a very sympathetic biography. This is not to say that Lawrence manipulated Liddell Hart because the former

probably believed in his own legend but it now seems that Liddell Hart's biography will be regarded as a book written by one friend about another rather than a strictly objective account. His tendency to believe the words of German generals, whom he knew personally, and to doubt those of Russian generals, whom he did not know, possibly led to some distortion in his thinking about events on the Eastern Front during World War II.

Despite these points on which he may be criticized, the fact remains that Liddell Hart in the course of his life achieved an enormous amount and established a lasting reputation as a military historian and thinker. He wrote thirty-five books and no student of the development of strategy could deny him a place amongst the leading dozen thinkers since Clausewitz. Perhaps his greatest accomplishment was to lead the world in commenting on military affairs during the 1930s and to keep defence studies alive intellectually at a time when the climate for such thinking was particularly unkind. His work during these years will long serve as example to his collective successors. □

The extreme ferocity with which the battles were fought at Gallipoli gives no inkling of the compassion that the opposing soldiers in the front line felt for one another. In the periods of comparative calm which followed May 19 at Anzac, the most bizarre incident occurred. Once a staff officer visiting the front saw with astonishment that a number of Turks were walking about behind their lines in full view of the Australians. He asked, 'Why don't you shoot?' and was answered, 'Well, they're not doing any harm are they? Might as well leave the poor beggars alone.' Later in the campaign there was an old Turk who apparently had been given the job of doing the washing for his platoon. Regularly each day he emerged from his trench and hung out the wet shirts and socks in a line along the parapet, and no Allied soldier would have dreamed of shooting him. The Turks on their side usually withheld their fire from the survivors of wrecked ships, and in the front line at least their prisoners were treated with kindness.

There was a constant traffic of gifts in the trenches, the Turks were throwing over grapes and sweets, the Allied soldiers responding with tinned food and cigarettes. The Turks had no great love for British beef. A note came over one day: 'Bully Beef—*non*. *Envoyez* milk.' It became an accepted practice to wave a 'wash out' to a sniper who missed; there would be the sudden crack of a rifle, the bullet screaming past the Turk's head, then the laugh from the enemy trench, the waving of a spade or a bayonet, and the words in English softly shouted, 'Better luck next time, Tommy.'

—Alan Moorehead, *Gallipoli* (1956)

Proposed Reorganization of Task Force Logistics

*Major P. A. Davison
Royal Australian Corps of Signals*

Introduction

THE logistic problems that faced the Australian Army in the North African and South-West Pacific campaigns during World War II, the problems that have arisen in the conduct of operations in Vietnam, and those that we are likely to face in the future are fundamentally similar:

- The difficulty of moving the maintenance, reserves and operating stocks needed in battle. Surface movement can be restricted because of the terrain or enemy action. Air movement can be limited by the weather, lack of engineer resources for the construction of airstrips or landing sites, or the mere lack of sufficient aircraft.
- 1 ATF in 1969 is perhaps the 'exception that proves the rule' that operational planners so often fail to recognize the logistic shortcomings and to give full emphasis to administration. In developing contingency plans to meet various eventualities of war, however, the degree of administrative support needed must be recognized well in advance, and we should ensure that we are not dependent on our allies for the movement and maintenance of our forces. From our own national resources we should be able to ensure the strategic and tactical independence of our army.

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- The need for the logistic system to have maximum flexibility in order to cope with unforeseen events, and to meet the need for rapid re-deployment and re-grouping of combat forces. This, in turn, demands foresight and intelligent anticipation of future trends.

In recent years, much has been written about the need for the Australian Army to adopt a logistic system compatible with that of our most likely future major ally, the US, rather than continuing to cling to the traditional British system. The deployment of 1 ATF in Vietnam, often working and fighting side-by-side with US forces, has presented us with a unique opportunity to examine our logistic system from a practical, rather than theoretical viewpoint, compare it with that of the US Army and see if, in fact, any increase in efficiency can be achieved.

Air transport support requirements are already being examined separately and therefore are not discussed in this paper.

Aim

The aim of this paper is to examine the practical difficulties inherent in our present logistics organization and propose a means of overcoming them.

OPERATIONAL AND LOGISTIC PRACTICES IN SOUTH VIETNAM

Grouping and Deployment

The purpose of this paper is not to propose a new concept for the division: however, it is postulated that the flexibility of grouping of combat units envisaged for the division is unwarranted in the light of Australia's likely future military commitments. In all except general war, it is likely that specifically-tailored task forces will be deployed in such widely separate areas that each will require a fixed grouping, depending on the enemy, allied forces, terrain and area of operations. Hence, the logistic organization needed to support such task forces can be similarly fixed at task force level. By so doing, we will not only produce a more practicable and realistic organization, but also remove many of the restrictions and disadvantages which are inherent in service units at task force level because of the attempt to achieve the measure

of flexibility of grouping required of the tropical warfare division. In 1 ATF, the services units other than the field ambulance and field workshop, are grouped into an *ad hoc* organization misnamed 'the TFMA'. Its composition, shown below, illustrates how at task force level our present divisional organization becomes fragmented and unwieldy:

- a. Under command:
 - (1) HQ 26 Coy RAASC (restricted).
 - (2) 85 Tpt Pl RAASC (32 task vehicles).
 - (3) Det 52 Sup Pl (for supplies).
 - (4) Elm Det 25 Sup Pl (for ammunition).
- b. Under operational control and under command for local administration:
 - (1) Det 8 Pet Pl.
 - (2) Elm Det 176 AD Coy.
 - (3) Elm Det 1 Div ST Wksp.
- c. Under command for local administration:
 - (1) Det 11 MC Gp RAE.
 - (2) Elm Det 1 Comm Z Postal Unit.
 - (3) 1 OFP.
 - (4) Det 1 AFV Cash Office.
 - (5) Det 2 Aust Fd Canteens Unit.

Organizational Problems

In spite of the experience gained from the war in South Vietnam, it is no less difficult to achieve the ideal in terms of flexible unit and sub-unit organizations and we must continue to have the capacity to change these to suit the operational requirements. Examples of recent necessary changes in 1 ATF are:

- Increase in the air despatch element to cope with the concurrent resupply by air of a battalion and a US land clearing company.
- Increase in the holdings of 5-ton GS Dump Vehicles to cope with an increase in 1 ATF engineer activities and road resupply.
- Centralization of second line radio and radar repair under the auspices of the Det 131 Div Loc Bty Wksp.

- Decrease of unit cargo vehicles to a level commensurate with unit needs and efficient use of transport.
- The creation of a composite detachment from 106 Fd Wksp to provide second line support for the forward deployment of a substantial force of all arms.

However, the implementation of necessary and constant changes within the logistic organization of the task force creates disproportionate difficulties because:

- a. The organization by services inhibits the centralization of functions common to a number of units. For example:
 - (1) A central pooling of the forklift capacity would permit more economic employment and maintenance.
 - (2) Domestic transport could be reduced, as could the need for constant formal handovers of such transport within, say, the TFMA.
 - (3) RAEME second line support is provided by no less than six different units and thus there has to be constant adjustments as to responsibility for second line repairs and cross movement of manpower and equipment.
- b. The fractionalized system of command and control creates delays and reduces efficiency. For example:
 - (1) The task force commander, theoretically, has no less than twelve services unit commanders directly responsible to him for the exercise of their command functions. Necessarily and wrongly, therefore, the responsible staff officer has to operate partially as a commander in directing the activities of so many different and yet complementary units.
 - (2) The commander and staff are dependent for immediate advice on the service adviser and yet the senior and probably most experienced of the services officers are in command of their units and are often unavailable to provide the technical or specialized information which they alone possess.
 - (3) Command or operational control of certain elements and detachments is in some instances the prerogative of a unit or sub-unit commander who, in turn, is responsible

to a rear headquarters commander. Whilst some circumstances might demand such an arrangement, they should not be the norm in an independent, or separate, task force.

- (4) If the issue of supplies, stores and equipment were functionalized, there would be a significant reduction in the present workload on the staff for the co-ordination of the handling and movement of:
- RAASC supplies and ammunition.
 - Ordnance supplied vehicles, stores and equipment.
 - Engineer stores.
 - Medical and dental stores.
 - Bath detachments.
 - Water.
 - Salvage.
 - Laundry.

At this point it would be appropriate to briefly mention other problem areas which have been highlighted in the present operational environment:

- a. The lack of a viable headquarters to carry out the full functions necessary for command of the task force maintenance area as envisaged in our doctrine, which is, that it will contain those service units needed to receive, hold and dispatch maintenance requirements. In addition, it may include:
- A field ambulance.
 - A field workshop or detachment.
 - Transport which is not required or cannot be moved forward to units.
- b. The difficulty of achieving a satisfactory scaling for 1 OFP and indeed for 2 AOD, emphasises the impracticability of our present divisional ordnance organization; this envisages three ordnance field parks providing the total ordnance support for the division which places emphasis on flexibility in grouping and deployment. On this precept, once a task force grouping changes, so its ordnance field park scaling would have to change. For a division in general war the best solution to the problem of scalings and mobility might be the formation of an ordnance

company with the ability to provide task force detachments, scaled as required for particular operations. The present situation in 1 ATF calls for little change except the closer alliance of 1 OFP with the supplies and transport organization, so as to achieve greater economy in transport and increased speed of supply of ordnance items.

- c. The field workshop is not designed with the capability to provide an advanced workshop detachment and yet the operational situation has been such that on two occasions one has had to be created. The tactical requirement to split the task force should be regarded realistically and the capacity to provide an advanced workshop detachment should be incorporated in the organization.
- d. There is a need for rationalization of the present RAEME organization so as to provide more common-user facilities and eliminate some of the present specialist workshops and light aid detachments. Such a centralization would provide both increased efficiency in the use of existing facilities and increased capability to carry out forward repair.

US ARMY COMPARABLE ORGANIZATIONS

Divisional Support Command

The divisional G4 staff carry out the normal staff functions of planning, liaison and execution of the commander's policy. However, the division support command commander is directly responsible for:

- Advising the divisional commander on all logistic support matters.
- Supervising logistic operations.
- Commanding and controlling the divisional maintenance area and lines of communication.

Division support command contains, principally, a medical battalion, a supplies and transport battalion and a maintenance battalion. Other services provided are reinforcement training, map production and distribution, bathing facilities, defence stores, salvage, graves registration, aeromedical evacuation organization, airfield control organizations, military police, post exchange facilities, finance and audit, movement

control. Logistic support of the division is carried out in one of the following two ways:

- a. By locating, in forward areas, companies and detachments which are responsible to their unit commanders in the divisional maintenance area for effecting the logistic support of the particular combat group and to an 'OIC Forward', who represents the division support command commander and who co-ordinates the logistic support for the combat group concerned.
- b. By creating a composite support battalion for a brigade-size force operating independently.

Separate Brigades

The US 'separate' brigade has an organic support battalion which comprises a medical company, supplies and transport company, and a maintenance company and the other elements providing similar type support to the brigade, as does the support command to the division.

The staff of the separate brigade support battalion generally comprises:

- S1. He deals with personnel administration and personnel services, somewhat similarly as does an Australian unit adjutant.
- S3. His nearest equivalent in the Australian Army is the infantry battalion operations officer. He is the battalion commander's principal staff officer through whom all logistic operations are directed. He also deals with S2 (intelligence) aspects.
- S4. Somewhat similar to an infantry battalion second-in-command, the S4 is responsible for the overall Q maintenance and support of the battalion.

Other Aspects

Matters common to both division and brigade levels are:

- a. The supplies and transport battalion/company provides all types of maintenance requirements, except that:
 - (1) Medical and dental stores are provided through the medical battalion/company.
 - (2) Spare parts are provided through the maintenance battalion/company.

- b. There is an ammunition officer responsible for supply rates and the technical aspects of ammunition.
- c. There is a transport officer responsible for:
 - (1) Movement control.
 - (2) Highway traffic control.
 - (3) Transshipment points.
 - (4) Liaison with air transport support.
- d. 'Super Contact Teams' constantly visit fire support bases and other detached groups to provide a wide series of miscellaneous services, including PX, direct exchange clothing, bathing facilities, medical and dental services, money orders, Red Cross, barbering, repair and maintenance of weapons.

CONCLUSION

The tropical warfare division, in its search for maximum flexibility of grouping and employment, results in such a fractionalization of effort at independent task force level that, indeed, the services units are inflexible and need to be constantly adjusted to cope with operational requirements. Our needs would probably be better met by a fixed task force organization, but specially tailored for its role and, in that situation, logistic support could be more effectively and efficiently provided by a composite task force logistics organization. The task force commander would then have one commander responsible to him for logistic support, just as, for example, the commander of the artillery regiment is responsible to him for fire support.

Units, sub-units, detachments and elements of detachments, each with their own commanders, either within the task force or elsewhere, each responsible through devious chains of command and staff control to logistic functionaries to the rear, would be better reorganized on a functional basis to serve the task force needs. The activities involved are, broadly:

- Collecting, holding and treating and evacuating casualties.
- Receiving, holding and issuing, by air and road transport, the ammunition and supplies, 'ordnance' supplied items, 'engineer' supplied items, water, canteen goods and other miscellaneous items needed by the formation.

- Maintaining, repairing and recovering vehicles and equipment.

At task force headquarters, the need for the logistic staff to exercise detailed control of the activities of the services units, either direct or through the services advisers, would be removed. Instead, this properly would be carried out by the support battalion commander, through his own staff, to the appropriate company, etc. commanders. Services advisers would no longer be required; however, there would be a need for a task force transport officer, with a small staff, to co-ordinate road convoys and carry out the detailed staff aspects of air movement.

The support battalion commander with his headquarters would relieve the deputy commander and staff of task force headquarters of many of the detailed problems which arise in the day-to-day running of the base area, viz:

- Area defence, including local patrolling within a base AO.
- Co-ordination of resupply to unit echelons.
- Co-ordination of protection of road convoys.
- Co-ordination of engineer tasks.
- Military police activities.
- Safety, including base fire brigade.
- Control of water points and water distribution.
- Laundry contracts.
- Allocation and control of ranges.
- Maintaining stock levels.
- Area planning and construction of buildings.

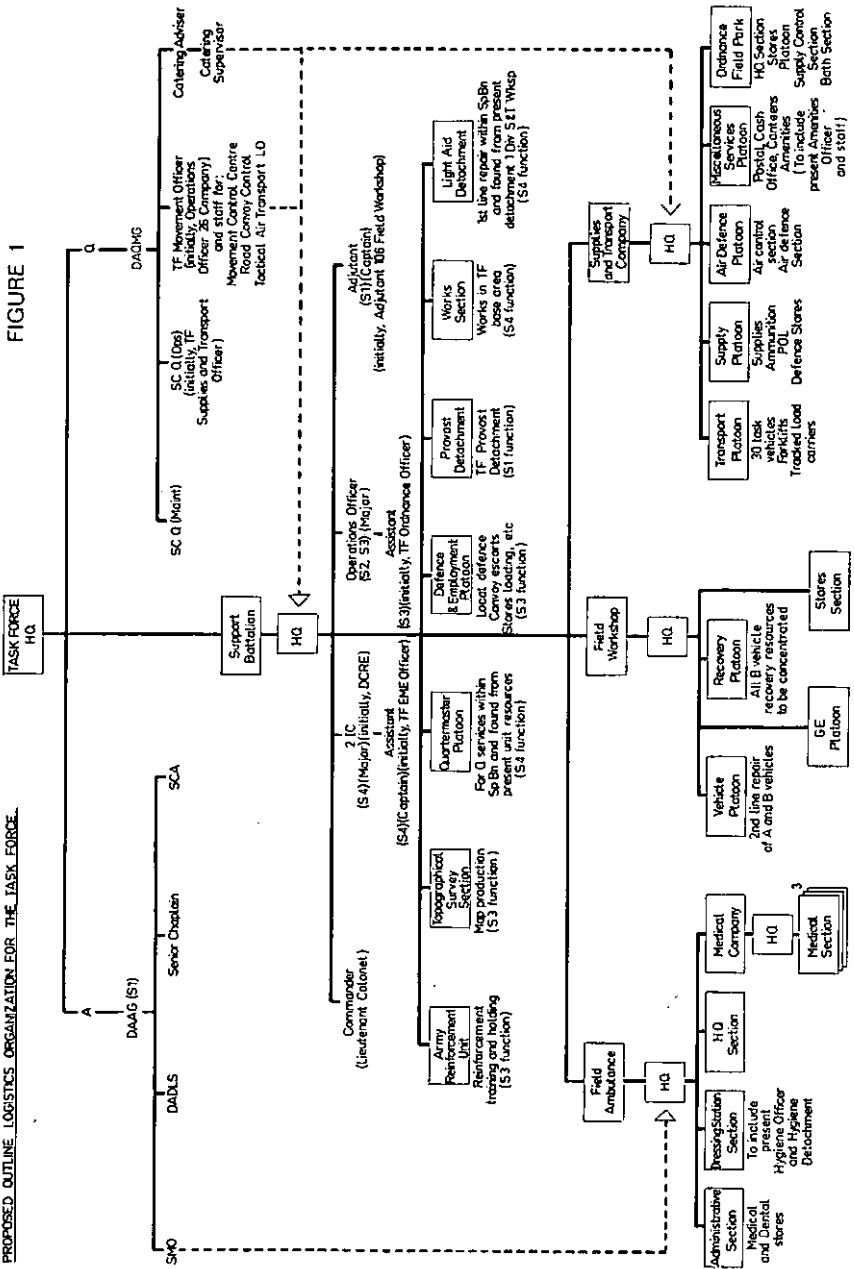
RECOMMENDATIONS

A proposed outline organization of logistic staff and units for 1 ATF is shown in Figure 1. Some of the more important aspects of this organization are explained below.

The recommended organization in no way alters the need for the normal AQ staff functions of planning, execution of the commander's policy, co-operation with other staff branches and so on. However, the scope is considerably reduced by virtue of the logistic units being under command of a subordinate headquarters with its own staff.

FIGURE 1

PROPOSED OUTLINE LOGISTICS ORGANIZATION FOR THE TASK FORCE



Certain specialist service representatives would remain at task force headquarters in order to provide advice to the commander and staff and, in the case of the SMO, specialist staff supervision outside the province of the support battalion commander. Details are shown in Figure 1.

Necessarily, such a reorganization on a functional, rather than a services basis, would have to be reflected in the organizations of headquarters and units directly supporting the task force. Initially, however, there would appear to be no good reason why any reorganization need take place within the ASA. To ensure that, in the transitional phase, there are minimal problems with regard to services responsibilities and pending revision of the procedures of rear services, it is proposed that:

- TF ST officer takes over as TF movement officer (he will require a small staff to deal with the control of both air and road movement agencies).
- TF ordnance officer takes over as Sp Bn Asst S3.
- TF EME officer takes over as Sp Bn Asst S4.

Although reinforcement training and topographical survey are traditionally G functions, they are functions performed for the 'support' of the task force and could, quite properly, come under the jurisdiction of the support battalion commander. As a corollary of this, the move of the Works Section and the D and E platoon will reduce the administrative burden on HQ Coy 1 ATF, so that it becomes a viable unit, which at present it is not.

As can be seen from the annotations in Figure 1, the reorganization would involve an overall increase in manpower of only 15 — as follows:

- Comd, Sp Bn (Lt Col).
- Ops Offr, Sp Bn (Maj).
- 2IC, ST Coy (Capt).
- Sp Bn HQ other rank strength (12). □

MONTHLY AWARD

The Board of Review has awarded the \$10 prize for the best original article published in the January 1970 issue of the journal to Major I. S. A. Power for his contribution 'Co-ordination of the use of Airspace'.

The Proper Leader: Two Views

*Lieutenant Colonel Fielding L. Greaves,
United States Army, Retired*

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A reflective reading of history will show that no man ever rose to military greatness who could not convince his troops that he put them first, above all else.

—General Maxwell D. Taylor, USA.

'OF all the Persians who lived after Cyrus the Great, he was the most like a king and the most deserving of an empire.' So said Xenophon of the younger Cyrus, unsuccessful contender for the Persian throne, who was slain at the battle of Cunaxa in 403 B.C.

Xenophon, himself no mean leader, greatly admired Cyrus and in fact had hoped to serve in his court, a hope dashed when Cyrus was killed. In his account of the Persian expedition of the Greek mercenaries serving under Cyrus, Xenophon devoted several pages to describing the character and leadership qualities of the Persian commander and would-be king. In the belief that one great commander's evaluation of another whom he admired is worthy of note by present day students of leadership, some of Xenophon's comments on Cyrus are set forth below:

'In his early life, when he was still a child being brought up with his brother, and the other children, he was regarded as the best of them all in every way. All the children of Persian nobles are brought up at the court, and there a child can pick up many lessons in good behaviour The boys see and hear some people being honoured by the king

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and others being dismissed in disgrace, and so from their childhood they learn how to command and how to obey. Here, at the court, Cyrus was considered, first, to be the best behaved of his contemporaries and more willing even than his inferiors to listen to those older than himself; and then he was remarkable for his fondness for horses and being able to manage them extremely well. In the soldierly arts also of archery and javelin throwing they judged him to be the most eager to learn and most willing to practise them. When he got to the age for hunting, he was most enthusiastic about it, and only too ready to take risks in his encounters with wild animals

'When he was sent down to the coast by his father as satrap of Lydia and Great Phrygia and Cappadocia, and had been declared commander-in-chief of all who are bound to muster in the plain of Castolus, the first thing he did was to make it clear that in any league or agreement or undertaking that he made he attached the utmost importance to keeping his word. The cities which were in his command trusted him and so did the men. And the enemies he had were confident that once Cyrus had signed a treaty with them nothing would happen to them contrary to the terms of the treaty

'If anyone did him a good or an evil turn, he evidently aimed at going one better. Some people used to refer to an habitual prayer of his, that he might live long enough to be able to repay with interest both those who had helped him and those who had injured him

'No one, however, could say that he allowed criminals and evil-doers to mock his authority. On the contrary, his punishments were exceptionally severe, and along the more frequented roads one often saw people who had been blinded or had their feet or hands cut off. The result was that in Cyrus's province anyone, whether Greek or native, who was doing no harm could travel without fear wherever he liked and could take with him whatever he wanted.

'Of course it is well known that he treated with exceptional distinction all those who showed ability for war. In his first war . . . he made those whom he saw willing to risk their lives governors over the territory which he conquered; and afterwards gave them other honours and rewards, making it clear that the brave were going to be the most prosperous while cowards only deserved to be their slaves. Consequently there was never any lack of people who were willing to risk their lives when they thought that Cyrus would get to know of it.

'As for justice, he made it his supreme aim to see that those who really wanted to live in accordance with its standards became richer than those who wanted to profit by transgressing them. It followed from this that not only were his affairs in general conducted justly, but he enjoyed the services of an army that really was an army. Generals and captains who crossed the sea to take service under him as mercenaries knew that to do Cyrus good service paid better than any monthly wage. Indeed, whenever anyone carried out effectively a job which he had assigned, he never allowed his good work to go unrewarded. Consequently it was said that Cyrus got the best officers for any kind of job.

'When he saw that a man was a capable administrator, acting on just principles, improving the land under his control and making it bring in profit, he never took his post away from him, but always gave him additional responsibility. The result was that his administrators did their work cheerfully and made money confidently. Cyrus was the last person whom they kept in the dark about the possessions, since he showed no envy for those who became rich openly, but, on the contrary, tried to make use of the wealth of people who attempted to conceal what they had.

'Everyone agrees that he was absolutely remarkable for doing services to those whom he made friends of and knew to be true to him and considered able to help him in doing whatever job was on hand. He thought that the reason he needed friends was to have people to help him, and he applied exactly the same principle to others, trying to be of the utmost service to his friends whenever he knew that any of them wanted anything. I suppose that he received more presents than any other single individual, and this for a variety of reasons. But more than anyone else he shared them with his friends, always considering what each individual was like and what, to his knowledge, he needed most There is, no doubt, nothing surprising in the fact that he surpassed his friends in doing them great services, since he had the greater power to do so. What seems to me more admirable than this is the fact that he outdid them in ordinary consideration and in the anxiety to give pleasure

'Whenever he went on an official journey, and was likely to be seen by great numbers of people, he used to call his friends to him and engage them in serious conversation, so that he might show what men he honoured. My own opinion, therefore, based on what I have heard,

is that there has never been anyone, Greek or foreigner, more generally beloved. And an additional proof of this is in the fact that, although Cyrus was a subject, no one deserted him and went over to the king, except that Orontas tried to do so; but in his case he soon found that the man whom he thought reliable was more of a friend to Cyrus than to him. On the other hand there were many who left the king and came over to Cyrus, when the war broke out between the two, and these also were people who had been particularly favoured by the king What happened at the time of his death is also a strong proof not only of his own courage but of his ability to pick out accurately people who were reliable, devoted and steadfast. For when he died every one of his friends and table-companions died fighting for him, except Ariaeus, who had been posted on the left wing in command of the cavalry'

Such was the picture Xenophon painted of the man whom he considered to be in every sense a proper leader, in this case a top ranking leader, chief commander and aspiring king.

For a view of the proper leader in the lower levels of command, we turn to a later time. It was a time of hardship, of great adversity, 2,000 years after Cyrus and on the other side of the world, where a fledgling army, sadly needing organization and training, was freezing in the snows of Valley Forge. At the moment when he was most needed, a capable man appeared at Valley Forge to provide the required training and organization, the necessary discipline which any army must have and which this army, with fallen morale, inadequate supplies, insufficient winter clothing, unsanitary camp facilities and generally grim future outlook, most desperately needed.

His name was Frederick William Augustus Henry Ferdinand von Steuben, a Prussian army officer. Appointed inspector by General George Washington, von Steuben immediately set to work training the troops in such basics as the manual of arms, close order drill, ordinary company administration and field sanitation measures. He promulgated some instructions for use at Valley Forge which were later published in 1779 as *Regulations for the Order and Discipline of the Troops of the United States*, the first standard set of regulations for the U.S. Army and the official manual until 1812.

Included in these *Regulations* was guidance for junior leaders, captains, lieutenants and ensigns, the first official American leadership instructions. These instructions for the proper leader are reproduced as follows:

INSTRUCTIONS FOR THE CAPTAIN

A Captain cannot be too careful of the company the state has committed to his charge. He must pay the greatest attention to the health of his men, their discipline, arms, accoutrements, ammunition, clothes and necessaries.

His first object should be to gain the love of his men by treating them with every possible kindness and humanity, inquiring into their complaints, and when well founded, seeing them redressed. He should know every man of his company by name and character. He should often visit those who are sick, speak tenderly to them, see that the public provision, whether of medicine or diet, is duly administered, and procure them besides such comforts and conveniences as are in his power. The attachment that arises from this kind of attention to the sick and wounded is almost inconceivable; it will, moreover, be the means of preserving the lives of many valuable men.

INSTRUCTIONS FOR THE LIEUTENANT

He should endeavour to gain the love of his men, by his attention to everything which may contribute to their health and convenience. He should often visit them at different hours; inspect into their manner of living; see that their provisions are good and well cooked, and as far as possible oblige them to take their meals at regulated hours. He should pay attention to their complaints, and when well founded, endeavour to get them redressed; but to discourage them from complaining on every frivolous occasion.

INSTRUCTIONS FOR THE ENSIGN

The ensign is in a particular manner charged with the cleanliness of the men, to which he must pay the greatest attention.

When the company parades, and whilst the captain and lieutenant are examining the arms and accoutrements, the ensign must inspect the dress of the soldiers, observing whether they are clean, and everything about them in the best order possible, and duly noticing any who in these respects are deficient.

He must be very attentive to the conduct of the non-commissioned officers, observing that they do their duty with the greatest exactness; that they support a proper authority, and at the same time do not ill-treat the men through any pique or resentment.

Such were the views of Baron von Steuben on the duties of the proper leader. It is particularly interesting that these two men, Xenophon and Baron von Steuben, from two widely diverse cultures and separated by two millenia in time, should both consider kindness and humanity such important attributes for the leader, should both emphasize the importance of the leader being beloved by his subordinates. As to Cyrus, 'he was absolutely remarkable for doing services to those whom he made friends of . . . he shared with his friends . . . more admirable than this is the fact that he outdid them in ordinary consideration . . . there has never been anyone, Greek or foreigner, more generally beloved . . . no one deserted him . . . every one of his friends and table-companions died fighting for him . . .' And von

Steuben's instructions: the 'first object' of the captain 'should be to gain the love of his men by treating them with every possible kindness and humanity' while the lieutenant 'should endeavour to gain the love of his men, by his attention to everything which may contribute to their health and convenience.'

Support for this emphasis on benevolent and persuasive leadership, as opposed to the authoritarian approach, comes from what may be regarded as an unexpected quarter. In discussing the value of castles and fortresses, Niccolo Machiavelli wrote in 1513 in *The Prince* that, 'The best fortress is to be found in the love of the people.' Later, in *The Discourses*, Machiavelli contrasted the fortunes of two Roman commanders: 'Appius, naturally cruel and rude in his mode of commanding, was badly obeyed by his troops . . . Quintius, on the other hand, being of a gentle and humane disposition, was cheerfully obeyed by his men, and returned to Rome victorious; whence it would seem that a multitude is more easily governed by humanity and gentleness than by haughtiness and cruelty . . .' (See 'Machiavellian Views on Leadership' in January 1970 *Military Review*.)

Other desirable leadership qualities or traits may be gleaned from the words of Xenophon and von Steuben. Both, for example, touch on the downward loyalty to subordinates so necessary in the successful leader, Xenophon by inference, and von Steuben explicitly in the references to redress of grievances and the protection of the men from ill-treatment based on pique or resentment. Cyrus possessed in large measure, if we can believe Xenophon's appraisal, those qualities of personal courage, integrity, fairness, and the ability to inspire in his subordinates affection, loyalty and diligent attention to duty. These qualities in a leader are no less important today than they were in the time of Xenophon and Cyrus.

Such, then, are two views of the Proper Leader: a Greek's 2,000-year old evaluation of a Persian high commander whom he admired, and a Prussian's 200-year old leadership guidance for company grade officers of the newborn American army. Though so greatly separated in time and space, in cultural heritage and national origin, these views are united by a common bond, the recognition of a primary leadership principle: the overriding importance of the leader's just and humane consideration of his subordinates and his diligent attention to their well-being. This principle is as valid today as it was 200 or 2,000 years ago. □