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$10 will be paid to the author of the best article published in each issue. In addition, annual prizes of $60 and $20 respectively will be awarded to the authors gaining first and second places in the year.

Cover: Detail from the Vietnam diorama recently installed at the Australian War Memorial. Designed and constructed by members of the Directorate of Military Training at AHQ Canberra; troops, villagers, helicopters and a Viet Cong tunnel system are featured in considerable detail.

ARMY JOURNAL

A periodical review of military literature

No. 253, JUNE 1970

Contents

(Australian War Memorial)

Members of the 2/33rd Australian Infantry Battalion with a French machine-gun captured at Fort Khiam, Syria after heavy fighting in June 1941. The soldiers on the left and right of the photograph lost their lives during the fighting at Lae in New Guinea in September 1943.

Vietnam—The Unwinnable War?

Major D. K. Atkinson
Royal Australian Infantry

ONE of the most striking things about this type of war is how loose and varied opinions can be on the definition of such commonly used words as 'win', 'peace' and 'war'. 'Peace' means one thing to us and another to a Communist. To a Communist, peace can only be achieved in a Communist state. Australian soldiers are fighting a war in South Vietnam, yet Australia is not at war. The same lack of definition applies to the word 'win'. If it means the complete removal of Communists and Communist influence from South Vietnam then the war is probably 'unwinnable'. On the other hand, if winning means restoring reasonable stability and government control throughout the country, the ability to hold free elections and, in short, restoring the five freedoms, then the war can be won.

It is the lack of definition of terms and a lack of public education in the United States and in Australia which may prevent us from winning. Peace is an attractive word to everyone but does the word mean the same thing to a Communist Party member and to the well-meaning clergyman marching beside him in the same demonstration? It is in this field that national mass communications media can be of the greatest assistance, or do the most harm. At the moment, through either

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Major Atkinson graduated from RMC, Duntroon in 1956 and after a series of regimental postings with RAR and PIR was posted to the Infantry Centre in 1963. He remained at the Centre for four years as Senior Instructor Signals and Senior Instructor Weapons. In 1967-68 he served as Operations Officer with 7 RAR in Vietnam. After a short period at HQ Northern Command he was posted to the Royal Military College of Science at Shrivenham. At present he is attending the Australian Staff College at Queenscliff.

During his period at Shrivenham he was frequently asked a wide variety of questions on the war in Vietnam. The interest shown in the war and pressure from the editor of the RMCS Journal for an article prompted Major Atkinson to produce one in the form of answers to some of the more common questions. This article first appeared in the RMCS Journal 1969.

deliberate editorial policy, ignorance, or a plain desire to make money, the press inhibits our capacity to win.

An example of distorted reporting was the Viet Cong Tet offensive in January and February 1968. The majority of enemy objectives were known and allied forces were redeployed to meet the threat approximately one week prior to the offensive. The 1st Australian Task Force moved from its normal base area in Phuoc Tuy province to cover approaches to Bien Hoa approximately 100 kilometres away. The offensive was a military disaster for the North Vietnamese Army and the Viet Cong. Returning from the operation after three weeks we had our first opportunity to read the world press. There was no doubt that by incompetent, inaccurate and hysterical reporting we suffered a propaganda defeat. A typical example of the irresponsibility of the press was a front page headline in a Melbourne paper — 'Australian Battalion Wiped Out.' The three paragraph report gave details of a supposed action in which 7 RAR had been lost. The last sentence admitted that the report was unconfirmed. In fact, the battalion had five men killed.

Yes, the unwinnable war can be won but it will take time. We must not let the ignorance of politicians and newspapers pressure us into a quick victory philosophy. There is no such thing as a quick victory. Victory cannot be bought by more men and more firepower. The enemy must be ferreted out from his hiding places and destroyed. The population must gain confidence in the ability of their government to protect them. Civic action programmes must improve the living standards of the people. The ultimate victory is the winning of hearts and minds. This takes time. Brigadier S. C. Graham, DSO, OBE, MC, who commanded the 1st Australian Task Force in Vietnam in 1967, made this comment on patience:

> This is vital from the national to the section level and I would rate it as the first principle of revolutionary warfare. In fact, the Communist concept is based on the fact that the democracies cannot stand a long-drawn-out war. By its very nature this sort of war can be lost quickly, but it cannot be won quickly.

Are there any indications that the allies are succeeding in Vietnam?

In previous wars one could conveniently tell whether you were winning or losing by whether you were gaining or losing ground. Vietnam is a war with no fronts and flanks. Ground is of little significance as the enemy are not prepared to fight to hold ground—in fact they are

not prepared to fight at all unless they can win. The tremendous resources of firepower available to all allied units are useless until a target can be located. Even then the enemy frequently breaks contact before the supporting fire can be fully and effectively developed. The frequent moan of the newcomer is 'if only they would stand and fight'.

Because the occupation of ground as a means of assessing results is no longer valid, a new means has evolved. The most obvious method is to compare the numbers killed by each side. It has its limitations but the body count is nonetheless a reasonable method of comparing military results. As is now well known, until a Senate Committee enquiry, the body count figures were highly suspect. Now, however, if anything the figures are conservative. Although body count figures do not tell the whole story, they are a fair indication that militarily the North Vietnamese Army is being consistently defeated.

Although the body count and the general statistics of military victory are the most frequently quoted they are not the really significant figures. Just killing enemy is not the aim. The aim is to win hearts and minds. The statistics in this field are the important ones. Possibly the most hopeful indication of eventual victory was the last election. In spite of threats of bomb attacks and other forms of terror a greater percentage of citizens of South Vietnam voted in their national elections than do Britons and Americans in their general elections. The statistics that matter are such things as food production, roads open for civilian traffic, building construction, etc. These are the things that measure the degree of security in the country, and these figures are improving.

The Americans are spending a great deal on their military effort in Vietnam. Would it not be better to spend this money on Civil Aid?

Of course it would. It would contribute enormously to keeping Communism out of South-East Asia. Happy, healthy people with good incomes are not prone to Communist influence. Unfortunately, the Viet Cong do not subscribe to keeping Communism out of South-East Asia. Schools, hospitals, roads and bridges provided by the government lessen the Viet Cong influence on the people and are ruthlessly destroyed. Village headmen and teachers are invariably top on assassination lists. Civil aid projects are attacked and the plant and equipment destroyed. The United States already spends a great deal on Civil Aid to the South Vietnamese. It is an unfortunate fact of life though that any progress in this sphere can only take place in a secure environment maintained by a strong military presence.

In Malaya much emphasis was placed on food resources and population control. Is this done in Vietnam?

There is a great tendency in everyone's mind to compare Vietnam with Malaya. This is fair enough provided that two things are borne in mind. First, the scale of enemy in Vietnam is a couple of orders of magnitude greater than was the case in Malaya. In Malaya one talked of enemy platoons, in Vietnam one talks of regiments. Secondly, Malaya did not have a common border with a Communist power. This meant that there was no continuous stream of arms, ammunition and regular troops pouring into the country. But, getting back to the question, the simple answer is no.

During the Diem regime a system of strategic hamlets was attempted. Large areas were resettled and the villages centralized and defended. However, it takes a lot of defences to beat off regimental size attacks. After a few hamlets had been overrun and the inhabitants massacred the government found it increasingly difficult to persuade isolated farmers that they would be safer in a strategic hamlet. Smaller scale projects have been more successful, including an Australian operation when the inhabitants of Slope 30, a well-known Viet Cong logistic complex, were resettled within mortar range of the Task Force. Even here, political assassinations were fairly common, although the village has not been attacked. Now, with greater stability in the country and an effective South Vietnamese Army, larger scale resettlement programmes should be possible.

Curfews and identity cards are of course used but there is no adequate check of the movement of people. Most of the Viet Cong involved in attacks inside Saigon get there by bus. The same applies to food resources control. I was on the first attempt made by the Australians to do something about this in the local village of Hoa Long. A normal cordon and search operation was mounted but the emphasis was to be placed on rice. An estimate was made that one four-gallon drum of rice per head was a fair figure to hold. Any excess was to be centralized and a receipt given. By 1000 hours we were in utter confusion, for in that village of 6,000 people there was over 600 tons of rice and we did not have the resources to shift it. A great deal of this rice was known to be going to the Viet Cong. Food control is one thing that we could really exploit to deal a body blow to the enemy.

We hear of company size patrols. Why are they so big?

Most of the patrol time in Vietnam is just jungle bashing with little sign of any enemy. Contacts, when they occur, are usually fleeting with only a small number of enemy involved. In this respect it is just like Malaya. The difference is that every now and then you catch a tiger by the tail. The well-known battle of Long Tan with D Company 6 RAR is one example. Another, which I know better, was the Suoi Chou Pha battle of A Company 7 RAR.

7 RAR was conducting an operation against suspected areas occupied by the Chou Duc district company. This group of enemy were even better than most at running away to fight another day. The point platoon had just crossed a river when the scout reported a track that had been used in the last few minutes. The platoon commander immediately set up a linear ambush which was sprung a few minutes later by two Viet Cong. They were killed and one section of the platoon swept through to police the ambush area. As they reached the left flank of the ambush they came under fire. Because of the river the only course open to the platoon commander was to hook around the right flank with the remainder of his platoon. This he did, but immediately came under heavy automatic fire.

At this time the company commander, who had crossed the river with his second platoon, was delighted. Another platoon around the right flank should be the clincher. If he moved fast, *exeunt* the Chou Duc district company. The second platoon moved to find the enemy's flank and turn it. They did not. There were even more enemy there and the second platoon also came under heavy fire. It was obvious now that this was not the Chou Duc. It was also clear that the whole battle was in a rather precarious balance.

The battle in fact lasted about four hours. It was supported by field and medium artillery, armed helicopters and sortie after sortie of fighter ground attack aircraft. Finally the enemy withdrew. A month or two later a Viet Cong prisoner described having been in this action. The company had run into a battalion of 274 Regiment North Vietnamese Army. The prisoner said that his battalion had suffered heavy casualties. The official score was five Viet Cong killed in action.

Harking back to the Tet offensive, if a reasonable degree of control exists in the areas you have won, how can the enemy mount such a spectacular series of attacks?

The simplest way to answer this is to use an analogy. The police force maintains a reasonable level of law and order in London. One

could say that they are generally winning the war against crime. However, if the underworld got together and decided to hit every major bank in London simultaneously then they could certainly embarrass the police. They might even manage to get into two or three banks. But this is not the sort of thing they could do every day. It takes months of planning and co-ordination to achieve. I don't think that their ability to do this in any way reflects any shortcomings in the police force, particularly if the bandits didn't manage to get any real money.

There is no doubt that the Tet offensive was a deliberate effort to topple the government of South Vietnam. The people of South Vietnam were expected to rise in popular support of the revolution. The Army of the Republic of South Vietnam were expected to offer little or no resistance. Neither of these two critical events occurred; further proof that slowly but surely we are winning the hearts and minds of the people.

Did you find the South Vietnamese Army to be of little military value?

No. A few years ago, just before the Americans entered the war, this may have been true. Morale was fairly low and after several years of war the fatality rate amongst junior leaders was beginning to show. Now, however, they are a viable fighting force. All the advisers I have spoken to speak highly of them. Leadership in the lower grades is still a little shaky and years of infiltration by Communists creates security problems. Nonetheless they fight bravely, particularly in a defensive battle, and their morale is high. They were a major factor in the utter failure of the 1968 Tet offensive. Instead of throwing down their arms they fought with dogged determination all over the country.

One of the first Viet Cong acts in the attack on Saigon was the ruthless massacre of the families of South Vietnamese soldiers in a barracks there. Presumably this act of terrorism was designed to further destroy the morale of the army. I saw many photographs of buildings full of slaughtered women and children; of soldiers crying over the dead babies in their arms. I didn't see any of these pictures published in the national press. What I did see was the photograph of the Police Chief summarily executing a Viet Cong. It was not a nice picture and was extensively used in anti-war propaganda. But what that picture did show was the hate, the fury, the ruthless determination of these people to rid their country of the terrorists, stand-over men and murderers that are the Viet Cong. We are proud to be helping them. □

More Power to Our Elbow

Lieutenant Colonel A. Argent
Royal Australian Infantry

Introduction

THE turbine engine has been with us for quite some time now in a wide range of applications—in hydrofoils, patrol boats and larger naval ships; in air cushion vehicles; on oil rigs and in timber mills; in fixed wing aircraft and helicopters and tanks, but it is only recently that the Australian Army has become interested in its various uses. For example, the radio station AN/TSC 38 has a gas turbine powered generator.

This article sets out in simple terms how the gas turbine engine works and why, in certain areas, it is preferable to the familiar four cycle, piston engine.

An Internal Combustion Engine

Like the piston (i.e. reciprocating) engine the gas turbine is an internal combustion engine. This means that the turbine engine has a requirement for the induction of fuel and air, then compression and exhaust. However, whereas the piston engine has a power stroke, the turbine engine produces its power from gases which impinge upon turbine rotors or wheels. These rotors turn the output drive shaft.

How the Turbine Engine Works

The sequence of events is shown on a schematic diagram at Figure 1 and briefly it is this. Air is drawn into the compressor and this compressed air is then passed to the combustion section. There the air is

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Lieutenant Colonel Argent enlisted in the A.I.F. in 1945. In 1948 he graduated from the Royal Military College and was allotted to Infantry. After service in Japan and Korea with 3 RAR he completed a Flying Instructors Course in the U.K. This was followed by service with BAOR Germany. From 1958 to 1962 he held flying appointments in Australia and qualified at the Australian Staff College. Service with 2 RAR and 3 RAR in Australia, Malaya and Borneo followed, then a staff appointment in AHQ Canberra. In 1968 he was attached to AAS Washington as Exchange Officer (Flying). On his return to Australia in February 1970 he took up the position of SO1 in the Directorate of Army Aviation, AHQ, Canberra.

mixed with fuel—a blend of petrol and kerosene, usually dignified by one of several abbreviations depending on its grade, e.g., JP4—and this mixture is then burnt. The gases from this combustion then expand across the gas producer turbine rotor(s) striking the blades of the turbine, causing it (or them) to rapidly rotate and thus drive the compressor. The gases continue their short but hot and hurried journey to a second set of rotors called the power turbine. These absorb the energy of the gases exactly the same way as did the gas producer turbines—that is, by rotating—and the rotation of the power turbines turns the output shaft. This is the shaft which, through one or more transmissions, supplies the energy to turn the rotor blades or the propellers or the sprockets and so on.

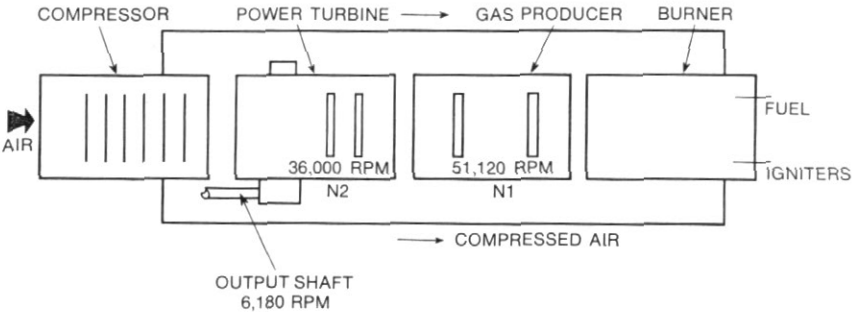


Figure 1. Schematic diagram of a light-weight gas turbine engine.

Their work almost done, the gases are exhausted through a tail-pipe and ported overboard. The engine produces only a little jet thrust from the gas energy remaining in the exhaust gases.

Description of Turbine Speeds

For ease of reference the speed of the gas producer turbine is called N1 and the speed of the power turbine (or sometimes its output shaft) is called N2. See note (2) on Table 1.

The 'Free' Power Turbine

An important feature in this operation is that there is no mechanical linkage between the gas producer and the power turbines. This means that the power turbine can rotate at a different speed to the gas producer turbine rotor and therefore there are these advantages:

- Easier starting as the starter does not have to turn the power

turbine and whatever is driven by it, for example, rotor blades, propellers, etc.

- Engine efficiency improved because each turbine can be designed for its specific task.
- Operational flexibility increased because gas producer and power turbine speeds can be independently selected, for example, N2 can be adjusted by the pilot.

About One Engine

This paragraph refers to the gas turbine engine fitted to the OH-58A and the OH-6A observation helicopters, although the descriptions could apply in greater or lesser degree to other engines. On the civil market the engine for the civil models of the OH-6A and OH-58A is called 250-C18. However, military engine titles such as 'T63-A-700' are not quite the acrostic as they may first appear. The 'T' stands for turbine, 'A' for Allison, the manufacturer; the last figure something akin to the mark of that particular design. Following are some of the things that go on inside this small, light-weight but muscular engine:

- At maximum RPM (i.e. 51, 120) the T-63-A-700 and 5A compressor pumps about 40.9 cubic feet of air per second. This is about 3.13 pounds of air per second on a standard day. (An average Army desk has a cubic capacity of about 38 cubic feet.)
- The compressor requires about 600 SHP to pump this amount of air.
- The compressor gives the air a compression figure of 6.2 to 1 and a temperature rise of 450°F.
- Of the total amount of air that is pumped by the compressor only about 20-25 per cent is used in combustion. The main portion, say 75 per cent, is used for cooling the hot gases of combustion. Without this cooling, the flame would melt the walls of the burner.
- A small percentage of the heated air in the compressor can be used to prevent engine icing and for cabin heating.
- Both the gas producer turbine and the power turbine have gear trains to drive such things as oil pumps, fuel pumps, generators, governors, fuel control units, and tachometers (i.e. Revolution Counters).

TABLE 1

Some Typical Turbine Engine Figures

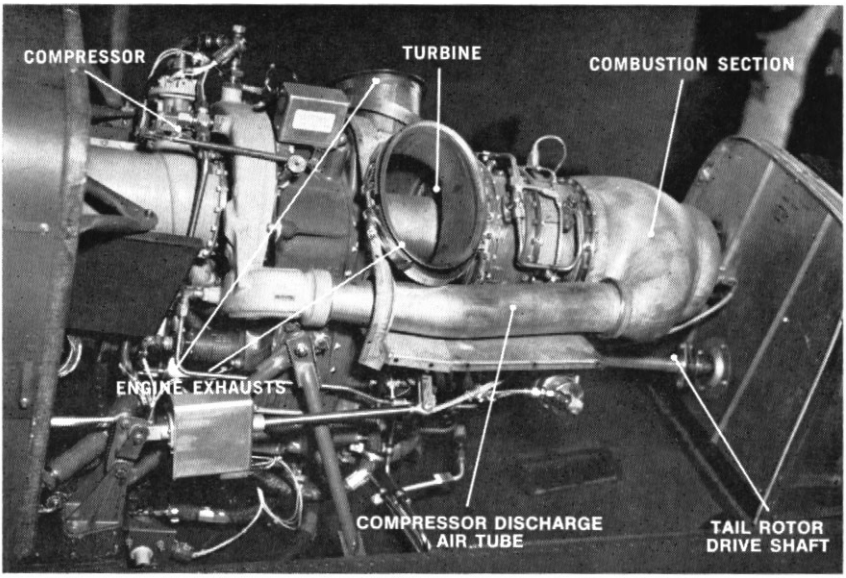
Engine Maximum	Where Used	Weight Lb		Maximum Gas Producer RPM(N1)	Maximum Power Turbine RPM(N2)	Output Shaft RPM (2)	Main Rotor(s) RPM	Normal SHP (3)	Using 75% Normal SHP			
		Dry Weight of Engine	Gross Weight of Aircraft						SHP	SFC (4)	Full Consumption lb/hr	Imp Gallons/ Hour (7)
T63-A-700 317 SHP 279 SHP used (1)	Bell OH-58A Kiowa	139	3,000	51,120	36,000	6,180	354	270	203	0·762	154	20
T63-A-5A 317 SHP 252 SHP used (1)	Hughes OH-6A Cayuse	136	2,400	51,120	35,000	6,000	470	214	161	0·835	133	17
T53-L-11 1100 SHP	Bell UH-1D Iroquois	505	9,500	25,000	21,000	6,600	324	900	675	0·763	515	66
T55-L-11 3750 SHP	Boeing Vertol CH-47C Chinook	670	46,000	19,000	16,000	16,000 (5)	235 to 245	3,000	2,250	0·604	1,360	350
T74-CP-700 (PT6A-20) 550 SHP (6)	Beech U-21A Ute	275	9,650	37,500	33,000	Propellers are governed to maximum of 2,200 RPM		495	370	0·755	280	72

These figures are based on a standard day at sea level—that is, a barometric pressure of 29.92" (1013.2 Millibars) and a temperature of 59°F (15°C).

NOTES: (1) The engines for the OH-58A and the OH-6A are, for all practical purposes, identical.
(2) Because the power turbine-shaft-reduction gears-output shaft can be considered as a unit, the term N2 is sometimes applied to output shaft RPM.
(3) Normal shaft horsepower is that allowable for continuous operation under specified conditions.
(4) SFC is specific fuel consumption expressed in pounds of fuel used per shaft horsepower being developed per hour.
(5) In the Chinook, various transmissions provide an overall reduction ratio engine to rotor speed of about 66 to 1.
(6) Also installed in the Pilatus Porter.
(7) CH-47 and U-21 figures in this column show total fuel consumption.

- As in other gas turbine engines, combustion is self-sustaining —that is, after the initial light-off on starting the engine, the igniter plug(s) do not fire.

Some figures for turbines that power aircraft familiar to the Australian Army are set out in Table 1.



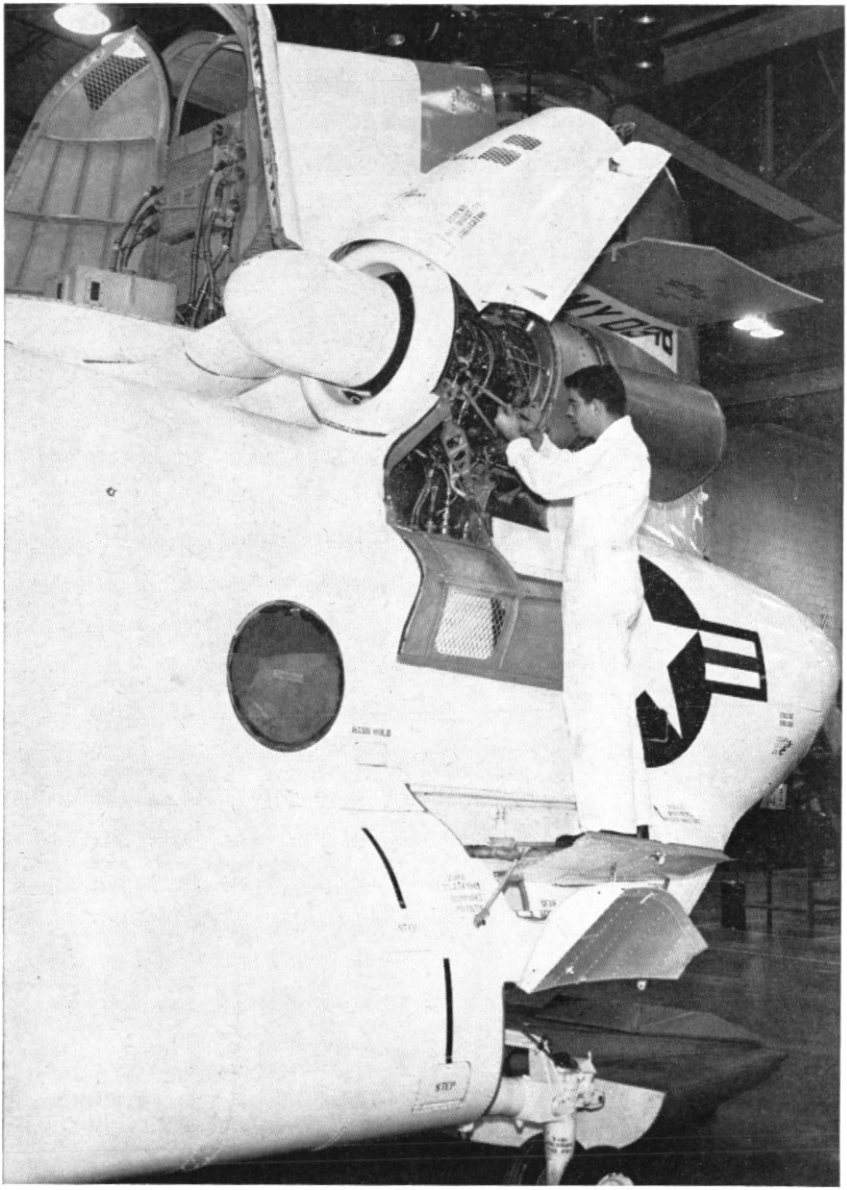
(US Army photograph)

Left side view of the T 63-A-700 gas turbine engine which is installed in the OH-58A, the US Army's 'Kiowa' light observation helicopter. The dry weight of this engine is 139 lb and it can develop 317 shaft horsepower.

Why a Turbine Engine?

Why is a turbine engine preferable to the piston engine? Some of the reasons are:

- A turbine engine is lighter. For example, the T63-A-700, already described, has a dry weight of 139 pounds. A comparable piston engine producing the same horsepower weighs about 500 pounds. Even with the weight of the shaft and reduction gears a turbine engine is capable of producing about two and one half horsepower per pound of weight, which is approximately twice as much as the most powerful piston-type engine.



(Boeing-Vertol photograph)

Number 1 engine of a CH-47, the 'Chinook'. Two T55-L-11 engines, each weighing 670 pounds and capable of developing 3750 SHP, power the 46,000 lb CH-47C.

- A turbine is smaller than a comparable piston engine and therefore in aircraft it presents less frontal area to the airflow—that is, there is less drag. This means, amongst other things, more speed or less fuel consumption and an easier engine installation.
- Because turbines are smaller and lighter it is possible to twin-pack them in aircraft and other vehicles without a great weight penalty, for example, the UH-1N—the familiar Iroquois—has two turbine engines.

(US Army photograph)

The UH-1D. It has a gross weight of 9,500 lb and is powered by one T53-L-11 engine which can produce 1,100 SHP. The Canadian Armed Forces have recently bought twin-engined models of this aircraft —the UH-1N with T74-CP-400 engines.

- Turbines burn a lower grade fuel—JP4 costs about one-third or one-quarter of the price of aviation petrol, depending on the whims of the government.
- There are far less moving parts on a turbine engine. This makes for smoother engine running, less maintenance and cheaper operating.

Drawbacks and Limitations

The gas turbine engine is not the answer to the aeronautical engineer's, the accountant's, or even an aviator's dream, for it has several things that go against it. In the main, these are:

- It is more expensive than a comparable piston engine. Roughly it costs about twice as much. This higher cost is because of the special heat resistant metals which must be used and the very fine engineering required in manufacturing of the engine, for example, small or no tolerances, the positioning of the blades in the turbine wheels, etc.
- A turbine engine uses more fuel—that is, it has a higher specific fuel consumption than an equivalent piston engine. In small machines however the difference in consumption should not worry DST overly, for example, the Bell Sioux burns about 16 gallons of AVGAS an hour, the OH-58A about 20 gallons of JP4 an hour. It is the bigger machine which is so thirsty and poses fuel supply and engineering problems.[1]
- The turbine engine loses power at altitude, particularly in a hot climate. A supercharged piston-engine aircraft does also, but not to the same extent. The turbine engineer's counter to this is to say that the proper course is to first select a turbine that will do the job at altitude on a hot day. They go on to say that there is little to be gained in noting that a turbine engine with the same horsepower at sea level as a piston engine will develop less power at 10,000 feet. They have a point.
- Like the piston engine it is susceptible to icing, particularly at the air inlet, on the nose cone and on the first blades of the compressor.

Conclusion

All in all, it seems safe to say that in the years to come we will see more and more of the gas turbine, that its size and weight will decrease but at the same time its power will increase—in fact, its limitation may be the strength of the machine in which it is to be used. □

[1] The engineering problem is best illustrated in another field—that of long distance hauliers. It is not possible for the truck to carry enough fuel (at the expense of payload) for a long journey. However, development work on a constant volume gas turbine (as distinct from the constant pressure gas turbine which power the aircraft mentioned in this article) may result in an engine with a specific fuel consumption about the same figure as a reciprocating engine. Long distance hauliers then may well use this engine.

Countermeasures Against Mines and Booby Traps

Major Wallace M. Greene III
United States Marine Corps

THE 1st Marine Division situation map glows dimly in the semi-darkness of the Combat Operations Centre. Muted voices are heard in the background in answer to the insistent ring of the phone as enemy contacts are reported and information plotted on the map. A glance at an incoming spot report tells a poignant story:

> *At 221110 platoon sweep tripped M-26 grenade rigged as booby trap. When others went to assist, 3 more M-26 grenades tripped. All were rigged separately in a 10 metre radius. 3 USMC killed, 7 USMC wounded.*

What can be done to defeat this enemy mine and booby trap threat?

No less essential than understanding enemy doctrine is an understanding of the countermeasures which can be employed to neutralize it. The countermeasures suggested in this article are derived from a 1st MarDiv SOP prepared by this author, which in turn was based on weeks of research, including correlation of various references; seminars with regimental and battalion commanders and their S-3s; conversations with platoon commanders, platoon sergeants, and pointmen; and attendance at the excellent Mine Warfare and Booby Trap School conducted by the 1st Engineer Battalion.

Major Greene was a battalion and regimental S-3 in Vietnam before being assigned to 1st Marine Division G-3 where he developed the division's mine and booby trap countermeasures programme. He is now in the G-3 section, HQMC. This article is reprinted by permission of the copyright holder, the Marine Corps Association, publishers of the Marine Corps Gazette, professional journal for Marines, Copyright (c) December 1969, by the Marine Corps Association.

For simplicity, countermeasures can be generally grouped as preventive and curative. Preventive countermeasures prohibit emplacement of devices, while curative measures minimize the effect of devices already emplaced.

In the area of preventive countermeasures, consideration should be given to intelligence; use of night vision and intrusion devices; tactical countermeasures; control of duds and abandoned munitions; and the Volunteer Informant Programme (VIP).

Certain tactical countermeasures will aid in preventing emplacement of road mines and booby traps. Road mining incidents can be reduced by paving or oiling roads. Gravelling roads is not desired as it reduces the effectiveness of mine detectors, and hampers visual detection by hiding disturbed soil on road surfaces. Where practical, ditches can be dug along both sides of a road to detect and cut buried wires leading to command detonated devices. Clearing underbrush from road shoulders by any means, such as flame, herbicides, or use of engineer equipment, eliminates covered approaches to roads, which enemy sappers use in their mining activities. Additional benefits are realised if underbrush is cleared beyond effective small arms range.

Enemy ambushes, which so often accompany road mining incidents, are thus more easily neutralized; and booby traps, so frequently encountered by road sweep flank security elements, are more easily found and destroyed. Small stay-behind patrols, dropped off unnoticed near roads by passing night combat patrols, are useful in observing road sectors for sapper activity. Once discovered and compromised by chance passing of civilians they would return to their units. This not only provides observation for a significant period of time, but also serves notice on the local populace and the enemy that friendly forces have surveillance in the area. Under these circumstances, sappers could not predict a safe time to mine roads. At night, periodic H&I and illumination fires over roads; tank beehive rounds fired down the long axis of a road; or periodic small arms bursts from a gunship overflying the long axis of the road, all tend to discourage night time sapper efforts. These last measures, however, have the disadvantage of increasing the metal content of roads, and diluting the detection ability of metallic mine detectors. White phosphorus H&I fires over roads could possibly offset this disadvantage.

Constant physical presence of Marines in the AO is the most effective measure to counter emplacement of booby traps. However, in

terms of troop employment, the cost is prohibitive. As an alternative, these tactical countermeasures can prove useful: aggressive widespread patrolling; reconnaissance patrol verification of S-2 intelligence reports; employment of Scout-Sniper killer teams; and small unit cordon and search operations with Vietnamese National Police in villages near high density booby trap areas, or in villages suspected of harbouring enemy munition shops or sappers. Conducting routine patrolling during meal time patrolling lulls, 0600-0800 and 1800-2000, will reap dividends. Unfortunately the enemy knows that we too frequently use these hours to eat and not patrol. He uses these same periods to set in booby traps. Artillery and mortar fires, near and in the area of operations, will not only discourage booby trap emplacement, but will also neutralize devices by sympathetic detonation, overturning and burying, and rupturing trip wires. Emplacement of fires beside a road, before and during a road sweep, will discourage command detonation of road mines.

Careful control of friendly duds and abandoned munitions is an essential countermeasure, as these items provide the enemy with 90% of the mines and material for surprise firing devices used against U.S. forces. The ease with which U.S. ordnance falls into enemy hands can be attributed to several factors. Massive close air and artillery support of operations, coupled with the complexity of modern ordnance design, contribute significantly to this problem.

Fire support missions should be monitored to guard against delivery of excess ordnance. Perhaps the best enemy source of U.S. ordnance is abandoned munitions. We invite destruction with our own ordnance when a unit, overstocked in ammunition, is required to move out on short notice with only a basic load, and abandons 'excess' ammunition at its former position.

The abandoned M-26 grenade presents a particularly vexing problem. Seventy-eight per cent of the surprise firing devices encountered in the 1st MarDiv TAOR are grenades, with most of these the M-26 variety. There is a real need for persistent small unit supervision in the handling of grenades. They are best carried in grenade pouches. This eliminates the varied means now used, is safer, and reduces the chances of losing grenades in the field. Rifle platoon commanders must insist on strict accountability for grenades, including inspections and inventories before and after a mission. The ready availability to the enemy of C-ration and soda cans is an associated problem, as he uses these

in constructing booby traps. Dumps, in rear as well as forward areas, should be covered or secured. It is meaningless to bury cans in the front lines while large dumps remain uncovered in rear service areas.

Important as preventive countermeasures are, curative countermeasures are equally important, as they diminish the effect of devices already emplaced. Emplaced booby traps are the tangible, physical threat facing the rifle platoon commander and each Marine in his platoon daily. What measures, what techniques, can they use to ensure mission accomplishment and minimum casualties in the face of frequent high density booby trapping?

Perhaps the most significant of all countermeasures is an adequate and comprehensive approach to training. And, here, as usual, the rifle platoon commander is the key man. He must be knowledgeable in mines and booby traps himself, and he must ensure his men are, too.

He must understand both the natural fear of booby traps and the best way to control this fear. Fear serves a purpose up to a point, as it develops an acute sense of alertness in individuals to find that booby trap before it finds them. Beyond this point it is bad, for men may hesitate to move about as they should, for fear that their next step may be their last. The balance is struck and the fear controlled when your men learn that most injuries can be avoided.

How does a platoon commander develop expertise in these techniques for both himself and his men? What should he teach and how should he teach it?

The rifle platoon commander, although he will be the last to admit it, is the best trained man in his platoon. His Basic School education in doctrine, his college background, his intelligence, and his common sense are a great storehouse of latent expertise. He needs to put it to work. Doctrine learned at TBS, tempered by good advice and his own experience, will give him and his men the necessary expertise.

An important curative countermeasure is the direct and concentrated application of command attention to the booby trap problem. Company commanders, battalion S-3s, battalion and regimental commanders must ask, 'What are my platoon commanders doing about it?' Timing is important here, too. When men are injured by a booby trap, command attention should immediately focus on the incident. From the platoon commander up, these questions must be asked and answered:

What happened?

What countermeasures were taken beforehand to prevent the incident?

What countermeasures will be taken to prevent future incidents?

Once laid, a mine or booby trap must be found before someone trips it. Detection may be accomplished by visual inspection, probing, mine detectors, Kit Carson Scouts, and scout dogs.

At present the finest mine and booby trap detector in the Marine Corps is an alert and observant point man. He must know where to look and what to look for. Each Marine must know the areas in which booby traps and mines are normally found. Generally these are the areas where units operate on a continuous basis. Seldom are explosive devices found outside unit TAORs. Specific locations were mentioned earlier in the discussion on enemy doctrine.

Knowing *what* to look for is just as important. Marines must be alert for things which 'just don't look right'; where the normal lay of the land has been disturbed. For example:

- Any feature of the terrain which does not appear natural. Camouflage frequently deteriorates; cut vegetation dries and changes colour; rain may wash away covering material or cause an explosive device to sink, leaving a surface depression; a covered device may also appear as a mound.
- Mud smears, mud balls, dung, or boards on a road; evidence of apparent road repairs, new fill or paving patches, ditching or culvert work; wires leading away from the side of the road.
- Suspicious items in trees, branches or bushes. These charges, which are usually placed along a trail or overhead, are frequently easier to spot than the trip wires which detonate them.
- Trip wires across trails; along shoulders of roads at likely ambush sites; across the most accessible routes through tree lines and hedgerows; at fords and across rice paddy dikes.
- Watch for markings used by the VC to indicate the location of mines and booby traps. Although usually placed along or near trails, they are not immediately obvious, and will be detected only by alert and observant individuals. These markings are usually for the benefit of local villagers, and are often removed by the villagers upon approach of Marine units. However, they

do appear as a regular pattern not present in nature, such as sticks or stones in a line; or sticks placed in the ground in an unusual manner.

- Beware of souvenir items, the 'harmless' canteen that explodes when picked up; kicking an innocent mud ball on the road, as it can conceal a grenade with the safety pin pulled; recovering an apparently discarded M-26 grenade found on a trail—if its 4-second fuse delay has been removed, and the grenade is used later by the finder, an in-hand instantaneous detonation will occur (the VC usually mark these grenades with a small dot of paint); moving enemy or friendly dead—the body can conceal a grenade beneath with the safety pin pulled.
- A booby trap too easily found can be a ruse resulting in the detonation of a second booby trap located in a concealed position nearby.

Surprise firing devices may also be detected by probing suspicious spots with a probe or bayonet. Probing should be done gently with the probe held loosely in the hand to avoid setting off pressure actuated devices. During both day and night operations, a light-weight stick (bamboo), or a slender steel rod can be helpful if used to the front as a probe for trip wires.

Mine detectors are another means of detection. Unfortunately detectors now in use were designed for the slow deliberate sweep of World War II mine fields, not the typical daily road sweep in Vietnam. The average sweep rate of a road sweep in Vietnam far exceeds the designed effective sweep rates of detectors currently available. The hasty opening of a road to traffic can mean the destruction of that traffic. Yet, on the other hand, an infantry commander can't wait most of the day for his MSR to open. The answer is a mine detector with a faster sweep rate, and one without the structural and design deficiencies of our present detectors. For example, the difficulties these detectors now experience in discriminating between real and false targets on roads full of rock and metal debris must be overcome. This is the day of man-on-the-moon technology, yet we are twenty-five years behind the times when it comes to mine detectors.

For off-the-road detection of booby traps, the Navy's MK15 metallic ordnance locator seems promising. Its full potential should be realized through issue to units in the field.

Finally, the capabilities of Kit Carson Scouts and scout dogs must be exploited to the maximum extent in detection of devices. The native ability of the Scouts and their Regional and Popular Force brethren, coupled with their intimate knowledge of the area, its people, and activities of the local VC, can prove highly useful in locating devices. Scout dogs detect a booby trap from the scent of the individual emplacing it. This scent is usually detectable as long as 1-4 days after emplacement. Since booby traps are normally placed shortly after initiation of friendly operations, the chance of discovery by dogs is good.

Once detected, mines and booby traps must be destroyed in place to prevent subsequent accidental detonation by others. Destruction should be by engineers or engineer trained personnel within each unit. Devices should *not* be moved, nor any attempt made to disarm them, unless absolutely necessary for the continuation of operations, and then only by EOD or engineer personnel. Mines and booby traps can be destroyed in place by demolitions, grappling hooks, and artillery fires. The LVTE line charge and plow-shaped mine excavator should be considered for use in areas of high mine density.

Booby traps can be avoided through strict application of training and careful planning of movement through danger areas. The platoon commander must analyze, from the enemy's viewpoint, each area through which he intends to move his men. He must ask himself the question, 'If I were the enemy, where would I put booby traps?' This question can and should influence both administrative and tactical movement along roads and overland. It is also a factor to be considered in the scheme of manoeuvre during an attack. Some suggested means for avoiding mines and booby traps are:

- Stay off trails, cart tracks, and out of tree lines whenever possible. One infantry battalion reported that during April 1969, 84% of all booby traps encountered were found on trails and tree lines.
- Men resting after a long hot day under a shady tree have found themselves sitting down on booby traps. The immediate area should be probed before sitting down or laying equipment down.
- Move where local inhabitants move, they know the location of most mines and booby traps and will avoid these areas. In a village, stay near the villagers and watch which buildings they use. Use Vietnamese as guides. Have sufficient money on hand

for on-the-spot payments for information on mine and booby trap locations.

- Move at night. Most booby traps are tripped during the day when the VC expect more friendly movement.
- Move slowly. Rapid movement generates carelessness. A unit must be allowed sufficient time for movement to its objective.
- Avoid patterns. Constantly change unit direction of movement. Avoid patrol patterns in terms of routes and timing. Avoid the same bivouac areas. Vary routes to villages and key terrain features. Use of the same route twice is an invitation to booby trap. Keep the VC guessing as to which route will be used next.
- Maintain 15 metre intervals between men and 100 metre intervals between men and tracked vehicles. In view of the fact that the effective casualty radius of the M-26 grenade is 15 metres, and that two or more men are frequently casualties from one booby trap, it would seem that proper interval cannot be overstressed.
- Patrols should use two point men in high density booby trap areas. While one point man carries out his normal duties, the other stays alert for booby traps.
- Mark detected mines and booby traps so those following may also avoid them.
- At times the VC will show themselves only when they want to be seen. When pursuing the enemy, be especially alert for deliberately emplaced booby traps on the axis of advance.

Past experience in Vietnam is no insurance against injury from booby traps. Old timers as well as newcomers trip these devices.

Thus the immediate action to take the instant a device is tripped is of equal concern to everyone. Again, we owe our men more than platitudes on the use of common sense, or on the obvious value of a quick prayer. There are certain things that can be done to reduce casualties and the degree of personal injury.

It is recognized that little reaction time exists once the detonation chain starts. The maximum fuse delay for the M-26 and foreign grenades ranges from 4 to 9 seconds. If the delay element has been modified or removed, and this is usually the case, maximum fuse delay is 1½ seconds

or less. Since available reaction time cannot be predicted, a zero fuse delay must always be assumed. Based on this assumption, the following immediate action *must be* taken the instant the device is tripped:

(1) Be alert for the 'pop' of the exploding cap, the tug of the trip wire, or the warning of another Marine.

(2) Sound a warning so others close by may take cover.

(3) Drop to the ground immediately.

No attempt should be made to outrun the explosion. The 800 fragments of the M-26 grenade have an initial velocity of over 5,000 feet per second. No Marine can run this fast. He can, however, remove himself from the cone of the explosion by dropping to the ground. If the location of the device is known, the individual should, when dropping to the ground, present the smallest possible target by pointing his feet in the direction of the charge. Those in his immediate vicinity should also drop to the ground when the warning is sounded, so they too can avoid the cone of the explosion.

Frequently additional casualties are caused through subsequent unco-ordinated activities by other patrol members after a device is tripped. Actions to take at this time to avoid unnecessary casualties and confusion are:

- All patrol members freeze.
- Patrol leader evaluates the situation.
- Sort seriously wounded from walking wounded. This is done verbally.
- Walking wounded retrace path taken into the area.
- The man nearest each casualty should render first aid after carefully clearing his way to the individual using a probe or grapple. Under no circumstances should the rest of the patrol crowd near the wounded man.

A good example of an effective curative countermeasures programme at the rifle platoon level is illustrated by the performance of the 1st Platoon, F/2/7. During a four-month period this platoon encountered 42 devices without a single detonation. The platoon commander instituted a simple eight-point programme centred on leadership, basic training, and accountability of grenades. His eight points are:

(1) *Grenade Accountability.* Each man in the platoon is held accountable to the platoon commander for every grenade he draws. After an operation, the platoon commander personally inspects the entire platoon to make sure no grenades were lost.

(2) *Area Police.* Before leaving a position, the platoon commander personally ensures that the entire platoon area is policed, and that nothing has been left behind or discarded.

(3) *Personnel Inspection.* The platoon commander personally inspects each man for proper carriage of grenades to prevent their loss while moving in the field.

(4) *The Six Paragraph Order.* The platoon commander adds a sixth paragraph to the standard order. It consists of three parts:

(a) Current intelligence as to what will be found in a particular area in the way of booby traps.

(b) What booby traps have been encountered in the past. This includes where, how, and why they were found.

(c) Techniques for discovering and avoiding trip wires are stressed.

(5) *Brief the Point Man.* When the platoon is deployed and ready to move out, the platoon commander reminds his point man of the essential details covered earlier in the order given the entire platoon.

(6) *Re-brief the Point Man After Encountering a Booby Trap.* When a booby trap is found, the platoon commander moves forward and institutes a careful search for other booby traps in the immediate vicinity of the first one. He reminds his point man of the essential countermeasures once more, and again resumes movement.

(7) *Utilize Specialists.* One or two men in each squad are qualified to walk point in a heavily booby trapped area. They must be aggressive, alert individuals, who have that little extra indescribable something—a sixth sense—which they use to detect and destroy booby traps. There isn't a rifle platoon in Vietnam that doesn't have at least a few of these men.

(8) *Stress Confidence in the Point Man.* Verbal praise of the point man in front of the platoon by the platoon commander, serves not only to generate confidence in the point man, but

also is a reminder to others to remain alert no matter what their position in the formation.

After several months of intense effort the story told by spot reports is notably less poignant. There are days now when Marines, with a new sense of alertness, encounter and destroy many mines and booby traps without a single detonation. They are finding them with their eyes instead of their feet. Less M-26 grenades are used against us as booby traps. This is indicative of better ordnance control at the platoon level. Far less men are hurt per booby trap detonation now than several months ago. This means increased dispersion between men. There have been a number of cases were local Vietnamese have led Marines to booby trapped areas. Gaining the confidence of villagers and rewarding them promptly under the VIP programme has paid dividends. Mines and booby traps no longer account for 64% of the Division's casualties. For the month of May, this figure dropped to 47%. The very effective three-day mine and booby trap school conducted by the 1st Engineer Battalion has contributed significantly to the Division's efforts to reduce casualties. These are only signs—but they are all encouraging signs which hopefully will be positive trends of the future. □

BRITISH BORNEO 1945

The Australians found that the Japanese treated the Dyaks with well-merited respect. They did not molest them or interfere with their women, nor did they try to employ them. The Dyaks for their part avoided the Japanese but if necessary would walk calmly through their bivouacs. They seem to have regarded the Japanese as mere raiders and to have been convinced that the British would return. At every Dyak village Australian patrols were invited in by the chief and given rice wine. Of all the Asian and island peoples among whom the Australian soldier campaigned and trained in six years of war — Arabs, Palestinians, Lebanese, Ceylonese, Malays, Chinese, Indonesians, Papuans, and others—none won more respect from him that did the Dyaks, with their courage, dignity, friendliness and generosity.

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

The Charge of the Heavy Brigade

Staff Cadet C. D. Clark

Half a league, half a league,
Half a league onward,
All in the valley of Death
Rode the six hundred.

SO read the opening lines of Lord Tennyson's epic poem commemorating the famous Charge of the Light Brigade, the 'astonishing, brave and bloody incident for which the Battle of Balaclava is chiefly remembered.'[1] There is however no poem celebrating the Charge of the Heavy Brigade — separated from its better-known counterpart by only a few hours in time and by less than two miles in distance — an action deserving far greater recognition than the futile gesture of charging a whole army with a pitiful six hundred men. The controversy over the 'gallant if ill-conceived' Charge of the Light Brigade has never ceased, even to this day, but it is a feat 'which, for literary rather than military reasons, has become enshrined as an imperishable episode in the history of . . . . [the British] army.'[2] The earlier charge by the nine hundred men of the Heavy Brigade against three thousand enemy horsemen stands as a brilliant victory in its own right.

When the Allied force of 56,000 French and British troops, plus 4,000 Turks, landed at Calamita Bay to begin their invasion of the Crimea in mid-September of 1854, the prime objective was Sebastopol, Russia's naval base on the Black Sea. At the Battle of the Alma River on September 20 the initial Russian opposition was defeated, and vigorous and determined action following this success would probably have seen the prompt fall of Sebastopol. Many Russians considered the town indefensible and advocated leaving the naval base to its fate, but

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the indecisiveness of the Allied commanders gave them time to fortify the town and force the western armies into a protracted siege.

Throughout the investment of the dockyard fortress, British supplies were brought in through Balaclava, a port only six miles to the south-east of Sebastopol (see Figure 1). Balaclava occupied a vulnerable position however, as there was the constant threat of a Russian attack against the weak eastern, or right flank. This threat materialized when Prince Aleksandr Menshikov, the Supreme Russian Commander, ordered a sudden attack on the base. On the evening of October 24, Count Liprandi assembled a force of 22,000 infantry, 3,400 cavalry and 78 guns on the Tchernaya River, five miles north-east of Balaclava.

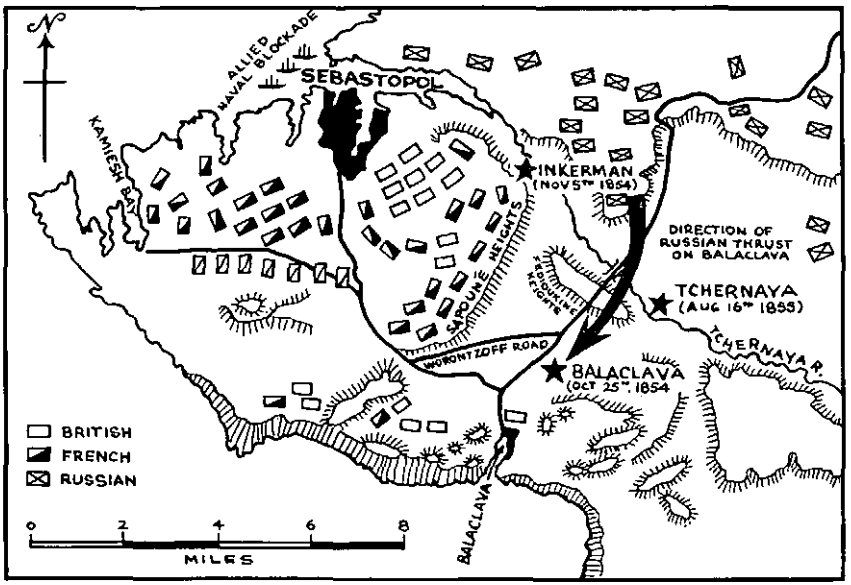

Figure 1

I

The Russian advance began at 5 a.m. the next morning. The plan was that four columns consisting of 10,000 men and 30 guns, supported by cavalry, would assault the Turkish redoubts on the Causeway Heights

[1] Cyril Falls (Ed.), *Great Military Battles*, (London 1964), p. 155.

[2] E. W. Sheppard, *A Short History of the British Army*, 4th ed., (London 1950), p. 212.

(Figure 2), while the remainder of the Russian host was to occupy the Fedioukine Heights.

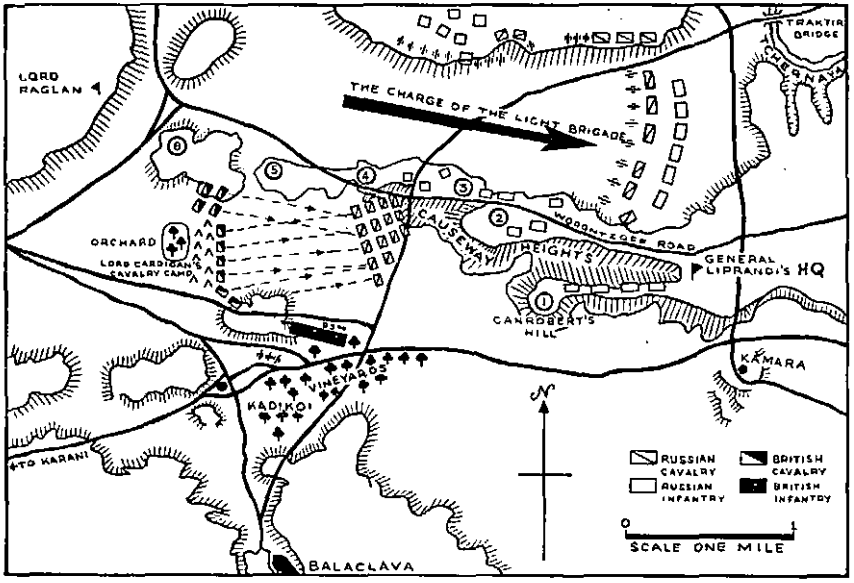

Figure 2

An hour later the alarm went down the British lines, and the three 12-pounders in Redoubt 1 opened fire to meet the initial onslaught. After a heroic defence the redoubt's garrison of five hundred Turks was driven out with a bayonet charge. Leaving 170 dead behind them, in addition to the guns, the Turks fled across the plain towards Balaclava. The garrisons of Redoubts 2, 3 and 4, observing the utter débâcle in No. 1, immediately pulled out and, surrendering another six guns without a fight (though not before the British artillerymen had spiked them) joined the flight to the harbour. 'Condemned by all who watched from afar and unfairly likened them to curs and cowards, to flocks of sheep in panic,' W. Baring Pemberton writes that 'the Turks had gained for their allies invaluable breathing space, calculated at about one hour.'[8] A mere 3,000 Turks held the six redoubts which formed the outer perimeter of Balaclava's defences and it was surely expecting too much of them to hold off eleven battalions of Russians without any

[8] W. Baring Pemberton, *Battles of the Crimean War*, (London 1962), p. 78.

support. The garrison in Redoubt 1 had suffered 34 per cent of their numbers killed before they were finally pushed out of their position.

The moment news of the Russian advance was received, Lord Raglan, the British Commander, sent for reinforcements to the 1st and 4th Divisions, but they were two hours marching distance away and Raglan desperately needed time. The only forces opposing a Russian advance on Balaclava were the 500 strong 93rd (Argyll and Sutherland) Highlanders, 3,000 slightly mauled and unreliable Turks, two troops of horse artillery, and the 1,600 sabres of Lord Lucan's Cavalry Division (consisting of the Light Brigade under Lord Cardigan, and the Heavy Brigade under Sir James Scarlett). Lucan was ordered by Raglan to retire the cavalry from their positions south of Redoubts 2 and 3 to a position at the foot of the Sapouné Heights, on the extreme left of Redoubt 6 — along with No. 5 the only remaining fort of the outer defences still in allied hands. From this position Lucan could menace the flank of the anticipated Russian thrust on Kadiköi, defended by General Sir Colin Campbell's highlanders who occupied a rise just north-east of the place. The Turks who abandoned the four forts on the Causeway Heights had fallen back on Campbell and formed up in companies on the flanks of the highlanders.

Cecil Woodham-Smith says:

> The retreat of the cavalry marked the end of the first period of the battle. The situation could hardly have been more serious; the Causeway Heights were lost, the road from the base to the camp on the heights was lost, the Russians were coming on in overwhelming strength, and it seemed as if Balaclava must very shortly be lost too.[4]

II

In the meantime, the mass of the Russian cavalry followed by dense formations of infantry with guns, had begun to move forward up the north valley in preparation for the final southward thrust towards Balaclava. Four squadrons of Russian cavalry broke off from the huge Russian column and wheeling left, crossed the Causeway Heights and advanced on Campbell's 93rd, a mile away. As the squadrons of heavy dragoons came on, Campbell formed his highlanders in line on the crest of his position — 'a thin red streak topped with a line of steel' wrote *The Times* correspondent.

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[4] Cecil Woodham-Smith, *The Reason Why*, (London 1953), p. 219.

At eight hundred yards, the Turks fired a volley, then broke and ran. The highlanders stood calmly waiting as the Russians charged on. With three rolling volleys the charge was repulsed and the Russians, wheeling to the left, hastily withdrew back over the heights.

When it first became obvious that a charge was to be made on the 93rd, Lord Raglan had sent Lucan an order to despatch eight squadrons of the Heavy Brigade 'to support the Turks, who are wavering.' Due to the problem of time-lapse between when Lord Raglan issued an order from his position six hundred feet above the plain and when it was received by his commanders below, the attack on the 93rd was already over by the time the order reached Lucan. The order still set two squadrons from each of four of the five regiments of the Heavy Brigade, some 700 men, trotting towards Campbell's position, a mile away to their right front.

Scarlett's brigade set off strung out in two irregular lines. On the left were the two squadrons of Scots Greys with the second squadron of the Inniskillings in the lead — all in all about 300 men. On the right, and slightly in advance of the rest of the brigade, was the first Inniskilling squadron, while also on the right, but to the rear, were the 5th Dragoon Guards. Behind them were the Royals, who had not been ordered to move and were therefore stationary. When it became obvious a few minutes later that the Heavy Brigade was about to go into action, the Royals hurried forward and, contrary to many accounts, arrived in time to join the charge. Further still to the rear, but hampered by the ruins of an old vineyard on their left, rode the 4th Dragoons.

III

Meanwhile, in the north valley, the progress of the Russian cavalry under General Rykoff had been checked by the fire from one French and two Turkish heavy guns on the Sapouné Heights. The tightly-packed formations wheeled to the left and began climbing the Causeway Heights. Thus it was that as the Heavy Brigade was moving east, parallel to the heights, over three thousand Russian horsemen appeared on the ridge-line only eight hundred yards to their left. It was obvious from the light blue jackets embroidered with silver lace that the leading ranks of the Russians on the crest of the heights were *corps d'élite*. As they continued to advance down the slope at an easy gallop, a forest of lances glittered at their rear and several squadrons of grey-coated dragoons moved quickly up to support them.

The commander of the Heavy Brigade, Brigadier-General Sir James Yorke Scarlett (1799-1871) was fifty-five years old and as lacking in military experience as Lord Lucan or Lord Cardigan. He had however modesty and good sense, and was perfectly aware of his own military ignorance. He openly depended on the recommendations of two aide-de-camps, or advisers, who had made brilliant reputations for themselves in India. The officers, Colonel Beatson and Lieutenant Alexander Elliot, had offered their services to Lords Raglan, Lucan and Cardigan, and had been rejected; but the unassuming Scarlett held no prejudice against their service having been gained in India and knew their value as experienced officers — especially as only three other officers in the Heavy Brigade had been in battle before! Stout, red-faced, and with large white moustache and eyebrows, Scarlett was admired by his men for his good-naturedness. One of Lord Cardigan's subalterns, Lieutenant Seager, contrasting Scarlett with Cardigan, wrote of him, 'Good kind old fellow that he is, they are all very fond of him and will follow him anywhere.' They now prepared to follow him in what many historians consider one of the greatest feats of cavalry against cavalry in the history of Europe.

Scarlett immediately ordered his squadrons to change their front facing the slopes and began to dress the ranks in preparation for what Falls claims was 'one of the most remarkable small cavalry actions in the history of the British Army.'[5] The business of dressing the ranks involved the officers turning to face their men. The sight of the officers coolly turning their backs on the enemy, and of the men unhurriedly going about the drill as if on a parade ground, did much to unnerve the Russians and, as was admitted by Russian officers after the war, shook their morale. Lord Lucan, who saw the Russians through an orchard, rode up and ordered Scarlett to charge, despite the fact that he was preparing to do just this in any case. In a speech to the House of Lords, Lucan was later to claim credit for having initiated the charge.

IV

The Russians continued to advance down the slopes and were half-way down before they suddenly realized the British were about to charge. The Russian centre came to an abrupt halt, so abrupt in fact that the flanks were late in stopping and the Russian formation took

[5] Cyril Falls, op. cit., p. 160.

on the shape of a huge crescent. Only three hundred and fifty yards separated the opposing forces. The front of the Russian host overlapped both flanks of Scarlett's line, and had they decided to charge down the slopes at the tiny squadrons drawn up before them there can be no doubt whatsoever as to who would have been the victors. Instead the Russians remained halted, seemingly both fascinated and incredulous at what they saw before them.

Lord Lucan impatiently ordered the divisional trumpet to sound the charge, but Scarlett ignored it until he was satisfied the ranks were properly dressed. The Greys were on the site of their own camp and had to start the advance over ground mined with rain trenches and cluttered with picket-ropes, sick horses and camp equipment. The Greys and Inniskillings were traditional friends, and both regiments had last seen action in the front line of Lord Uxbridge's suicidal Charge of the Union Brigade at Waterloo, when three regiments (the Scots Greys, the Inniskillings and the Royals) charged 20,000 French infantry and captured two French eagles, 2,000 prisoners and nearly 70 guns for the loss of just over 200 men. On that day, as on this, the Greys rode on the left of the Inniskillings. The pace of the advance was painfully slow as the Greys picked their way through the camp-site, the Inniskillings holding back to keep abreast of them.

Trumpets rang out as the Greys and Inniskillings of the front line charged straight at the centre of the Russian cavalry. The distance between the opposing front lines was only three hundred yards, barely enough room for the horses to gather momentum as they charged uphill. In halting, the Russians had committed a fatal error, for although the wings of the crescent threatened to annihilate the front line as it passed, the Heavy Brigade was presented with a rare opportunity. Since troops receive a charge with far greater shock when stationary than when moving, the Russian behaviour meant that the effect of the British squadrons — small though they were — would be greatly magnified. The success of the charge however owed itself as much to the distribution of the attack as to the effect of the initial shock.

As the front line of the Heavy Brigade swept on furiously towards the Russians, up went the wild Irish yell of the Inniskillings and the 'growling moan' of the Greys. The Greys turned to the left slightly to strike the Russian right which was swinging round to enclose them. The first squadron of Inniskillings in the second line, keeping in perfect alignment, tore in obliquely on the Russian left. The front line, with

Sir James Scarlett, his trumpeter, his orderly — a giant named Shegog — and Lieutenant Elliot[6] way out in front, seemed to be swallowed up for an instant.

The action took place amid an atmosphere of theatrical unreality for the observers on the Sapouné Heights, 600 feet above the level of the plain. The clamping of bits, the clashing of sabres, shouted orders — all were clearly audible on the heights. The spectators could hear a roar from the battle below which was said to be the 'violent and ceaseless cursing' of the British troopers as they hacked at the thick Russian uniforms — the coats were 'so thick that they turned the points of the swords, the shakos so stout that they could not be halved with a hatchet.'[7]

The 5th Dragoon Guards smashed into the Russian left as it closed around behind the front line. At this point it could be seen that the Russian phalanx was swaying — under the impetus of the repeated blows the Russians were visibly being driven backwards up the slopes. The front line of Greys and Inniskillings broke right through the first Russian body and immediately charged straight into the second. The second Russian line, already disorganized by the pressure of the front line falling back upon them, was shattered by the charge of the Greys and Inniskillings — then the other regiments hit.

The massive Russian formation was already badly shaken when Lucan ordered the 4th to charge. The dragoons had been 'dying of impatience' as they watched the other regiments charge, and now — their eagerness unleashed — they rode parallel to the line of attack taken by the Greys and Inniskillings, then wheeled to the right, striking the Russian right flank, and rode through the enemy force from flank to flank with the loss of only one man. The Royals also had moved up, and without bothering for orders launched themselves on a line of attack which would take them between the 4th and the 5th. Unfortunately all formation was lost and the attack on the south-western angle of

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[6] Elliot, formerly an officer of high rank in India but who had been obliged to begin at the bottom of the promotional ladder upon his return to England, killed a Russian officer who was positioned out in advance of the leading enemy ranks. As he dashed past on his charger, Elliot impaled the officer up to the hilt of his sword and could not immediately get his weapon free. He therefore reached the enemy line waving his bloodied sabre several seconds behind the other three, who, as Peter Gibbs in *Crimean Blunder*, (London 1960), p. 205, puts it, were 'now somewhat heavily engaged'.

[7] Cecil Woodham-Smith, op. cit., p. 229.

the Russians was largely ineffectual, because the regiment reached the Russian ranks in groups of two and three. They were recalled and reformed for another attempt, but it proved unnecessary. The Russian formations had crumbled and the masses of enemy horsemen turned and fled in utter rout. A great shout went up from the men of the Heavy Brigade, the Light Brigade and from the spectators on the heights. Many of the men who had been so tensely engaged in the furious combat openly wept with joy. Much of the action had been so close that there had been scarcely room to wield a sabre, and it had been as much as the troopers could do to wedge their horse into gaps in the Russian ranks and jostle the enemy.

The entire action had taken only eight minutes after Sir James Scarlett ordered the charge but the Heavy Brigade was too disorganized to pursue the Russians as they fled bewildered over the ridge, though some isolated groups did attempt a pursuit. The Russians had suffered over 400 casualties, mostly wounded, while the Heavy Brigade had sustained only 78 men killed and wounded. Heavier casualties were sustained by the Heavy Brigade later that same morning when the brigade came under cannon fire while covering the retreat of the remnants of the Light Brigade after their historic charge.

Lord Raglan sent his aide-de-camp, Lieutenant Curzon, to congratulate Scarlett with 'Well done!' 'The old officer's face beamed with pleasure when he received the message. "I beg to thank his Lordship very sincerely" was his reply.'[8]

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Throughout the action Lord Cardigan's Light Brigade had remained a passive onlooker only five hundred yards away, as Cardigan did not feel he was entitled to join in the battle without orders.[9] As Scarlett's onslaught sent the stunned Russian squadrons fleeing back over the Causeway Heights, the men of the Light Brigade sat cursing and swearing, but inactive. Lord Cardigan himself is reported to have said, 'These damned Heavies will have the laugh of us this day.' Had Cardigan sent the regiments of the Light Brigade crashing into the Russian flank which lay invitingly before them, or had he at least pursued the fleeing Russians, the Charge of the Heavy Brigade might

[8] George Brackenbury, *The Campaign in the Crimea,* (London 1855), p. 68.

[9] Cyril Falls, op. cit., p. 160.

'have taken its place as a classic in military literature, and the host of the Russian horse might have suffered a discomfiture with few parallels in the history of war.'[10]

The Charge of the Heavy Brigade was made at the crucial moment in the battle for Balaclava and there can be no doubt that Scarlett's neat, textbook victory had transformed the whole battle. The imminent defeat of the British had been averted. Balaclava had been saved. After witnessing the defeat of their cavalry the Russians did not seem disposed to attack again, but remained inactive behind the captured redoubts.

Raglan planned to use the advantage won by the Heavy Brigade to regain the Causeway Heights. Through a misunderstanding caused by a vague order, and compounded by a 'long-standing antipathy' between Lord Lucan and Captain Nolan (the staff officer who carried the order to Lucan) which 'prevented the brief conversation which would have sufficed to make it clear to Lucan precisely what he was being ordered to do,'[11] the Light Brigade was sent to charge the wrong set of guns. This mistake was to cost the lives of 113 men and cause another 134 wounded out of the 673 heroes who rode into that immortal 'valley of Death'.

The Battle of Balaclava automatically reminds most people of the Charge of the Light Brigade, but it was the feat of the Heavy Brigade which had saved a very dangerous military situation. History has glorified the monumental disaster; it has forgotten the glory of the Charge of the Heavy Brigade. □

[10] Cecil Woodham-Smith, op. cit., pp. 231-2.

[11] Cyril Falls, op. cit., p. 160.

Oriental Insurgent Strategy

Captain Jack Stevenson
United States Army

FOR centuries guerilla tactics have been known and practised. Yet they were accorded little credence by military professionals. But the twentieth century has witnessed Mao Tsetung and a rash of lesser insurgents place considerable reliance on guerillaism. The reason for the new power of guerillaism is that Mao, the theorist, elevated it beyond mere guerilla tactics to an effective guerilla strategy. The significance of this strategy is that it affords the weak a means to oppose and sometimes defeat the strong, hence its appeal among would-be insurgents. Mao's theory is predicated on the assumption that certain factors will be favourable to an insurgent force based in an 'emerging' country and, conversely, disadvantageous to a counter-insurgent force based in a technologically advanced nation.

Mao's guerilla strategy enabled him to seize control of China, and his ideas have not gone unnoticed elsewhere. Here are some of the elements of Mao's strategy. His first step was to combine a viable political movement with military force.

Establishment of a Political/Military Organization

That aspect of insurgency which is tangible and readily apparent is the military part. But successful insurgency is essentially a political phenomenon. Militancy without political fervour produces mere mercenaries in a hostile environment; politics without militancy produces no power in a non-democratic country. It is the combination that makes the environment inhabitable and lends power to the cause.

Captain Stevenson served for several years in the National Guard. When the conflict in Vietnam developed he volunteered for active and combat duty. He served in Vietnam as a company commander in 2nd Battalion, 7th Cavalry, 1st Cavalry Division (Airmobile) and Logistics Officer, Task Force 2/7, 1st Cavalry Divison (Airmobile). Other assignments include Project Officer and Instructor at the US Army Infantry School and in the latter appointment he researches and teaches insurgent doctrine and official US Army doctrinal response to insurgency.

Chinese military forces had been notoriously unreliable and were feared and hated by the civilian population. Mao corrected that. More time was used for indoctrination than was used for other military training. What Mao produced was a soldier who believed in a cause and was willing to fight for it, even die for it.

Since a guerilla force cannot exist without support from at least part of the civilian population, Mao also carried his political indoctrination to the civilian community. Without the political effort Mao would have been just one more war lord with an undependable military force, a military force despised by the civilian community. The political movement enabled him to gain recruits, food, intelligence, and asylum from the civilian population.

There was no certainty that politics alone would enable Mao to gain control of China. It was military force that carried the party line to non-believers. It was military force that prevented Mao's annihilation by jealous war lords, by the Japanese, and by the central government of China.

A viable political movement was not enough. Military force was not enough. It was the combination that produced a powerful instrument for the seizure of power. Today, this type of instrument is sometimes called a 'combat party'.

Manpower Advantage

Mao's insurgent force, like most, started from nothing. His opponents possessed both industrial base and modern military weapons. He knew that he could not develop the quantity of firepower possessed by his opponents. He reasoned, however, that this shortcoming could be counter-balanced by the almost unfathomable manpower available to him in China. The idea of manpower advantage has several manifestations. It is more than simple arithmetic; it is a willingness to sacrifice lives. Perhaps the idea was expressed in a meaningful way by a North Vietnamese leader when he told a Western observer, 'You will lose one man and we will lose ten, but in the end it is you who will tire of the war'. We have also seen the idea expressed in the form of human wave attacks. It has at least one other aspect.

Insurgent leaders seldom have formal military training. They must gain their know-how through 'on-the-job' experience. Experience is a good teacher, but an expensive one. General Giap gained his experience in what he called the 'academy of the bush'. Giap always admitted his

blunders, privately, in good Communist fashion. Each of his learning experiences can be identified by numerical code: the number of lives he wasted, measured in thousands.

Dissension in the Enemy's Homeland (Camp)

Mao's guerilla strategy depends in part, for its success, on dissension in the opponent's homeland. Fifty years ago Mao had developed the idea that modern technological nations were impatient and that he could benefit from that impatience. Mao thought that his opponent would suffer from 'war weariness', 'pessimism about the prospect of the war', 'anti-war sentiment', 'discontent', and concern over 'capital outlay', and 'casualties'. His foresight seems to have been reasonably correct. However, an insurgent leader does not passively rely on the dissension factor. He acts to create it. He acts through diplomatic and clandestine agents to ensure that dissension develops. There is one other factor in Mao's strategy that purposefully promotes discontent in the opponent's camp. It will be discussed later.

International Factors

The strategy further relies on other international factors, some of which can be influenced by the insurgent leader:

- Mao believed that his opponent would be condemned by world public opinion. He believed that his underdog position would be viewed as morally superior to that of his opponent. Mao's propaganda in the United States painted him harmless agrarian reformer.
- Recognizing his weaknesses Mao foresaw a necessity for international support. International support can take many forms; money, manpower, equipment, favourable publicity, etc. Insurgent movements seldom succeed without international support.
- Mao also reasoned that any modern advanced nation would have multiple commitments and sooner or later one of these would divert the opponent's energy and resources away from China. It is interesting to note that insurgent leaders now speak of international co-ordination of insurgent movements.

Avoidance of Strategically Decisive Combat

Mao's central problem was to devise a strategy that would enable a weak force to stay in business against a strong force. Very basic to all of Mao's thinking was the idea that the weak insurgent force must

absolutely avoid strategically decisive combat with a superior military force. This preserves the weaker force. This protracts the war, and intentional prolongation of the struggle is the ultimate weapon of guerilla strategy. The insurgent leader does accept decisive combat in a tactical sense, but he refuses to allow his military force to be committed to a strategic decision until and unless he gains unquestionably superior military strength relative to that of his opponent. 'You can't beat 'em if they won't fight'. The strategy does allow for tenaciously fought tactical engagements (to the last man) when it serves a useful purpose. The avoidance of strategically decisive combat is not aimed at preserving life, it is aimed at preserving capability.

This idea, the avoidance of strategically decisive combat, is hard for the Western mind to grasp. Our traditions do not countenance a programme of continual withdrawal. There is no stigma attached to retreat in the Oriental strategy. It is esteemed.

Use of Time as a Weapon

Mao consciously advocated the use of time as a weapon—'Ultimate victory lies in a strategically protracted war'. It is the passage of time that diminishes the opponent's *will* to continue, or renders his victory Pyrrhic. Time is the most powerful weapon available to an insurgent force. An insurgent leader intends to stay the course as long as necessary. He assumes his opponent will not retain the field indefinitely. Insurgent strength grows slowly—in time.

Protraction of the conflict does raise questions in the opponent's camp. Perhaps those countries where the Christian heritage is strong are exceptionally vulnerable to the 'time' weapon, because they tend to hold a condition called 'peace' in the highest esteem. Peace is actively sought and it is expected. Continual conflict is undesirable, unacceptable.

The passage of an inordinate amount of time also diminishes the opponent's credibility. The counter-insurgent claims to be a capable political and military entity. The 'time' weapon casts doubt on that.

Space Advantage

Mao believed that China's vast territory would be an asset to him. Space would enable him to manoeuvre, and manoeuvre would enable him to avoid being drawn into a strategically decisive military contest before he was ready. It would be well for us to remember that from

the standpoint of military analysis, the size of a country is determined not solely by square miles, but also by weather, terrain, vegetation, and the attitudes of the indigenous inhabitants. In other words a small country could offer the insurgent just as much manoeuvre potential as a large country.

There is a relationship between some of the elements of guerilla strategy. Space yields manoeuvre capability; manoeuvre enables the insurgent to avoid a premature, terminal military decision; avoidance enables the insurgent to protract the conflict, and time is the ultimate weapon. Insurgent political philosophy and manpower attitude enable him to use time to his advantage while it works to his opponent's disadvantage.

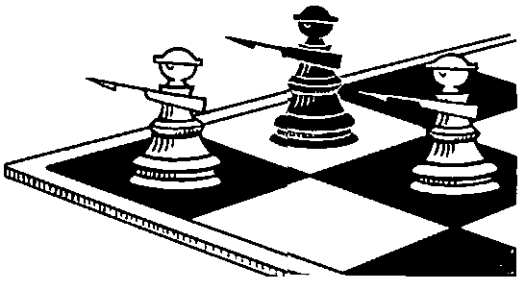
The theory governing the conduct of an attempt to seize power is attributable to Mao Tsetung and his immediate entourage. However, the theory has been rigidly tested elsewhere. The promoters of insurgency in Vietnam have applied the concept from the outset. A note in that regard—a Comintern agent was assigned to China during the 1920s to maintain close liaison with events there. The agent's name was Michael Borodin. Michael Borodin had a personal secretary. The secretary's name was Ho Chi Minh. □

MONTHLY AWARD

The Board of Review has awarded the $10 prize for the best original article published in the March 1970 issue of the journal to Captain J. F. Crossman for his contribution 'Ambush'.

Chess and the Principles of War

Major A. Weaver
Royal Australian Infantry



Chess and War

CHESS is a game of strategy and tactics. War is not a game; but the strategist/tactician and the chess player both observe rules fundamental to the attainment of victory. Students of chess may wish to reflect on its similarity to war in more detail—therefore I offer them the well-tested Principles of War as a fitting analogy to the maxims of chess.

Selection and Maintenance of the Aim

The 'Master Principle'. Here we are given no alternative. The aim of the game is 'to checkmate the enemy King'. Sometimes in tournaments we are given limitations as to time or number of moves —both important factors for serious consideration.

The tactical aims, however, may vary for each part of the board where 'divisions' or 'task forces' are engaged in operations with limited aims—all aims though must be directed towards the supreme aim. For instance, we may have a situation where it is essential to Castle the King urgently in order to prevent a crippling enemy attack; at the same time we may have a lucrative target area for our Bishops and Knights to exploit: concurrently we may find it expedient to secure the centre of the board with our Pawns. Each situation requires a separate technique for effective execution, and thus a separate and limited aim which

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must be considered in the light of the supreme aim. Unless the subsidiary aims are considered in meticulous detail, and by the best appreciations, the supreme aim will suffer. Once the player has decided on the most effective course, he has still several other possibilities left for the continuation of the game; each possibility having its own limited aims. The aims, as in military operations, will only be changed if a changed situation presents itself and thus demand a re-appreciation and a new plan.

Chess players often fall into the trap of changing their aims, and thus their plans, as their opponent develops his game. Such falling to temptations invariably has the same disastrous results as a change of plans has on military operations when battle is joined. This principle has been placed first, as it is the 'Master Principle'. The remaining principles are not given in any particular order since their relative importance will vary according to the nature of each game.

Concentration of Force

To achieve success in war it is essential to concentrate force superior to that of the enemy at the decisive time and place. This does not necessarily imply a massing of forces, but rather having them so disposed as to be able to deliver the decisive blow when and where required, or to counter the enemy's threats. In chess, the careful positioning of the pieces, and the judiciously planned design of the Pawn structure, will ensure that the pieces can be committed against any target area on the board when required. Players must beware of the trap—which tends to make them concentrate their striking power—by placing Bishops. Knights, Rooks or even the Queen on adjoining squares, with the idea of achieving concentration. Often such concentration is illusionary and can only invite disaster in the same way as a large military target invites destruction. Such pieces usually achieve concentration best from secure bases which afford them effective 'lines of fire' against contested areas, so that they may be called upon to unite in attack, defence, counter-attack or for covering a withdrawal whenever expediency dictates such a course.

Offensive Action

Offensive action is necessary for victory. It may be delayed, but until the initiative is seized and the offensive taken, victory is impossible. As in war, without adherence to this vital principle the most experienced player cannot hope to win.

No matter how strongly a player defends his King with a screen of Pawns, and a cordon of powerful pieces, an offensive enemy will achieve victory by forcing well calculated exchanges of pieces and, when the board has finally been cleared, such an aggressor will be placed advantageously; poised for the final assault at the gates of his exhausted opponent, whilst his own King is safe and remote from the area of conflict. Always march towards the sound of the battle, or accept inevitable defeat.

Surprise

Surprise is a most effective and powerful influence in war. Every endeavour must be made to surprise the enemy and to guard against being surprised. On first consideration we may argue that a fitting analogy cannot be made between chess and war, as concurrent action cannot occur in chess. However, when studying published games of the great masters one can find countless examples of the use of surprise. In chess, surprise is achieved by luring the enemy into a trap, offering him lucrative and attractive targets, or by feigning attacks against one flank prior to a *coup de main* on another flank; or by the most spectacular play—the Queen sacrifice. This forces the opponent to capture the powerful Queen, offered to him by a bold move, which invariably is followed by a devastating battery of forcing moves *(Zugzwang)* and inevitable defeat. As in war, the elements of surprise—secrecy, deception, originality, audacity and rapidity—apply. In tournament chess rapidity is essential.

Security

Every commander is responsible for the security of his force. The chess player has a similar duty to his pieces and Pawns. The King, being the prime target, must be secured at all costs. In most cases this is achieved by early castling moves (the *Rochade)* otherwise alternative action must be taken to safeguard the all-important King against surprise attacks. Great care must be taken to avoid the temptation of embarking on an offensive operation before adequate steps are taken to protect one's King first.

The most common mistake made by the unwary player is that of being caught in a devastating checkmate by an enemy Rook, whilst the former has his King on his first rank blocked by a line of his own Pawns. Almost invariably the sad loser enjoys overwhelming superiority

at the time of his defeat; he merely failed to adhere to the principles of security.

The other pieces and the Pawns must likewise be afforded security by mutual support or covering fire lest they invite defeat in detail. Furthermore, mutual support must be so designed as to ensure that forced exchanges result in equality of loss to both sides. We must not sacrifice a Bishop for a Pawn, or a Rook for a Knight and certainly not a Queen for anything else. But again, as in war, such sacrifices are quite in order after careful consideration has been given to the likely strategical and tactical advantages to be gained from such action.

Flexibility

Flexibility of mind and rapidity of decision are essential when playing tournament chess against the clock. Physical mobility, both strategically and tactically, is mandatory in chess as in war. Without such mobility rapid concentration at the decisive place and time is impossible. In chess, the Knight provides the best means with which to obtain flexibility of movement, but the entire Pawn skeleton and the disposition of pieces must be so designed as to achieve maximum manoeuvrability of pieces. In the end-game, successful Pawn promotion is important for the attainment of victory. This is often best achieved by advancing 'passed' Pawns on widely separated files. Unless the opponent enjoys flexibility of movement he will not be in a position to prevent such Pawn promotion, as his pieces will fail to reach the Pawns concurrently or successively.

Flexibility is often hampered by thoughtless self-blocks, which restrict one's own pieces to non-effective squares. Whenever possible such restrictions should be exploited by the opponent by further sealing the area off.

Economy of Effort

This principle implies a balanced employment of forces, and a judicious expenditure of all resources with the object of achieving an effective concentration at the decisive time and place. In chess, the correct positioning of the various men in accordance with their capabilities is of utmost importance in any plan of action. Disastrous are the consquences suffered by the tyro who makes the classic mistake of sending his Queen across the board on seemingly devastating raids, with apparently spectacular results, but without ensuring that the remainder

of his force has been developed. He invariably faces an enemy slightly weaker in strength, but fully developed for an effective offensive, whilst his own pieces are blocked defencelessly within the confines of his Pawn shield. Tournament chess dictates rapid development of pieces and the player who fails to achieve this will be at a serious disadvantage towards the end of the game. The tyro often moves, without justification, the same piece more than once early in the game, resulting in lack of development.

Co-operation

Co-operation entails the co-ordination of all units, so as to achieve the maximum combined effort from the whole. The inter-dependence of one chess piece on another is as vital in chess as the goodwill and desire to co-operate between units and services in modern war. Thus we must restrain ourselves from sending the Queen, Bishops or Knights on lone missions without adequate support; nor must we allow lonely passed Pawns to remain *en prise*.

Administration and Maintenance of Morale

These two vital principles of war are placed together to emphasize their relative importance. They complement each other in war, as without good administration morale will invariably suffer.

In tournament chess, where time-planning is of paramount importance, and where the 50-move rule is often invoked, players undergo great stress and strain. Unless players have an understanding of how to plan their timings their morale will slump when they encounter time trouble *(Zeitnot)*. Many a grandmaster has lost a game which was within his grasp only because his morale went to pieces towards the end of the game: the penalty for bad administration. As this factor is most important, some additional reflections must be made on the application of this principle of chess.

Unlike men on the battlefield, the pieces on the chess board have no feelings, no fears, no hopes, no courage and no human failings; but the player must act as the commander-in-chief of his pieces and Pawns and pretend to be a part of every man on his side. Only thus will he achieve the deep understanding so vital to the successful conduct of this fascinating game. As the player must assume this position, it is *he*, not the pieces, which must become the target for demoralization and psychological warfare. This is achieved by a number of devious means.

In chess no talking is permitted other than the words 'check', 'checkmate', *j'adoube;* so psychological operations must be conducted in a special manner. Here are some tricks out of a big bag:

- Frequent and obvious glances at one's watch when opponent is in *Zeitnot.*
- Looking worried and sighing when about to make a move which is designed to trap the opponent.
- Looking triumphant and elated when opponent is likely to make a devastating move. This often unnerves him and makes him over-cautious.
- Making sharp and resolute moves when actually in doubt whether such moves are of substance.
- Making hesitating and half-hearted moves when hoping to spring a surprise in a subsequent move.
- Whilst advancing Pawns in the end game, toying with one's Queen which was previously captured by opponent. This often cripples him with fear, particularly when in *Zeitnot.*
- Getting up from chair between moves and walking around room whilst taking deep yoga breaths. Fifty push-ups done in rapid succession seem to have an intimidating effect on some opponents.

Conclusion

The student of chess is strongly advised to heed the principles of the game. It must be stressed that mere adherence to the principles of war, without taking every opportunity to deny them to the enemy, will not achieve maximum success. Chess, if looked upon as a game which requires deductive thinking, similar to that required in military appreciations, will give much enjoyment to those who seek such intellectual outlet. □

Guerilla Warfare

Major F. R. Bond, RL

EVERY country has a rigid structure brought about by the normal activities of earning a living. There are ports for the loading and unloading of ships; airports for the loading and unloading of planes; rivers, canals, railways and roads for the transport of goods. There are bridges to permit rail and road traffic to cross rivers, canals, railways and roads. There are cities to house the population necessary to conduct manufacturing, commerce and trade.

Regular forces have the problem of defending this basic structure, and since it is difficult for a sizable force to live off the country, regular forces must have their own means of supply—by water, land or air.

The supplies for the regular forces and for the population must come from farmed land and fishing. They must either be purchased in the country in which the force is operating, or they must be brought in from other countries, again by water, land or air.

The guerilla does not, in the early stages of his activity, require this rigid support structure. However, he does require the political, material, moral and security support of the people among whom he must move.

For our present purpose it is sufficient to consider only guerilla warfare in the countryside. For the study of guerilla warfare in cities there is a wide variety of books available on the Spanish Civil War,

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Major Bond was educated at King's School, Grantham and University College, Leicester, where he passed the B.Sc. (Special) Examination of London University (1940). In 1941, after OR service, he was commissioned into 1/5th Battalion The Leicestershire Regiment. In 1944 he was selected as an Operational Research Scientist, serving at the School of Infantry and with No. 10 (Indian) Operations Research Section (Burma) where he was promoted to major. In January 1951 he resigned his commission with the British Army and granted the rank of Honorary Major, The Royal Leicestershire Regiment. Commissioned into RAAOC in 1951 he qualified later as IOO. In 1954 he was seconded to Operations Research Section (Malaya), returning as AAORG, AHQ. He was retired in September 1956.

This article is a chapter from Major Bond's recently published book, Vietnam —A Basis for a Right Opinion, *reviewed in this issue by Dr T. B. Millar.*

the French Resistance Movement, and the Stern Gang and Haganah in Palestine.

Like the poor, the political agitator will always be with us. There are many outlets for those in the population who seek power; in politics, in religion, in business, in government administration, in trades union movements, and in the armed services; and, in the arts, in acting, journalism, writing and music. However, there will always be power seekers who, by force of circumstances or indolence have not been prepared, or not had the opportunity, to undergo the disciplined training necessary to fit them to hold the position of power.

If the villager or peasant has good reason to be content and happy, achieving satisfaction in his farming activity, family and village life, then the political agitator is no problem. Any small band of malcontents he may be able to gather and arm become mere bandits. Provided the villagers can be protected against reprisal raids, the elimination of bandits is not difficult, particularly if the subtle approach be used.

The removal of the bandit problem in the Chin Hills between India and Burma is a case in point. This *petite histoire* is recounted as told by junior officers of the Chin Hills Battalion. It has not been verified, but having regard to the high quality of both officers and the Chin Hills tribesmen, as individuals and as soldiers, the author has no doubts as to the veracity of the account which follows.

In the distant days of the British Raj, the villagers in the plain of Bengal and the Burmese villagers on the central plain of Burma were suffering from the depredations caused by raids made by the virile hardy Mongol mountain people whose home is the Chin Hills.

A British Resident, wise in his generation, gained approval and finance for, and put into effect, the arrangement which follows.

Knowing the name of the chief brigand, and with due and full regard for Asiatic local courtesy and custom, he arranged to pay a formal visit on this gentleman. After the normal politenesses, and a delay of a suitable number of days—for in Asia it is blatantly rude to rush and bluster—the Resident informed the chief brigand that, due to that gentleman's high standing among his own people, and the high personal regard and respect in which he was held by the Viceroy, the Resident had been requested to confer upon the chief brigand the rank of honorary colonel of the regiment. This was a rank normally reserved

for the reigning monarch, princes, senior generals and high ranking officers in the British and Indian Armies.

However, the new honorary colonel would require a regiment, for which the Viceroy wished to prescribe the usual pay, allowances, clothing, equipment and rations. Moreover, the Viceroy wished to assist by providing a lieutenant-colonel, with a staff of a few suitable carefully selected officers, warrant officers and sergeants, so that the new honorary colonel would not have the additional work of the day-to-day running of the regiment. However, the Viceroy would greatly appreciate the new honorary colonel's help in recruiting the necessary men.

The men were duly found, and, of course, consisted of the very bandits who had conducted the raids.

Thus the problem was solved at the cost of the maintenance of a single battalion; whereas it would have taken at least a division to provide a doubtful protection for the Bengali and Burmese villages.

A similar method was used in the days when the main oil pipe line ran through Arab areas to Haifa. The Bedouin, having been properly taught by Colonel T. E. Lawrence in the technique of destroying the Turkish railway from Damascus to Mecca, applied this technique to the pipeline. When the repair crew arrived, they could conveniently be ambushed and their persons and transport robbed. To avoid this, each sheik was induced to become a 'Protector of the Pipeline' and was supplied with a suitable sum to provide a patrol on that portion of the pipeline which ran through his tribal area, to protect the pipeline and any maintenance crew moving along it. This procedure was the most economic solution.

The fundamental in the brigand problem is to evaluate accurately the basic reasons why the brigands chose that life, and act to eliminate those reasons.

However, where villagers have a real or imaginary cause for grievance, the situation is not so simple. Among the causes in the still developing countries are excessive rents and absentee landlords, high taxes and tolls, both legal and illegal, which leave the villager with less than 60% of his crop for his personal use. Other evils are money lent at high rates of interest, shortages of water, food, clothing and adequate shelter; the lack of sanitation and medical care, leading to poor health; and the lack of other than very limited education facilities.

Where these situations exist the political agitator will obtain converts, particularly the well-trained communist agitator, practised in arousing an emotional response.

To repeat, the poor and the political agitator will always be with us. The poor we can all do something about; we can strive to achieve a reasonable standard of water supply, nutrition, clothing and shelter, with adequate health and schooling facilities. However, this help must be given in a way that does not offend simple human dignity. We must help people to help themselves. Wherever a group's requirements are deemed to be a reasonable method of self help, we should help in their way, rather than impose some superior form of help onto the group. Where experiment proves that the group's concepts are inadequate, or even larcenous, then motivating examples of more suitable methods should be demonstrated. The more important United Nations agencies are working along these lines, but the pity of it all is that Mr and Mrs World Citizen are, in the majority, too smug, too complacent, and too indifferent even to take an interest.

The political agitator is in a different category. He, at least, is interested. We must permit freedom of speech and the expounding of ideas different from our own, except where they lead to violence. Violence will occur on a major scale when the reasonable people involved have become so frustrated that they can imagine no other way of bettering their lot, or when group dignity has been mightily offended.

However, communism, as evidenced by those societies which call themselves Socialist Republics, or Peoples' Republics, represses the freedom of the individual. Communism permits a highly disciplined *élite*, to which entry is very restricted, to hold power greater than that permitted in any other type of society. This power is used with great severity to resist internal challenge. Surely, no person of any sensibility would wish this situation to be imposed upon himself or his neighbour. Everyone in the world is his neighbour.

The first requirement then, in any nationalist or peasant revolt, is to work energetically to remove the basic causes of the revolt, so that we deny to the communists the opportunity of using the revolt as a 'front' movement which will lead eventually to communist domination.

Early warning of the activities of communist operators can readily be given if police forces and district administrators are efficient and alert. However, in eastern countries the policeman will frequently tell

his superior that which he thinks his superior expects and hopes to hear. This trait, of course, is not limited to eastern countries. In any administrative service, police force or armed forces organization, there are many persons in all ranks and grades who do not make it their main effort to do the right and proper thing. In fact, they do not make a main effort to do anything. The only effort they do make is to avoid anything that looks at all difficult, and to make sure that, if they do anything wrong, or incorrect, they are not found out or made responsible. It is only the exceptional administrator, police chief, or general, who has more than a superficial, and that often erroneous, idea of the real happenings and events in his own field of responsibility. Communists try to avoid this situation by the religious fervour of party preaching but, since they deal with human beings, it is doubtful if they wholly succeed. This is merely a small example from the vast reservoir of human apathy and indifference.

Where the communists succeed in forming a base area supported by a group of villages, the first task of the national administration is to provide protection for villages surrounding this disaffected base area. The mere stationing of troops in the area is not enough. What is required is a small group of servicemen for each village who can fully integrate with the villagers and so learn their needs and problems, and the troops must have access to persons who can, and will, solve these problems. The group must include persons with medical and hygiene knowledge. If the groups consists of servicemen from an overseas country which has been asked by the recognized government to assist, they must not only learn the local dialect and language but also schools must be organized to teach the language of the overseas country, since youngsters are keen observers and more likely to report accurately and truthfully than their elders. The servicemen should be largely countrymen as opposed to townspeople, and their psychological approach to the villagers is all important.

The protection of the village should be provided by paid volunteers, where possible from within the village. They must be paid, because they cannot both plant and reap rice and other crops and, at the same time, carry out protective duties. This is the most economic way, since it would require ten times the number of regular troops, who would succeed in the task far less effectively.

This means that the troops in the villages must be supplied with food and clothing, involving a supply base with lines of communication

by water, land and air. We shall deal later with the problem of the size of bases from which these needs are supplied.

Having surrounded the communist infested area, the next effort should be to put similar groups into those villages controlled by the communists. The aim should be to surround the village, and enter in adequate force; to cause the communist to withdraw without harm to the villagers and with the minimum of damage. To harm the villagers is the surest way of making more communist supporters. If the village is damaged in any way the damage must be repaired immediately so that the final condition is superior, in the eyes of the villagers, to that which existed before the troops arrived.

In the early stages, communist guerilla tactics aim at withdrawal and dispersal whenever regular troops attack. Withdrawal is the most damaging operation that an inferior force can conduct. If the regular troops overrun their supply capability and halt, or if they extend a water or ground supply line, then guerilla parties will attack, usually on the flanks or in the rear, or by ambush on the supply line.

If regular troops withdraw, then guerillas attack, frequently by harrying the flanks. A favourite tactic is to decoy the main force away from its base, so that the base itself can be attacked. This means that every sailor who is on land; every soldier, irrespective of his task or the location of his principal task; and every airman, whenever and wherever he happens to be on the ground; irrespective of rank, must be able to operate as an efficient infantryman.

Too often, the rapid *ad hoc* organization of an effective force from an accumulated group of servicemen from different services and different countries is not included in training programmes. In efficient national forces, this situation is supposed to never arise. In war, particularly in guerilla war, it always arises. Where an officer has taken the trouble to work out what he would try to do in a number of the infinite variety of these situations which can, and do, occur, there the situation is often saved. Otherwise chaos results and a small group of determined men wreak havoc with many times their number.

We now consider the likely communist reaction when 'their' villages are taken over. The first likely reaction is to concentrate a force which they deem sufficient to retake the village. To prevent this requires early intelligence and rapid communication to a regular counter-attack force, which should be not more than two or three hours away in time.

Where a number of communist attacks fail, with the result that the communists are denied their supplies, the likely communist move is to disperse and attempt to start a base in a new area. However, if the integrated village groups are withdrawn, the communists will return.

Thus, as far as manpower will permit, whatever the stage of the communist campaign, the integrated groups in the villages should be the first to be installed and the last to be withdrawn. It should be noted however that unless these integrated groups succeed in making the villagers' lot better than under the communists, and can ensure that the villagers retain their self-respect as individuals the whole enterprise is likely to fail.

Again, supply to those village groups should be direct, rather than through the administrative system, otherwise supplies and goods are likely to disappear *en route*. In Asian administration, graft and corruption abound. It must be remembered however that graft and corruption rear their ugly heads in local administration in all countries. Graft and corruption are rather like icebergs; that portion which can be seen to exist, having been brought before the courts, is small in relation to the total.

Further, in most Asian countries the colour bar, against a black skin, is even more prevalent and more ingrained, than in most European communities. Wherever it is possible the initial members of integrated groups should exclude our dark-skinned brothers. There are of course exceptions; many of our dark-skinned brothers have the type of personality which is accepted and admired everywhere.

Again, the ideal tour of duty for these integrated groups is at least three years, with half the group changed at eighteen months. Care must be taken that individuals selected as replacements fit in with the group's existing members. Inevitably, casualties will require some earlier replacements.

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Where the communists succeed in setting up a number of bases they will attempt to form their guerilla units into regular type operational forces, so that when the countryside is under their control they can organize attacks on towns and cities.

The type of attack may vary from the 'hit and run' raid to the supported infantry attack, with a view to occupying the town; for recruiting, gaining supplies, or intended permanent occupation.

To prevent this the commander, who will always have fewer troops at his disposal than he requires, needs adequate and accurate information. This information can come from integrated police-military information centres in each district; the use of 'Phantom' or 'Z Force' patrols who, unseen, keep watch on the activities of each located communist unit; the use of aerial reconnaissance, with all its refinements; and constant patrolling, particularly by infantry.

When communist bunkers and concentration positions are located in the jungle, the task is one of normal warfare, but even when the communists have been driven out and the bunkers destroyed the area must be frequently patrolled to prevent reoccupation.

Alternatively, the communist attack may be by long-range weapons only. Where the firing sites of these attacking weapons are in jungle, reply can be made with artillery, aircraft bombing and strafing, or helicopter gunships. However, to realize the difficulty one has only to witness three field regiments, well officered, excellently trained and equipped, failing, for three whole days, to silence a single Japanese field piece which fired from locations well within range, but operated in hilly jungle.

Weapons fired from pre-sited bunker positions are difficult to eliminate. Bombing by tactical aircraft is virtually useless, only the very lucky direct hit is effective. This has been shown time and again by scientific field trials in jungle, and by detailed inspection after actual raids. Bombing on a massive scale by strategic aircraft is apparently more successful, but the cost is high—about $US27,000 for each aircraft in each raid. Since guerilla warfare is a long term communist method, the anti-communist effort must consider effects on national economics. One adverse effect of bombing in jungle is to delay and make more difficult the silent approach of infantry to the bunker site.

On the other hand, the communists may prefer to launch their projectiles from the vicinity of a hamlet, in the hope that the defenders' fire, brought down upon the hamlet, will provide more communist recruits. The heavier, and safer, launching devices used by regular troops are not necessary. Cheap, expendable, easily hidden launching devices may be used and, unless the hamlet has an integrated defence group, the firers can readily mix with the villagers in the shelter trenches until the immediate scare is over.

A slow but sure answer to this situation is the use of efficient human trackers. Civilized man, so called, has in the vast majority lost

that useful ability of less sophisticated peoples—the art of tracking over difficult ground. The North American Indian used to be a master of this art, but the number of efficient trackers who remain, if any, is likely to be quite few.

A few good trackers, in heavily wooded and jungle conditions, still remain among the Australian aborigines of the Cape York peninsula. Their alertness and complete awareness of small, normally insignificant events so important in the art of tracking is exemplified by the following incident.

While talking with a group of Lummer-Lummer speaking aborigines near Coen, the author stubbed out a cigarette and threw it away. Every person there except the author noticed it. The improbable had happened. Each aboriginal, male and female, young and old, nudged each other and grinned acknowledgment. The cigarette end had fallen on its circular filter-tip base, with the previously lit end pointing to the sky.

In Malaya, the author was privileged to witness the almost extraordinary efficiency of the Iban trackers enlisted in the Sarawak Rangers. He was granted this privilege, possibly because he then held the rank of captain in the Australian Military Forces.

While the prospect remains, by Asian communisits in particular, of the spread of communism by every means available, including guerilla warfare, it is important that where the ability to track efficiently can still be found, as many non-communist young people as possible be trained in the art. This should be part of a major police-military programme in the countries where expert trackers still survive. Provided the tracker can be brought rapidly to the approximate launching site, and interfering track marks can be kept out of the area, the launchers of rockets and other projectiles can be traced to their lair; the tracker leading an infantry patrol in light equipment, or mule mounted infantry, to make the initial contact.

Politico-guerilla warfare is likely to continue for an indefinable period as a means of spreading communist doctrines.

Mao Tsetung[1] considers that there were certain fundamental steps in the process of organizing a guerilla campaign:

[1] *Guerilla Warfare*, by Mao Tsetung; translation by Brigadier-General Samuel B. Griffith, USMC (Retd) and by Che Guevara, with introduction by Major Harries-Clichy Peterson, USMCR; with foreword by Captain B. H. Liddell Hart.

1. Arousing and organizing the people.
2. Achieving internal unification politically.
3. Establishing bases.
4. Equipping forces.
5. Recovering national strength. (This refers to recovering the strength of China, against Japan, but can also mean recovering or increasing communist strength at the expense of non-communist strength.)
6. Destroying enemy's national strength. (This refers to Japan, but can also be understood as non-communist strength.)
7. Regaining lost territory. (Gaining full communist control of a national territory.)

As we have seen, these are precisely the steps which need to be taken by a non-communist government and its allies if it is to succeed in preventing its overthrow by communists. However, the order of priority may need to be changed. A likely order of priority can be stated:

1. Establishing bases. (This includes the provision and security of supplies against graft, illicit diversion, theft and large-scale pilfering.)
2. Equipping forces. (A large infantry component is required, with other arms and services fully trained and alive to their responsibility to act as infantry.)
3. Arousing and organizing the people. (Here the use of integrated regular local hamlet defence units is vital.)
4. Achieving internal cohesion politically. (This usually means much more effective concern and awareness of the difficulties of the 95% have-nots, rather than the cossetting of the 5% haves.)
5. Recovering non-communist national strength. (This implies economically and socially, as well as militarily.)
6. Destroying the communist strength. (But, above all, avoiding to the maximum any damage to the innocent.)
7. Regaining lost territory. (But not including the invasion of internationally accepted *de facto* communist territory.)

In this regard, the first two items require further discussion. On the question of size of bases, certain comments appear relevant. Colonel

Peniakoff[2] makes the distinction quite clearly, in considering Headquarters Eighth Army and Headquarters First Army in the North African Campaign (World War II). The hard working efficient minimum strength HQ Eighth Army is greatly to be preferred to the built-in inactivity resulting from a vastly oversized, over-luxurious, over-manned HQ First Army.

Certain types of unit require relatively large areas. As an example, we may take an airfield at which planes requiring long runways are to visit, or be stationed. Since this requires protection for a radius of about 20 miles it will require a large number of troops for its defence.

On the other hand, where installations can be split up into, say, small sub-depots, the defence of each sub-depot is far easier. The sub-units manning the sub-depots can replace infantry in hamlet defence. With multiple small sub-depots, rather than a smaller number of medium or large depots, the task of the communists in interrupting supply, by damage to major depots, is made more difficult. The total loss of one sub-depot probably has a less marked effect on the total effort than major damage to a large major depot.

We turn now to minor matters of equipment and tactics.

Major Westerling[3] has demonstrated that the silent night attack is a most efficient means of defeating communists in villages. During the Malayan Campaign this method was employed with marked success by Gurkha battalions in the British Army against communist jungle camps. (The bunker position did not develop to any great extent in Malaya). The need for rapid and silent approach, where helipads and jungle landing strips are constructed, but not necessarily manned on a permanent basis, suggests the use of powered gyro-gliders, powered heli-gliders, or short take-off and landing (STOL) powered gliders, as a means of silent approach to an area, without the noisy signalling of intention which permits communist dispersal and withdrawal.

This short look at the problems of guerilla and anti-guerilla warfare may serve as a guide by which to judge the efficiency of the South Vietnamese Army and the armies of its allies who have answered the call to assist in the defence of the people of South Vietnam, who are largely villagers, against communist activities. □

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[2] *Popski's Private Army*, by Lt. Colonel V. Peniakoff.

[3] *Challenge to Terror*, by Major 'Turk' Westerling.

VIETNAM—A BASIS FOR A RIGHT OPINION, by Major F. R. Bond. Foreword by Denis Warner. (Blackburn, Acacia Press, 1969. 89 pp.)

Reviewed by Dr T. B. Millar, Director, The Australian Institute of International Affairs.

HONORARY Major Bond of the Royal Leicestershire Regiment is a sincere man who has thought about the Vietnam war and has written, in this little book, a good deal of common sense about it. Having served with an Australian operational research section in Malaya, he is aware of the social implications of guerilla and counter-guerilla warfare, and the vital necessity for the military to keep political objectives constantly in mind.

The first half of his book, following Mr Denis Warner's good foreword, is historical—a quick look at Machiavelli, Hegel, Marx, Lenin, Stalin, and Mao Tsetung—designed to show the development of ideas that led up to the Vietnam war. Then there is a chapter (five pages) on 'Vietnam: the country, the people, and history', nine pages devoted to Ho Chi Minh, thirteen pages to guerilla warfare, five and a half to 'Don't blame the generals', four to 'the moral issue', and two, in a tailpiece, to the presumed thoughts of General Giap on his tactics following Nixon's announcement of his 'doctrine'.

Does it provide a 'basis for a right opinion' on Vietnam? Unfortunately not. While there is little that is factually wrong, and a good deal that is entirely reasonable, the historical section is sadly potted, and the thread of continuity extremely tenuous. The chapter on guerilla warfare is the best, but is still not adequate. Major Bond has never been to Vietnam, nor does he seem to have read much of the important literature on the subject. There is very little real analysis. The heavy hand of an editor is patently missing. This is a pity, because Major Bond has important things to say. An edited, revised and expanded volume could make a useful contribution. □