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Photo: Australian War Memorial, Canberra.

GIROPA POINT

In July 1942 Japanese forces landed at Buna in New Guinea and forced their way along the Kokoda Trail over the Owen Stanley Mountains. They were halted at Imita Ridge in mid September.

Australian forces then mounted a counter offensive and drove the Japanese back to their beach-head, where the Japanese established themselves in fortified positions among the network of creeks and swamps. They made their attackers fight for every yard of ground. The last strong point was finally reduced after nearly two months of bitter hand-to-hand fighting which brought heavy casualties.

The picture shows a 3-inch mortar team in action during the fighting at Giropa Point.

ELECTRONIC COUNTER MEASURES

Captain K. P. Carey
Royal Australian Signals.

THE Australian Services are making increasing use of electronic equipment for communication, control and surveillance functions. This is a natural development from the technological advances made in this field in the last two decades. However, hand in hand with this increased use comes increased reliance on satisfactory operation of these equipments, for should the system fail by any degree, then command and control facilities are correspondingly reduced.

Electronic engineering and equipment design has increased equipment reliability standards to very high levels. This advance however, solves only part of the problem. The equipments are still susceptible to external, intentional interference. This susceptibility is well known and is the basis for Electronic Counter Measures.

Electronic Counter Measures (ECM) is a term used to describe a wide variety of equipments and techniques which are designed to reduce the enemy potential. This is achieved by detecting, disrupting and deceiving his radio communications, control radars,

surveillance equipments and electronically controlled weapon systems. These equipments and techniques can be generally classified into three categories, viz., reconnaissance, active and passive.

Reconnaissance ECM

Reconnaissance ECM equipment is normally employed to detect and analyse electromagnetic radiation from enemy communication or control transmitters and radar defence or control transmitters.

These equipments are normally carried in specially designed aircraft, ships, both surface and underwater, as well as land based vehicles. Normally, the equipment consists of extremely sensitive radio and/or radar receivers designed to operate over a wide region of the radio frequency spectrum. These receivers are used to search the spectrum for enemy transmissions. When an intercept is made, directional finding techniques are employed to pinpoint the location of the transmitter. If the transmission is recognised as a new identification, it is normally recorded on magnetic

tape to allow subsequent evaluation. Radar transmissions are analysed to determine pulse repetition rates, pulse widths, pulse shape and any other special characteristic. This recording of technical data allows planning for subsequent electronic offensive measures, as required.

Reconnaissance ECM equipments can also be employed to study the coverage of enemy radars to locate any blind spots caused by terrain obstructions or aerial design characteristics. These studies require careful planning, as the reconnaissance ECM carrier has to move close into the enemy radar transmitter to complete the coverage analysis.

Normal reconnaissance ECM tasks can be effected without the enemy being alerted. This is possible, as the strength of the radar energy striking the ECM carrier is always greater than that reflected back to the radar receiver. Hence, by using sensitive ECM receivers, it is possible to monitor the enemy radar pulses at a range which is outside that range from which radar echoes can be received.

A further adaption of this technique is to employ special reconnaissance ECM equipments to give warning when the ECM carrier is illuminated by enemy radar. This technique has many advantages to tactical and strategic air forces, as early warning allows for evasive action or operation of counter-ECM equipments. The same advantages, to a somewhat lesser degree, are afforded to naval and

ground forces. An application for ground forces would be warning of enemy radar surveillance over vital areas or locations. In all cases, it is a simple expansion of this technique to design the warning mechanism to automatically actuate active or passive counter-ECM systems.

Passive ECM

Passive ECM techniques and equipments are designed to deceive enemy radars without having to internally generate electro-magnetic energy. Perhaps the best known passive ECM technique was the use of strips of tinfoil (chaff) by Allied air forces, to defeat German radars during World War II.

The use of passive ECM has many limitations and it is rapidly giving way to Active ECM. The corner reflector, or Luneberg lens, a device which is designed to strengthen the reflected enemy radar pulse by a focussing technique, has many applications. By strengthening the echo pulse, the corner reflector causes the ECM carrier to appear larger, and consequently, more attractive to the enemy. By installing these equipments on small objects, for example, a drone missile, the target could appear as a large bomber on the enemy radar scope. Used carefully, these drone ECM carriers can draw enemy intercept interest away from the real target.

Active ECM

Active ECM, as the term implies, includes equipments which generate electromagnetic

energy to fulfil their purpose. Active ECM is used against radio and radar equipments, but techniques are different in each case. To allow discrimination between techniques, radio and radar will be considered separately.

Radio

The simplest form of Active ECM is jamming of radio equipments. Normal amplitude modulated radio receivers cannot discriminate between intelligence and noise if the two are received at comparable signal strengths. Therefore, the receiver output contains both intelligence and noise; but as a complex signal which is unintelligible as voice or any other radio borne intelligence. Noise generation by an Active ECM transmitter can be, in its simplest form, spark or white noise. Spark transmission produces large noise values at frequencies lower in the radio frequency band. White noise, defined as random noise having the same intensity at every frequency in the range of interest, can be used at any frequency in the radio frequency spectrum. Both spark and white noise transmitters require high power operation and are susceptible to spurious radiation of noise at random frequencies, other than that intended. This can have adverse effects on friendly radio circuits unless carefully planned.

A further jamming technique is to employ a special sweep transmitter, in which the radiated carrier frequency, modulated with noise, is swept up and down over a given sector of the radio frequency

spectrum. If this sweeping is done at a sufficiently high rate, time delay circuits in the detector sections of the enemy receivers do not have time to recover before the next pulse of noise is received. The receiver outputs deliver an apparent constant interference pattern. This sweep technique has the advantage of being able to affect a number of enemy receivers using those frequencies being swept.

Jamming of an enemy radio net or link has many obvious advantages, but it also has the disadvantage of alerting him.

An extension of the ECM techniques against radio is the "capturing" of enemy frequency modulated receivers by a suitable ECM transmitter. A characteristic of most frequency modulated receivers is that the detector circuit responds to one signal only, that which is highest in signal level. Hence, the receiver discrimination between a friendly or enemy transmitter, operating on the same frequency, is determined only by signal strength received. Intelligence need not be carried on the carrier frequency to establish this "capture" effect, so jamming of an enemy transmission, by employing a carrier frequency only, produces a no-signal output at the enemy receiver; provided that signal strength superiority has been achieved. This no-signal output does not indicate jamming, rather, a receiver fault. This method allows a further extension, that of false message transmission. If magnetic tape recordings had been taken

of the normal traffic passed on this net, or link, subsequent editing and tape patching can allow the creation of false messages designed to suit the strategical or tactical plans of the interceptor. After capture or overpowering of the enemy receivers has been made, these messages can be passed. To the recipient, these messages appear valid, as they are passed by recognisable voices or ancillary equipments with acknowledged characteristics.

Radar

Radar equipments are designed to employ a specific pulse repetition rate, pulse width, pulse shape, etc. Jamming of these equipments using the techniques outlined above is not effective, as the radar equipment discriminates between the correct repetitive signals and random interference.

In defeating enemy radar, it is more effective to use techniques which cause the display of false information on the radar scope without an operator being made aware that ECM measures are being used against his equipment.

To understand the techniques involved in this approach, it is necessary to understand two simple functions of radar equipment operation. Basically, radar provides two pieces of information; first, the distance, and second, the bearing to the target. Distance is measured by a calculation based on the time taken for a radar pulse to travel from the radar antenna to the target and back to the antenna.

Bearing information is determined by a device that indicates the direction the antenna was pointing when the echo is received from the target.

One ECM approach is to create a number of false targets on the radar scope. If the ECM carrier is illuminated by an enemy radar, it can send out a series of suitably time-spaced pulses each time an enemy pulse is received. These multiple pulses appear on the enemy radar scope as a group of targets, and the discrimination between the real and the false can be made virtually impossible. Consequently, enemy radar directed intercept aircraft, missiles or other weapon systems, all of which require precise distance to the target for the computation of flight paths or range settings, can be directed to non-existent targets.

An alternative to this false group system can be achieved if the ECM transmitter sends a single pulse each time it receives an energy pulse from the enemy radar, then slowly begins to shift the timing of its own pulse transmissions. This has the effect of causing the tracking circuits of the enemy intercept system to measure an inaccurate range.

This deception can be enhanced if bearings to the target are also made false. A method of achieving this was described earlier, viz., drone missiles carrying passive or active ECM equipment. A drone missile, radio controlled along a parallel or divergent path, and acting as a more attractive target, can draw intercept interest away from the real target.

Radar deception by active ECM equipment demands greater technical measures, as ECM pulse transmissions must be identical in technical character and frequency to those emitted by the enemy radar transmitter. Planning for this type of deception can be materially assisted by data gained from reconnaissance ECM missions. Alternatively, if the enemy frequently changes his radar pulse characteristics and frequency, the ECM transmitters must be designed to allow rapid adaption to conform to these new characteristics.

Counter ECM

Obviously, techniques are flourishing to counter the use of enemy ECM. Some of these Counter-ECM techniques are designed to foil ECM which operates on the precise radio frequency of the operating radar or radio equipment. These techniques allow for a change in the radiated carrier frequency as soon as enemy ECM is detected or suspected. However, this introduces a problem at the receiver end, as returning to a known frequency, or to a random frequency, is required.

Conclusion

For obvious reasons, the techniques and methods outlined in this article reveal little more than that readily apparent to anyone who gives thought to this subject, and does not represent

any precise equipment or technique.

The wide field encompassed by ECM, of which only a portion has been discussed above, tends to reduce the reliability of electronic equipment used for command and control functions. Counter ECM devices reduce susceptibility, but for practically every counter-ECM device designed, a counter-counter-technique is introduced. Hence, ECM resolves into a battle of wits between those equipped to play this dangerous game.

It must be emphasized that this article is an outline of only the more basic facets of ECM, but it is intended to draw attention to the dangerous potential of this type of war. Skilled use of ECM against our extensive communication systems will seriously cripple our ability to exercise the vital command and control function. The era of ECM has introduced a vital factor in the conduct of present and future wars, and its threat must be recognized and beaten. Education in the principles of ECM requires greater emphasis than that currently allowed, for only from awareness comes the ability to defeat. Continued research by design engineers concerned with ECM and Counter-ECM techniques, coupled with increased operator training, will reduce susceptibility, but complete accuracy of operation cannot be anticipated in the foreseeable future.

AFTER THE CENTURION

Major K. Dodson
Queen's Own Buffs, British Army

IN any military re-organisation, the planners, being practical gentlemen, must be influenced by what already exists in the way of units and equipment. Their ideas will also be limited by financial and manpower restrictions so what emerges is a compromise. If this assumption is true, it explains many of the inconsistencies of the pentropic organisation. Thus for example the armoured regiment is hardly changed, and is unlikely to be, until its present equipment wears out.

The Staff College student, the mess strategist or even those officers concerned with writing military characteristics do not, however, have to compromise. The period of gestation of new major equipments is so long (7-10 years in both the United Kingdom and United States from gleam-in-the-eye to delivery) that the farther one's thinking is removed from the present the better. In trying to decide what is best for the Army, current concepts and equipments can be discarded unless they can be demonstrated to have a place in the sort of war that Australia expects to fight in the future.

The aim of this article is to consider how the armoured regiment might be re-equipped when its stock of Centurion tanks runs out.

Current Roles and Equipment

The principal piece of equipment in the armoured regiment is the Centurion tank. This tank weighs between 45 and 50 tons and carries as its main armament a 20 pounder gun. It is heavily armoured, but has a good cross country speed. Of the main battle tanks available, the Royal Australian Armoured Corps considered it to be the most suitable for use in South East Asia.

The roles of the armoured regiment are:—

- (a) The close support of infantry.
- (b) To operate in a mobile role supported by other arms in open country.

Major K. Dodson attended and graduated from the 1962-63 course at the Australian Staff College.

- (c) Counter penetration and assistance in anti-tank defence.
- (d) Counter attack. This includes the follow up of nuclear strikes.

Operational Environment

The Pentropic Division in Battle Part 4 states: "The following figures have an important bearing on the possible uses of tanks in South East Asia.

- (a) Taking South East Asia as a whole, 25% provides quite good cross country going for tracked vehicles. In most cases this country is also passable to wheels in the dry season.
- (b) Throughout 75% of South East Asia tracked vehicles can be used. In places engineer assistance would be required to cross obstacles, and rafts or landing barges would be needed on major rivers. In the majority of cases tanks can move through jungle without specialised outside assistance except to cross rivers.
- (c) The remaining 25% of South East Asia is impassable to any form of mechanical transport and half of it is negotiable only by air or water transport."

Limitations of the Tank in South East Asia

Tactical Mobility. Even in the more developed parts of South East Asia, roads are limited in extent and capacity. Such bridges as exist will be far too flimsy to support a tank. Some

railways exist, but are vulnerable. There may be no suitable flat cars and tanks may be out of gauge. Movement will usually therefore be on the tanks' own tracks. Infantry, armoured corps and engineer labour will be needed to improve routes, improve or construct new bridging and to prepare alternative means of crossing obstacles. The heavier the tank, the greater the restriction on its tactical mobility.

Jungle. In jungle conditions, additional limitations affect the use of tanks.

- (a) Tanks will only be able to move slowly and as a result of a great deal of hard work. Manoeuvre will be very difficult and often impossible.
- (b) Fields of view and consequently fields of fire are usually extremely limited in the jungle.
- (c) Even when a target is seen, a great deal of movement may be necessary before a long gun barrel can be traversed in the right direction.
- (d) Under the conditions of limited visibility the tank is vulnerable to short range anti-tank weapons.

Enemy armour suffers equally from the same difficulties. Although a lighter and smaller tank could overcome some of the problems of tactical mobility, the principal conclusion must be that tanks are not likely to be used in large numbers by either side in a war in South East Asia.

Further Deductions

From a study of the factors already mentioned certain conclusions emerge.

- (a) Although the tank can operate in up to 75% of South East Asia, its wheeled echelon vehicles cannot. It will require air maintenance which means air superiority.
- (b) In 25% of South East Asia it cannot operate at all.
- (c) Except in 25% of South East Asia, its mobility is sharply reduced and its contribution is fire power alone.
- (d) In close country its fire power is expensive in terms of the armoured, engineer and infantry effort needed to get it where it is needed.
- (e) In close country it is vulnerable to infantry anti-tank weapons and will have limited value in the counter-penetration attack roles.

If these conclusions are correct then the tank is unlikely to have any very great impact on future operations in South East Asia. The experience of the French in Indo China supports this view. When the demands of the armoured regiment in highly skilled manpower, maintenance effort, engineer effort all the way back to the port of entry, and capital costs are considered, it does not seem to provide enough shock action or shells on the ground to justify its retention in its present form, that is to say equipped with tanks. This is not to say that there is no place for tanks in the army but that their use in South East Asia in their

present numbers seems a luxury that the Australian Army cannot afford.

The Replacement

In order to decide what piece of equipment should replace the tank it is necessary to define the future role of the armoured regiment. The pentropic division is basically an infantry division in which the other arms support the infantry. If the support that the infantryman needs is balanced against what the supporting arms and his own supporting weapons provide there is still one unfulfilled need. That is close support direct fire from heavier weapons than the infantryman can carry himself. This is in fact one of the classical roles of the mounted arm.

The divisional commander will also still want an arm which can play an offensive mobile role and which he can use for counter-attack and counter-penetration. Ideally the armoured regiment should be equipped so that it can carry out both these roles for 24 hours a day in all weather conditions and in all terrain.

The only way in which the armoured regiment can obtain complete mobility in South East Asia is by taking to the air and if it is to be used everywhere it must have vertical take-off machines.

If one had to place the order for such machines today, one would probably order a large helicopter and then fit on to it the armament it required to carry out its roles. Since the Centurion tank has a good number of years of life left in it, it

would be better to be less specific in stating what its replacement should be. A VTOL fighter or a ground effect machine might provide a better answer in ten years time. In other words the first part of the requirement is for an aerial platform with VTOL capabilities, with all weather and night flying characteristics.

The second part of the requirement is for such a machine to carry a weapon which can provide heavier direct fire than any weapon the infantry can carry. This might be a gun, a rocket or a guided weapon. It should also carry an area weapon such as napalm projectors. Finally it

should be able to carry infantry soldiers to act in co-operation with it in order to fulfill the mobile role. If such a machine mounted a long range anti-tank weapon of the Malkara type, there might be no requirement for the anti-tank regiment in the Combat Support Group.

Conclusion

If the Royal Australian Armoured Corps has any ambition to remain a mobile and offensive arm, able to play a full part in future operations in South East Asia, it should order an armed vertical lift aerial machine to replace the Centurion tank in the pentropic division.



THE BATTLE OF GETTYSBURG

Lieutenant Colonel John Nocita
Artillery, United States Army

“Four score and seven years ago our forefathers brought forth upon this continent a new nation, conceived in liberty, and dedicated to the proposition that all men are created equal.

“Now we are engaged in a great Civil War, testing whether this nation, or any nation so conceived and so dedicated, can long endure. We are met here on a great battlefield of that war. We have come to dedicate a portion of it as a final resting place for those who here gave their lives, that this nation might live. It is altogether fitting and proper that we should do this.

“But in a larger sense we cannot dedicate — we cannot consecrate — we cannot hallow this ground. The brave men, living and dead, who struggled here, have consecrated it far above our poor power to add or detract. The world will little note, nor long remember, what we say here, but can never forget what they did here. It is for us, the living, rather to be dedicated here to the unfinished work which they have, thus far, so nobly carried on. It is rather for us to be here dedicated to the great task remaining before us — that from these honoured dead we take increased devotion to that cause for which they here gave the last full measure of devotion — that we here highly resolve that these dead shall not have died in vain; that this nation shall have a new birth of freedom and that this government of the people, by the people, for the people, shall not perish from the earth.”

— *Abraham Lincoln, Gettysburg National Cemetery,
19 November, 1863.*

THE American Civil War was fought almost one hundred years ago, yet more books are at present being published in the United States on this conflict than ever before. Many reasons have been advanced for this

continuing interest, but from the military viewpoint the most valid reason is probably that this was the first modern war as we know warfare today. It was a war the North won because the North realised it was an indus-

trial war — a war won by a superior advantage in men, material, transportation and logistics. All wars since then have been won in this way. Over two million men were directly involved and although at times the issues were vague or ill-defined, the fighting was marked by a fury and violence seldom equalled since.

Many military historians consider the Battle of Gettysburg as the moment of decision or turning point of the Civil War. It was not so much that the North won this battle as that the defeat of Lee removed the last desperate hope of the Confederacy for recognition and assistance from the countries of western Europe. Until Gettysburg, while never receiving firm assurances, the South had believed that recognition might be forthcoming from England and France. A victory at Gettysburg could possibly have brought in outside assistance and involved Europe in this conflict.

By the spring of 1863 the war between the states had been raging for over two years with neither side appearing to have gained any marked advantage. Although the industrial might of the North foretold the ultimate outcome of the war, the South hoped to prolong the war and thereby reduce the will of the people of the North to continue the struggle.

Lee with his magnificent Army of Northern Virginia and his superb tactical genius, had inflicted a series of defeats on the Army of the Potomac. Most of these defeats could be traced,

not to the fighting ability of the Union soldier, but to the ineptness of the senior officers leading him. Quite often, as at Chancellorsville, Lee with bold, decisive tactical judgment defeated a numerically superior Union force commanded by a general who could not act with decision.

After the defeat of the Army of the Potomac at Chancellorsville in May, 1863, Lee travelled to the southern capital of Richmond, and after a series of conferences with President Davis and his cabinet it was decided to launch an invasion of the North. Lee felt that the South's best chances lay in winning an offensive victory on northern soil decisive enough to win recognition and bring in outside assistance or to force the North to concede that the South could not be defeated. In a sense this

Lieutenant Colonel J. W. Nocita, US Army, served as a Battery Commander with 57 Field Artillery Battalion in Korea, and later as Instructor in Artillery Tactics at the US Artillery School and as Artillery Adviser with the US Military Assistance Group in Iran. He graduated from the University of Maryland with the Degree of BSc. and from the US Army Command and General Staff College. In 1963 he graduated from the Australian Staff College, and is at present serving with the 8th Missile Battalion in the United States.

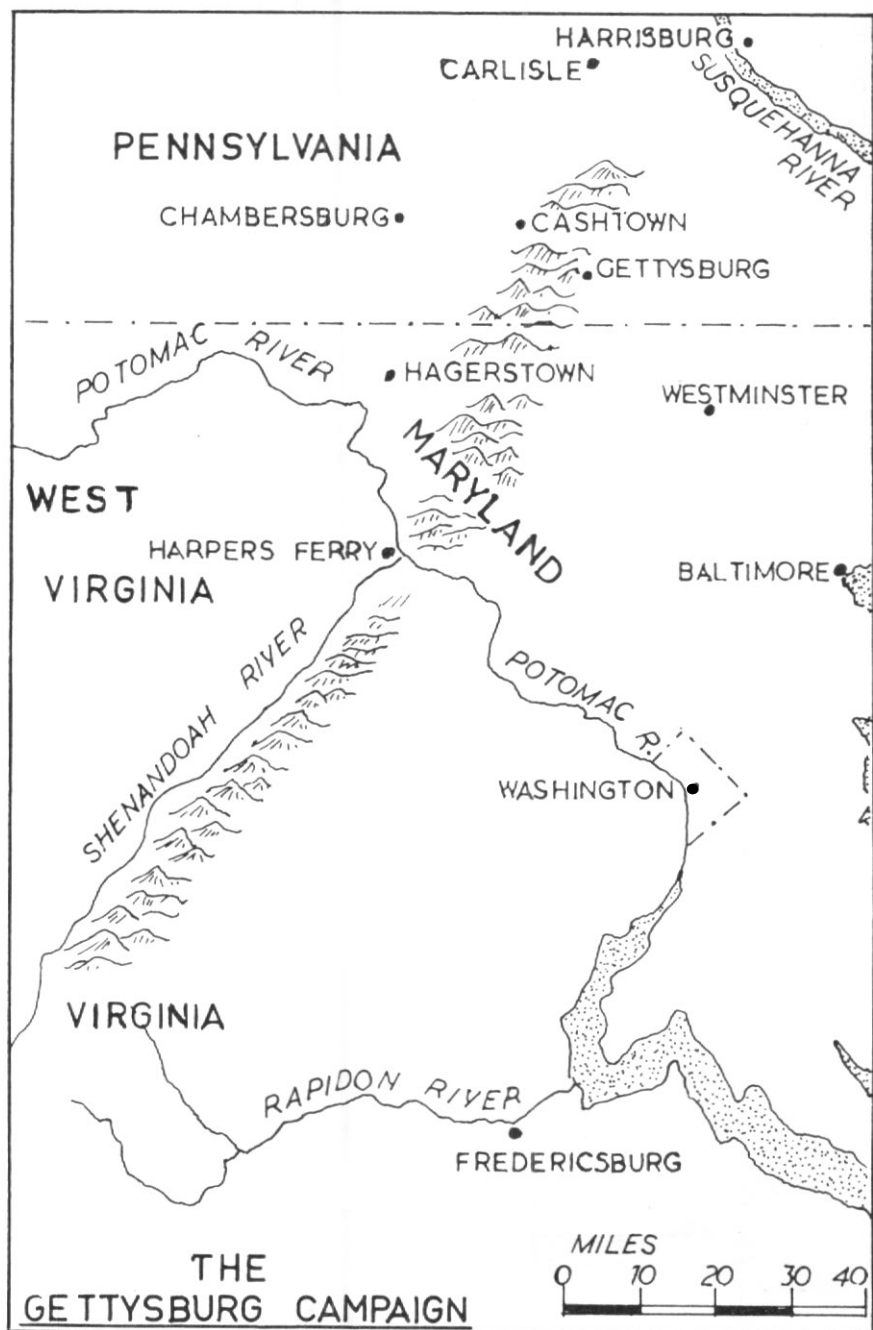
was wishful thinking, as a tough, practical Union general named Grant was applying great pressure against the Vicksburg area in Mississippi. In the next few weeks Grant would go on to take Vicksburg and open the Mississippi River to the sea, thereby splitting the South and dooming their struggle to failure. However, Lee felt that he had to do something for if he just sat in Virginia the Army of the Potomac would refit and attack again in a few weeks. Lee was having trouble feeding his army from the ravaged Virginia countryside and knew that the North could defeat him ultimately if he allowed the struggle to become a war of attrition.

Lee knew that any invasion of the North would be a risky venture and that when he marched for Pennsylvania he would be marching against long odds. Actually his long range plans basically were to march into Pennsylvania, draw the Army of the Potomac into an area of his own choosing and there attempt to destroy it. His planning didn't go much farther as this was viewed as the act which could possibly end the war. Lee planned to take three corps into Pennsylvania headed by Longstreet, Hill and Ewell who had replaced "Stonewall" Jackson who was mortally wounded at Chancellorsville. Lee would greatly miss Jackson and at one point in the forthcoming battle the presence of Jackson might very well have changed defeat into victory.

Lee began his move on June 3, shifting his army north-west

from Fredericksburg. He planned to move up the Shenandoah Valley and cross the Potomac west of the Blue Ridge Mountains above Harpers Ferry. Initially everything went well for Lee. By 27 June, Ewell had reached Carlisle in Pennsylvania, and his advanced elements were within four miles of Harrisburg. The other two Confederate Corps were at Chambersburg. During this period Stuart's cavalry had been active screening Lee's right flank and keeping him informed of the movements of the Army of the Potomac. Jeb Stuart, a colourful, flamboyant individual, who in the minds of many, was primarily interested in personal glory, now had an inspiration. He acted on it, and thereby helped Lee lose the campaign. Stuart proposed to Lee that he and his cavalry unit leave the Army of Northern Virginia and make a sweep through the rear of the Army of the Potomac harassing and disrupting as they went. There was no real value in this plan as it would deprive Lee of his reconnaissance elements. Military historians still ponder why Lee agreed to this proposal.

On 25 June Stuart started out and found that he had miscalculated the movement and area occupied by the Federal Army. As a result, he was forced far to the east and crossed the Potomac only twenty miles from Washington. Because of this, Stuart was completely out of touch with Lee for ten days so that during this period Lee knew nothing of the moves of the Union Army. In effect, Lee was attempting to invade the north moving blindfolded.



What about the Army of the Potomac? Where was it at this time and what was it doing? Hooker was still in command but he no longer possessed the confidence of Washington. After Chancellorsville the administration was agreed that Hooker should not be in command of the army in the next battle. When Lee began his move North, Hooker proposed that the Army of the Potomac attack toward Richmond, thereby forcing Lee to pull back from Pennsylvania. But Washington ordered Hooker to play a strict defensive game until it could be determined what Lee was up to. By the middle of June the Army of the Potomac was on the move, marching for the Potomac crossings above Washington, circling warily to keep itself between Lee and the national capital.

On 28 June, the War Department secured Hooker's resignation and replaced him as Commander of the Army of the Potomac with General George Gordon Meade, who had been a Corps commander under Hooker. Meade was a tough, capable commander who could be expected to use the Army of the Potomac effectively against Lee. As usual Lee knew his opponent, and when informed of Meade's appointment he remarked "General Meade will make no blunder on my front".

Reacting swiftly to Lee's threat to Washington and Philadelphia, Meade moved northward rapidly to meet the Army of Northern Virginia. Meade's plan was to fix Lee's forces and not decide whether he would

attack or defend until he knew more of Lee's plans. Meade never had an opportunity to make this decision as the matter was decided for him and he accepted the fight at Gettysburg on ground not of his own choosing.

By late June, Lee, with Stuart gone, had finally learned that the Army of the Potomac was north of the Potomac looking for him. When this news reached him his forces were strung out over a distance of sixty miles in Pennsylvania from Chambersburg in the west to the vicinity of Harrisburg in the east. Lee immediately decided he should concentrate his forces to forestall Meade attacking isolated segments and defeating him in detail. Lee's couriers had been riding hard to bring the scattered divisions together and the Gettysburg area was the handiest place for them to meet. So it was to Gettysburg that the Southern forces were coming but it was also at Gettysburg that a Union cavalry division had bivouacked on 1 July just west of town. This was the prelude to the Battle of Gettysburg.

On that hot, dusty morning of 1 July, General John Buford's Federal cavalry was patrolling the roads to the north-west of Gettysburg when they saw the head of a Confederate infantry column coming toward it. Buford deployed his forces on a low ridge west of town, sent riders to notify Meade that the rebels had been located, and opened fire. From this moment these two armies were committed to what

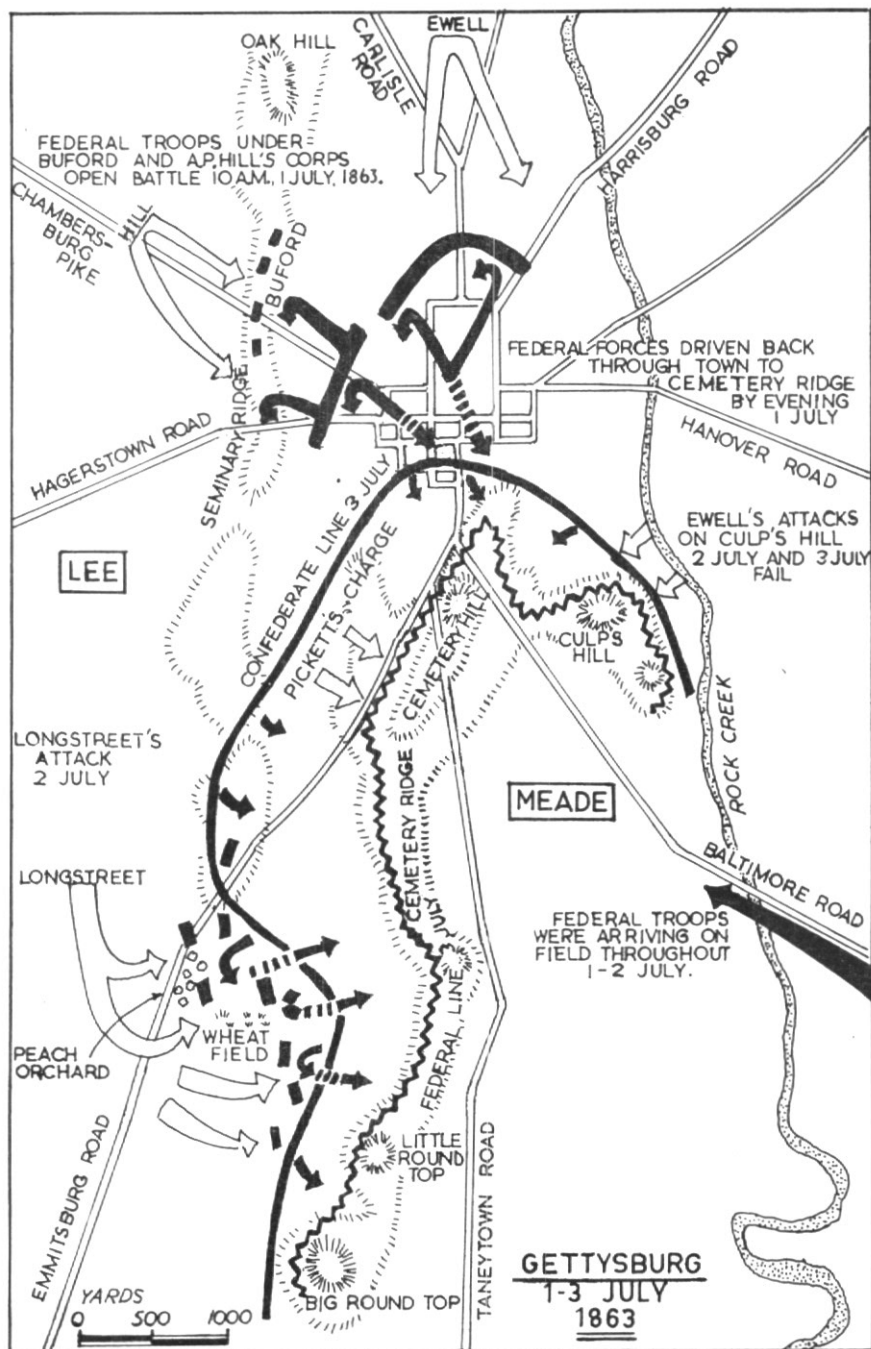
was probably their most terrible fight. The Confederates quickly put a division into line and began to move forward against Buford's position. By the middle of the morning a brigade from a leading Union Corps reached the scene of battle. The Northern forces appeared to be holding their own when the first Confederate attack was knocked back mangling a couple of Confederate brigades in the process. However, Lee was concentrating his forces faster than Meade and as new forces arrived the battle lines grew until they formed a great semi-circle west and north of the town. Outnumbered and outflanked, the Federal forces fell back on the high ground south and east of Gettysburg, grimly determined to hold on until the rest of the army came up, but not at all certain that they could do it. On this first day of battle fifty thousand men had been thrown into the fray and Lee's troops had defeated and seriously cut up two Federal Corps. It now became a race between Lee and Meade as to who could concentrate his forces first. Neither Lee nor Meade wished to fight decisively at this moment or on this ground. Lee could not extricate himself and his supply trains without fighting Meade's army to a standstill, and Meade was equally committed to a field he thought ill-chosen.

The defensive position chosen by General Hancock, commanding the Union field forces before the arrival of General Meade, was a good piece of high ground on the southern edge of the

town. It was a curiously shaped piece of terrain perhaps best described as being in the shape of an inverted "fishhook". Meade's defensive position contained four pieces of high ground which anchored his position. These were Cemetery Hill, a massive height just south of the town, Culp's Hill, a wooded knoll half a mile to the east, and two rocky knolls, Little Round Top and Big Round Top, joined to Cemetery Hill by a long ridge — Cemetery Ridge. It was a strong position but if the Confederates got possession of any of these hills, it would be untenable.

In the late afternoon of 1 July, when Lee arrived on the battlefield, he perceived this immediately and ordered Ewell to take Cemetery Hill "if possible". Ewell was not "Stonewall" Jackson who would have immediately stormed the Federal position. Ewell procrastinated and made a half-hearted attempt to take Culp's Hill, but his attack failed after securing a toe-hold on the hill. The Confederate forces withdrew and Lee began his preparation for the battle which would be resumed on the next day.

That night Lee told his officers, "We will attack in the morning as early as practicable". How to attack the Federal position, this was the problem confronting Lee. One of his Corps commanders, James Longstreet, argued adamantly against any attack at all. Longstreet argued that Lee's greatest successes had been when Lee had forced the Union forces to attack him, on ground of his own choosing. Longstreet wanted



to slide around the Northern position to the south and find some position in which the Army of Northern Virginia could sit tight and let the North do the attacking. Lee saw the danger of such a plan in exposing his lines of communication to the Federal forces and told Longstreet, "The enemy is there and there I will attack him".

As Meade prepared to meet Lee's expected offensive on 2 July, he considered that Lee would attempt a flank attack and that Culp's Hill on his right would be the likeliest point of attack. In this he was only half right; Lee planned to strike simultaneous blows at both Union flanks.

Lee in his planning felt that his greatest chance of success lay in turning either or both flanks of the Federal position and then rolling it up once he was on the high ground. As Longstreet had not fought the previous day Lee assigned him the major effort of turning the Union left at Little Round Top. Ewell's Corps was to attack Culp's Hill as soon as he heard Longstreet's guns to prevent the other part of the line being reinforced. Hill, in the centre was to hold his corps for employment as required. These orders were issued by Lee in his usual courteous manner in which he did not order Longstreet to attack at a specific time but requested that he attack as early as practicable on the next morning. As a result, what might have been victory became defeat due to Longstreet's procrastination the next day.

By early morning of 2 July, three corps of Meade's army were still absent but moving toward the area as rapidly as possible. Therefore, the left flank of the Army of the Potomac was relatively weak to withstand an attack by Lee. Longstreet, a very stubborn individual who entirely disapproved of the role assigned to him, maintained that he couldn't launch his attack until Pickett's division joined his corps. Pickett was moving up from about twenty miles away, but when he had not arrived by four o'clock in the afternoon Longstreet finally ordered his corps into the attack. By this time, Meade had concentrated all the Corps of the Army of the Potomac in the Cemetery Ridge position.

Longstreet's attack led by Hood's division came close to success when Hood's men gained the top of Little Round Top and found it unoccupied. Fortunately, General Warren, Meade's acting Chief of Staff, was there and rushed in two brigades who held the position after a period of savage fighting. The battle shifted steadily northward when Longstreet threw in a fresh division which captured the Peach Orchard and Wheat Field and threatened to split the Federal lines. Hancock rushed up reinforcements to plug this gap, but for agonising minutes the outcome was in doubt. The Union forces still held but now Hill threw a division against the Union centre. This division actually gained the crest of Cemetery Ridge and the Army of the Potomac was in

danger of being broken in half, but soon the Federal artillery was brought to bear and its fire tipped the balance. The carnage wreaked by the artillery was beyond description. The guns were jammed to the muzzle with canister and tore great gaps in the Rebel lines.

Ewell, who was to have attacked the north end of the ridge as soon as he heard Longstreet's guns, did open up with his artillery but his guns were soon silenced by the Union heavy guns. Ewell then ordered his divisions forward with one division under Johnson assigned the task of capturing Culp's Hill. There was only one brigade defending it but they were dug in behind heavy log barricades. Johnson launched four attacks at this defensive position but was beaten off each time. As Johnson's assault was obviously getting nowhere, Ewell sent two brigades of Early's division up a ravine separating Culp's Hill from Cemetery Hill. The Northern position here was almost undefended as the position had been stripped to provide reinforcements for the heavy fighting on the left. Early's men lunged out of the gathering darkness and did manage to capture several Federal batteries in hand-to-hand fighting. Hancock again was at the right place at the right time when he launched a sudden hard counter attack at the Confederates and drove them from the hill. So ended the second day at Gettysburg. Lee had failed to turn either Union flank, and the value of the ground he had

gained was hardly worth the terrible cost. The result of the day's fighting was that the Confederates had broken into the Union main defensive position with every one of their attacks, and had held it for a time, but had failed for want of a follow-up force to exploit the advantage they had seized. It was the most disjointed battle that Lee ever fought, and the lack of co-ordination between his attacking elements enabled Meade to shift his forces to meet a threat as it developed.

That night Meade called a council of war, where his generals agreed that they would neither retreat nor attack but would await Lee's next move. Meade felt that any attack by Lee the next day would be at the centre of his position on Cemetery Ridge, and the next day's attack was to prove him right.

While the action of the first day was fragmentary and that of the second rather complicated, that of the third day, though intense, was direct and simple. Lee had enough strength left for one final assault and Meade was still strong enough for one last desperate stand. Meade had predicted the night before that if Lee attacked again he would hit the Union centre: he had tried both flanks and failed; only the middle was left. Meade was right. Lee's plan was a simple one. Ewell's Corps would attack Culp's Hill at daylight on 3 July to gain what ground it could and to pin down the Northern forces on the right. Then, when this had been

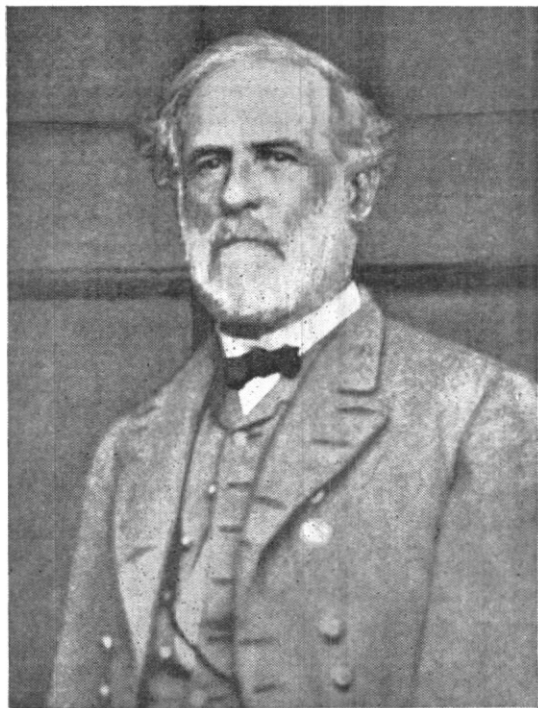
accomplished, a charge would be made against the Federal centre, with Pickett's division, which had just arrived, in the lead.

Ewell launched his attack but fared badly, and when a strong Federal counter-attack was thrown against his forces he was driven from Culp's Hill. As Ewell retired from Culp's Hill an unearthly quiet settled over the battlefield. There, within full view of the defenders on Cemetery Ridge, Confederate cannon were being moved into position a mile to the west. Lee was moving up every available gun and placing them virtually hub-to-hub. This array of artillery totalled over 125 guns when it

was complete. By one o'clock Lee was ready and the guns with a great roar loosed a torrent of shot and shell on Cemetery Ridge. It was the heaviest bombardment of the war.

Pickett and his gallant, proud Virginians moved out, five thousand strong. In addition to Pickett's division, Longstreet threw in six battle-hardened brigades, so that the Union forces were faced with 15,000 men determined to tear a hole through their defences. As the smoke would clear from the battlefield the defenders would see an army with banners flying moving out from the woods into the open, battle flags tipped forward and sunlight glinting from musket barrels. These were men doomed to try the impossible and to fail.

As the Confederate infantrymen advanced to within 700 yards of Cemetery Ridge the Union artillery opened up with deadly accuracy, inflicting heavy casualties on the attackers. Nothing seemed to stop these determined men, all of Pickett's brigadiers fell killed or mortally wounded, but still his Virginians came on. But courage alone could not win this battle. Although a few hundred men actually entered the Union centre, Federals from right and left came



ROBERT E. LEE

swarming over to join in the fight and suddenly it was finished. The charging column had been broken, survivors were going back to the Confederate lines, the smoke cloud was lifting as the firing died down — and the battle of Gettysburg was ended.

Much has been written about the aftermath of Gettysburg. Why didn't Meade attack on 4 July? Why didn't Meade follow Lee aggressively and attack him as he withdrew? The answer to these questions lies in the state of the two armies on the evening of 3 July and on the tactical skill of Lee. Both armies had suffered heavy losses with the Army of the Potomac, which lost about 23,000 men, probably having lost the greatest number. This was probably due to the heavy losses incurred on the first day when Meade was trying to contain Lee's attack. As a result, Meade had few if any fully effective combat units available to him on 4 July. Almost every combat soldier had been employed in the great battles of 2-3 July. Therefore, Meade was faced with the necessity of resting his troops and refitting and resupplying units to prepare them for further combat. Both commanders probably welcomed the opportunity to lick their wounds and clear up some of the appalling carnage of the battlefield.

Another factor that may have deterred Meade in attacking Lee on 4 July was that it rained. This downpour may have played an important part in Meade's planning. Also, although Lee had been defeated, he was still an extremely dangerous foe. While he had lost over 20,000 men he still had over 50,000 troops available to him and would probably put up a stout defence.

On the night of 4 July, Lee began his long retreat back to Virginia. When he reached the Potomac he found it in flood and a portion of his pontoon bridge destroyed. For a week the Confederates stood at bay behind entrenchments with their backs to an unfordable river. Meade pursued slowly and did not arrive at the river until 12 July. He planned an attack for 14 July but when that morning came, Lee, after a hard night march, was safe on the other side of the river.

Gettysburg was but one of many battles fought in the American Civil War, but this battle stands out not only because it was the greatest and bloodiest battle of the war, but because this was the high tide of the rebellion. Although the war was to continue for almost two more years, the tide of rebellion had begun to recede and it had become evident that the union would endure.

THE MEN

AT

THE BARRICADES

Captain H. B. Chamberlain
Royal Australian Infantry

The Players

IN A STREET scattered with rubble among debris and smoking ruins, a score of soldiers stand carelessly about, hands in pockets, apparently unconcerned with the carnage about them. The setting is obviously that of the victors having vanquished the foe. Among them a marching band plays, about twenty strong. The instruments appear slightly tarnished, side drummers are toward the rear and a bass drummer is just emerging from behind a pile of broken masonry. The tread of their feet on the cobble-stones almost echoes along the street and one can imagine the deep reverberations of some regimental march.

In a Napoleonic background the scene would make sense and none would comment on the intermingling of music with the background of battle. It is in fact the band of the Fifth Brigade AIF marching through Bapaume while the town burned, youth's dream of what war is like, a poster-like tableau to cheer the hearts of all true patriots, so remote from the truth and from reality. The

official photographer who took the scene no doubt had an eye for glory. As it happens the plate lived and it appears among many of the Australian Official History volumes.

An assessment is due. Much has been written of the deeds of the Australian soldier. Often he is either represented as a nonchalant superman, larger than the Heroes, or as a stumbling buffoon, coarse, loud mouthed, undisciplined and insolent to his officers. It is perhaps only natural that these silhouettes emerge. Daily newspapers demanded the bizarre. The people had to be convinced that the sacrifice of their young men was not in vain. Returning warriors at times contributed the odd novel or two, but in this field one had to beware of fickle markets. People tend to buy only what they want to read. Facts are so stifling. We had, unfortunately, neither a Remarque nor a Hemingway. A singular work on Gallipoli by Alan Moorehead stands like a lonely milestone on a highway littered with lesser works. One great and fascinating question still remains. In what cause did he really

believe? Those who went to Gallipoli were one group, but others remain to be answered. Those are the men who fought in the great battles of the Western Front; who kept on going, falling quietly in their tens of thousands.

The Image

They stand in a silent group. A Uhlan, a private of the Black Watch, a Legionnaire and a dozen or so others in uniforms worn on the Western Front. A little to the left and apart, there is a soldier of medium height, slightly built, but his appearance suggests solidarity. He is dressed in the uniform of the AIF, somewhat torn and mud spattered. At ease, and perhaps listening for his name at roll call after a spell in the line; his face, lean and angular, has a tired, defiant expression. The National War Memorial is an achievement which will live as long as we are a nation and the group depicted in uniform in the central hall are accurate in every detail. The artists who prepared the outstanding display deserve credit for the manner in which they captured the image of the Australian infantryman of 1914-18.

Great names come to mind. Pozieres, Mont St. Quentin, Bullecourt, Ypres. The legend which emerged during World War I has been enlarged. Reunions help to add to it. Most magazines have their "digger" jokes and stories. The fog and confusion of contemporary events helps to obscure some of the more salient facts. It has happened so often throughout history. For singular clarity of

expression and adherence to accuracy the volumes of the Australian Official History of this country's part in World War I set an outstanding example. Technological advancements which have taken place since may make it hard to appreciate the outlook of the Australian people at that time. The political upheavals of half a century do nothing to simplify an appreciation of their attitude to Empire, their nation, or to align their true perspective in relation to the world.

In proportion to population Australia's effort was not as great as that of Great Britain. The maximum number of troops at any time on the Western Front was slightly above 120,000. To equal the effort of the Mother Country this figure would have had to rise to 175,000. The Australian people did not make a total effort. Their attitude probably sprang from experience of the convict days when men were keenly aware of injustice and suspicious of authority. There was no conscription. Despite this background the AIF was judged to be one of the most effective military forces of the war. The Australian soldier's qualities did not entirely come from his association with the land; in fact only slightly more than one quarter came from country occupations. An important reason for their success was that the nation may be said to have selected their troops. There was no drain on manpower such as existed in Great Britain. Although at the beginning of the war patriotism ran high and recruiting centres were rushed,

rising casualty lists tempered enthusiasm. The soldier who arrived at the front in 1917 and 1918 was under no illusion as to what confronted him. Gallantry, adventure or visions of Empire to him were false notions of a misguided generation. In short, the image appears to emerge as that of a realist. Physically, he was not unlike his British counterpart, bred from generations of workers, perhaps a little more developed physically, reflecting the benefit of a higher standard of nutrition.

The Action

A flare goes up near the village of Domart. Quickly it is followed by another. In the pale orange glow, row upon row of steel helmets studded with the glint of bayonets move rapidly forward. A great shout echoes as the 52nd Bn assaults a German position. Lt. Rossbach, commanding the 7th Company of the 5th Foot Guard, directs the fire of machine guns with his platoon commanders. The incident is graphically described in the unit's regimental history by Company Sergeant Major Elfeldt:—

"Around we hear only the loud cheers of the English. The last belt of machine-gun fire strikes the onrushing English. The leading men fall, but others charge on. These too are mown down, but new waves always come on and cheering in their place and rush forward into our machine-gun fire . . . All round one can hear only loud English cheering. As the line gives way the English machine-gun fire

strikes it from front and flank . . . The English follow hard on our heels. With great uproar they sweep through the dark night."

If Company Sergeant Major Elfeldt survived the war he no doubt recounted the action many times over a stein of lager. He would remember the "English" attack on the night of April 24th 1918 for a long time.

At Merris on 14th June the 3rd Bn attacked elements of the 5th Bavarian IR. The leading troops encountered resistance and erected a barricade astride a trench to repel a counter-attack. Suddenly a man appeared above a parapet and commenced firing. The Australian Official History describes the incident thus:—

"A German leader in a cloth cap who had been trying to put vigour into the assault, climbed out upon the parapet at the side of the trench waving them on. As apparently his men still hesitated he picked up a rifle and, with the Australians in the trench still firing at him, coolly shot down one after another, at a few yards range, three of the four New South Welshmen who were bowling bombs over the block. He then fell shot through the neck and the spirit of his men failed. The barricade was held."

The German leader was presumably an NCO. His regimental history did not record his magnificent act. It apparently went unrecognised by his own side. Among the Australians were Lt. C. J. McDonald, MC, of Bowral, NSW, and Lt. F. W. Taylor of Turramurra, NSW. Both later died of wounds.

The incidents described were taken at random from the volumes. Whole armies of men died in that four years of carnage. The appalling lists of dead and maimed represented a severe setback to a young country. In retrospect it appears now as an emotional and physical disaster of great magnitude. The stolid indifference with which formations were flung against the enemy's wire compels closer examination.

As the immense gaps caused by casualties were made, men stepped forward to fill them. A spirit of sacrifice that almost half a century later seems beyond comprehension caused them to submit, on frequent occasions, to the faulty decisions of high command. At war's end the victors sank into a state they imagined to be peace. Two conditions were required to make it durable; a satisfactory inducement to abide by the settlement, and an effective deterrent from the breach of it by force. As the History points out, neither was provided and less than twenty years later the effects became abundantly evident.

The full reward of the AIF's effort was not available. Three principal achievements are submitted, however, and these are:—

Firstly with the Allies it helped save the world from a peace treaty dictated by Ludendorff. For the Australian people, such an ending meant almost certain elimination. Secondly, it furnished other nations with a measure of a then almost unknown democracy. Lastly it

demonstrated that measure to itself and to its own nation. There were critics from within and without. The people of six states were divided. It was actually written that Australians were degenerating from the British stock. Capable leaders, they cried, would have to be imported from the Old World; "The Australian Nation came to know itself".

The Passing

The men who fought at Fromelles and Mouquet Farm are leaving us, but whilst the National War Memorial provides a permanent record of remarkable quality, there is among many the feeling that the real spirit has not been adequately defined. Scholars from Europe and America have only recently produced some outstanding works on the 1914-18 era which, whilst involving a formidable study of detail, have helped to crystallise the war's causes and effects. So far as Australia is concerned it is doubtful if any such work has yet appeared.

Among the plates which include the bandsmen at Bapaume there is another depicting a group of infantry before Amiens. A platoon commander appears in the act of briefing them. Untidy equipment hangs about them, weapons are askew and they are attired in the baggy covering which characterised the AIF. Some appear interested in the platoon commander's words, others just look straight ahead. Several glance at the cameraman perhaps wondering if they shall live to see the picture. One, the smallest, stands stiffly to

attention, another puffs a pipe. Two in the group are quite tall, the remainder are more like the soldier portrayed at the War Memorial.

Of the many attempts made by individuals to describe the man, one by Colonel A. G. Butler, Official Medical Historian, clearly approaches reality:—

"The Australian soldier did not want to die. He wanted to do the job he had come for — to beat the enemy. To that end he was determined to take any amount of pains, understand his weapons and his tactics better than the enemy did, so that when it came to killing, the odds would be against the enemy."

The "English" who swept through Lt. Rossbach's position were just such men. Like any other army they had their share of malcontents, there were

leaders and those who were led. They contended pieces of foreign soil with the calibre of men such as the NCO on the parapet. Both were probably unaware of the larger issues at stake except they were both convinced that what they were fighting for was right. At war's end they were both exhausted. It is recorded that there was a certain sadness as formations split up and marched on to trains and boats. Men made promises to meet again. It is not easy to reach back and discern the character and motives of the man of 1914-1918, but the volumes of the Official History provide possibly the most absorbing source.

"The Old Force passed down the road to History. The dust of its march settled. The sound of its arms died. Upon a hundred battlefields the broken trees stretched their lean arms over sixty thousand of its graves."

COMPETITION FOR AUTHORS

The Board of Review has awarded first place and the prize of £5 for the best original article published in the March issue to "Logistics — The Lost Cause" by Major N. M. Turner, Royal Australian Army Service Corps.

AN EXERCISE FOR PROFESSIONAL TRAINING

Major D. G. Loomis, MC,

Reprinted from the Canadian Army Journal.

HOW OFTEN have you been involved in a professional training programme which is not only tedious and boring, but also requires a tremendous and painful effort to set up? Here is an answer to both these problems. It is the Professional Training Exercise (PTX). It is a new exercise tool that is not only easy to set up and run, but also interesting and valuable. It was developed in the First Battalion, The Royal Canadian Regiment. Though the following description deals with what an infantry unit has done, it will be seen that the PTX can be applied to any type of unit or formation for the professional training of officers and NCOs.

The PTX was developed more out of necessity than anything else. As with all field units we were faced with the annual refresher training in voice procedure, tactics, and all the rest. These usual problems were compounded by having to really get down to brass tacks with our new tactical doctrine involving, as yet, unabsorbed implications of time, space, speed, dispersion and destruction. How to do this effectively, with virtually no time or personnel available to write narratives, radio traffic, summaries of events, suggested

solutions and on and on with reams of paper — that was the question.

It was apparent that we needed a comprehensive self-running, self-perpetuating, and self-teaching exercise. Any such exercise would have to be pretty good to avoid the usual fate of inertia and lack of enthusiasm common to any such scheme when exposed to our old "pros" — habitually suspicious of brain-waves and new brooms. The PTX passed this test and is still gathering momentum, working like a self-generating chain reaction. Here is how it works:

How the Exercise is Run

Figure 1 illustrates the main components of the exercise.

There is nothing startling about the layout of Figure 1 except for the Higher Control War Game. This is the real novelty. It gives the PTX life and continuity. The war game is similar to those used for research and development. It is simple and costs nothing. Briefly, it consists of two maps, separated by a piece of hessian. The boundaries and the general layout of the battle area are marked on them — one map for us and one for the enemy. Pins

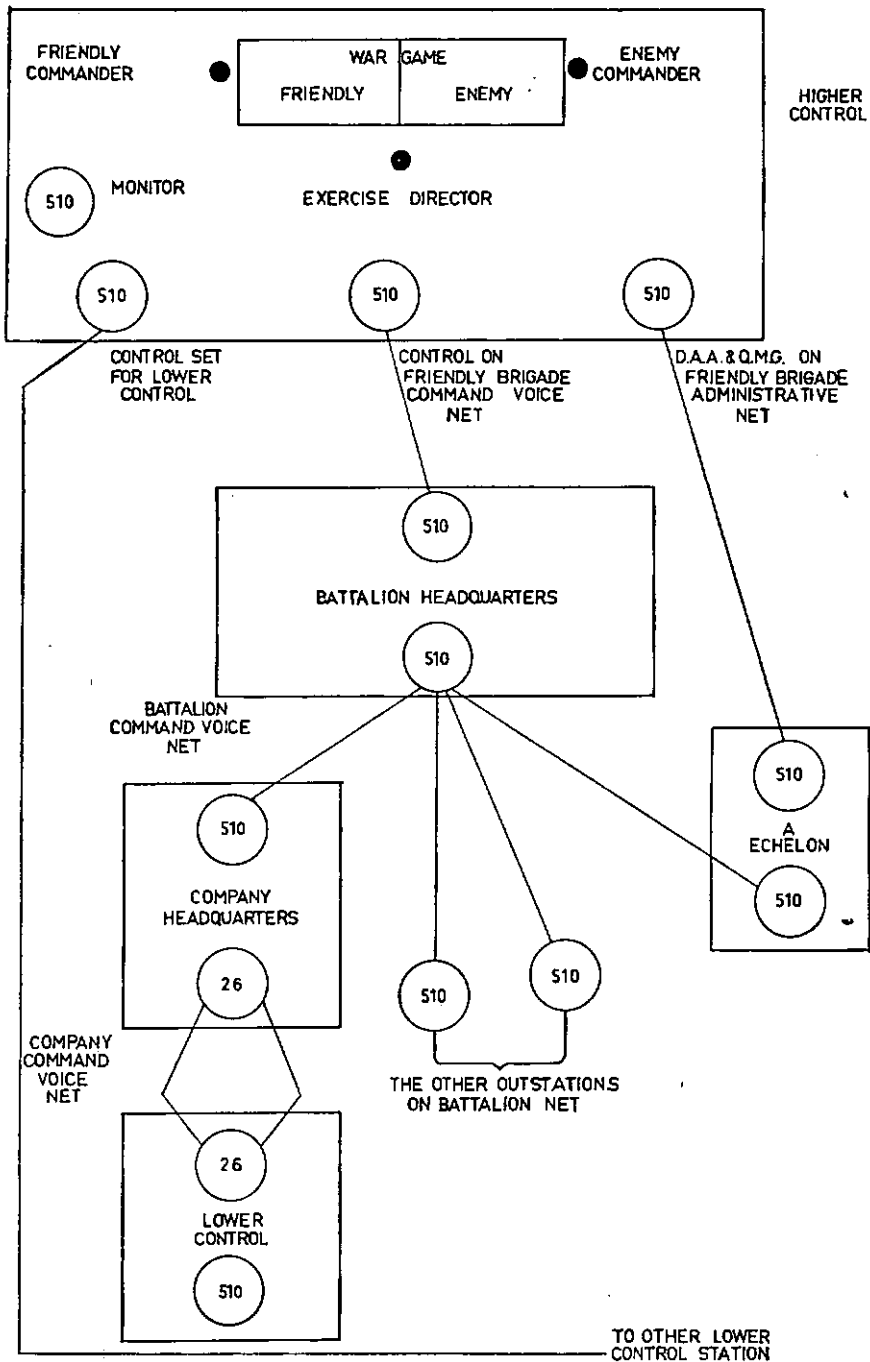


Figure 1

are used to represent both friendly and enemy units and sub-units. Paper collars or coloured beads may be used to indicate groupings. For instance, "A" Company Group in a hide may have a pin as illustrated in Figure 2.

Higher Control Commanders move the pins about the war game maps in accordance with their plans and orders they issue. The Friendly Force Commander moves all blue pins in the Brigade except the sub-units of the Battalion being exercised. As a result, he can pass SITREPS and so forth from all Brigade units and his own headquarters to the Battalion. With both Friendly and Enemy Commanders moving their blue and red pins, clashes will occur between their forces. The Exercise Director, in consultation with the two Commanders, decides on the outcome of these engagements.

Let us follow the sequence of events for one small action, say a patrol clash. Assume an enemy fighting patrol is ambushed by one of ours from "A" Company Group as a result of a move by the enemy commander. Now the fact that "A" Company had an ambush in that spot was a result of orders issued by the Officer Commanding "A" Company or by the Battalion Commander. Higher Control does not control the detailed disposition of the Battalion sub-units as both Battalion and Company Headquarters are free to react to any situation presented to them. In this patrol clash Higher Control merely has to decide what hap-

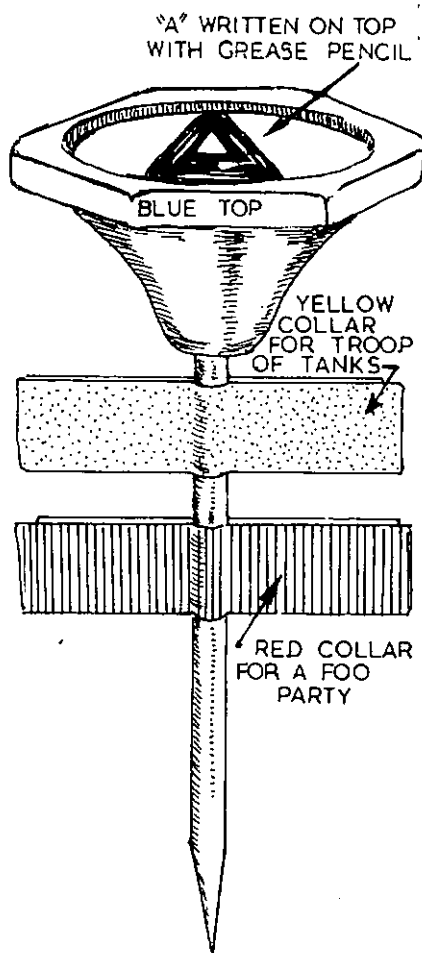


Figure 2

pens in general. Suppose they decide the engagement will last eight minutes, after which the enemy withdraw. This general information is recorded in a log and is given a serial number after which it is passed over the Lower Control net to "A" Company Group Lower Control.

Lower Control for "A" Company consists of some of the Company Platoon Commanders

and Sergeants. It is up to Lower Control to "paint" the detailed situations for Company Headquarters. In this example, they log the Higher Control message assigning it the same serial number as Higher Control used for ease of future reference. Then Lower Control makes up messages and sends them to Company Headquarters as though the ambush commander were passing them; e.g., first sighting of the enemy patrol, calls for fire support using proper procedure, fire-fight, enemy withdrawing, casualty state and so on. As a result of the situation being painted, the Company or, in turn, the Battalion Commander may take such action as he wishes, i.e., send out a force to pursue the enemy or keep them under observation or direct more fire at them. As a result of orders and information received from Company Headquarters Lower Control can give a feedback to Higher Control on the detailed situation and moves being made at their level.

It can be visualised that Lower Control is kept busy in some actions such as an attack on a battle position where they originate detailed traffic from platoons, support weapons and arms. For this reason, Lower Control requires three or more Officers and Senior NCOs for each Company Group. However, no matter how comprehensive the situation gets it can never get out of control as Higher Control makes all enemy moves and decides the outcome of engagements in general, i.e., time and casualty rate.

The beauty of the PTX is that not only are Battalion and Company Headquarters exercised, but also Higher and Lower Controls are exercised in a similar fashion. All concerned must use radios, log information, mark maps, read the battle and so forth. They are also presented with tactical situations which require tactical decisions at various levels of command from patrol to Brigade Commander depending on the part they are playing in the PTX.

In addition to those already mentioned in Higher Control there are others. The Unit Second-in-Command usually acts as Deputy Assistant Adjutant and Quartermaster General to exercise "A" Echelon in such matters as re-supply, casualty evacuation, vehicle recovery and any other administrative matters he wishes. A monitor is also located at Higher Control. He monitors the Battalion Command Voice Net for radio procedure as well as representing any outstations not actually on the ground and keeping Higher Control informed on orders and information being passed on this net. When an exercise is in full swing Higher Control is very busy. In order to make it run smoothly a number of clerks and intelligence men are used to assist in recording information and keeping maps up to date.

Continuity

One battalion conducted the PTX every second week for one afternoon or for an afternoon and evening. Throughout the period one exercise setting was

used. It began with Phase 2, on the obstacle, and after the unit had been forced back to a Brigade shelter position it took part in a counter-offensive which included a river crossing operation and advance to the bridge-head Phase 1 line.

On each day the PTX covered some aspect of the battle in detail in a realistic time and space framework. In order to ensure continuity from one PTX day to the next and avoid wasting time in getting the exercise under way the following measures were found effective:

1. All battle maps were left marked up.
2. At least one person remained in the job he had on the previous PTX day in Higher Control, Lower Control and Headquarters being exercised. This precaution was necessary as personnel were rotated through various jobs within the unit to assist in training all ranks one rank up. For instance, field officers rotated through Higher Control and Battalion Headquarters where they acted as brigade and battalion commanders. At the other extreme senior NCOs acted as platoon commanders while junior officers worked in company and battalion headquarters as duty officers.
3. Between exercises the next nominated officer for Exercise Director issued a one-page narrative to set the scene for the next PTX day.
4. Prior to each PTX a 15-minute briefing was given centrally to all ranks.

5. Prior to each PTX all concerned checked their battle maps against the Higher Control Friendly Forces map.

By observing these simple precautions it was possible, say, to fight the surveillance battle on the obstacle one day and on the next run through the battle in the forward part of the unit area. Thus, over a period of time the full battle cycle can be followed in a tactically realistic fashion and at the same time each aspect can be minutely studied by means of the critique held at the end of each PTX day.

The Critique

The critique is one of the most important and valuable aspects of this training. It is here that lessons are pointed out and remedies discussed for common errors. As soon as the PTX-day cease fire is given, all Lower Controls report to Higher Control when one of the Higher Control Team consolidates their points for the critique.

In our case, the critique was held for all officers and senior NCOs taking part in the PTX while junior NCOs supervised the return of stores. The following sequence was evolved:

1. OC Support Company made any points from the Battalion Headquarters point of view.
2. The Exercise Director gave points from Higher Control. He began with a summary of events and followed with points concerning the tactics used, reaction times, accuracy and rate of passage of information and so forth. It can be appreciated that Higher Control is in a position to

record the time taken for information from Brigade Headquarters to reach the lowest level of command and vice versa.

3. Lower Control points were then presented. They followed a similar vein to Higher Control points.

4. The Signals Officer then gave any points concerning voice procedure and signals security.

5. Any administrative points were then given by the Second-in-Command.

6. All battle maps were then checked for accuracy.

7. A question period then followed, after which the Commanding Officer summed up the PTX day.

Refinements

Thus far, the main essentials of the PTX have been described. However, this is only half the story. The basic exercise can be enlarged in a number of ways to make it even more valuable, interesting and realistic.

The greatest return came from integrating the PTX with other professional training. Every other week TEWTs, discussions and so forth were held. Officers and Senior NCOs were divided into three groups according to rank and qualifications to study operations at platoon, company and battalion level. The ground used for this training was in the vicinity of the camp and corresponded to that used for the PTX. Thus by phasing the training properly, the setting and ground for the next PTX could be studied the week before. For instance, one week the advance

to contact would be studied by means of TEWTs and the next week the PTX would involve an advance to contact over the same ground. Furthermore, it is possible to adopt solutions presented the first week into the PTX. This not only made preparation for the PTX day even easier, but also stimulated interest by still greater participation by all ranks.

After the PTX had been run a number of times, radio jamming was introduced. At first it was simple, but gradually jamming became as sophisticated as one might expect in war. In addition to working up anti-jamming procedures, a great deal of progress was made in teaching an infantry unit to adopt "out" procedure.

As long as the weather was reasonable the PTX was run from vehicle-mounted headquarters. However, in the dead of winter it is obvious that there would be little learned by anyone sitting shaking in the back of a truck. When the PTX was run indoors in winter all Command Posts began and ended with the exercise mounted. After a few minutes' drive around camp they arrived at a pre-designated "basement". This allowed dismounting and mounting drills to be worked out for rapidly changing from vehicle to ground-mounted control. Aside from the obvious advantages, this was not unrealistic as in action it is doubtful if headquarters would remain exposed in thin-skinned vehicles if it could be avoided. While occupying these "basements"

phones were used to represent all additional radio nets found in a battalion group, such as tank and artillery nets. This not only allowed personnel to practise the use of alternative means of communication, but also removed such traffic as fire orders from the command voice nets. In fact, the whole system of unit fire control was given a thorough and realistic working out.

The PTX provides a good base on which to exercise other unit elements. For instance, company hide reconnaissance parties were exercised by laying out hides where the company command post is operating and support weapons commanders can actually site weapon positions. Indeed, the PTX is capable of being expanded to a two-sided exercise with troops.

Finally, special studies may be conducted in conjunction with the PTX. These may include such projects as the optimum command post design, how best to record and disseminate information, how does the unit conduct operations under fallout conditions, what code words and nicknames are essential and so forth. A little effort along these lines can yield valuable results. To date, two extremely useful results have been achieved: one concerned procedures for maintaining surveillance within the unit area, the other was an evolution of an improved system of designating company group areas of responsibility in a fluid battle. However, one must be careful to ensure that such projects do not interfere with the

basic aim of the PTX, which is training.

Conclusion

No particular aspect of the PTX is new, but the method by which available training tools have been combined produces a novel exercise. There are some disadvantages to the PTX, but these are far outweighed by the advantages.

The principal disadvantages are somewhat nebulous and are common to any programme of professional training. One of these is the fact that a number of officers must have a clear grasp of the new tactical doctrine. Another difficulty is that of exercise time. In order to avoid sub-units sitting with very little to do on a PTX day it is necessary to vary exercise time. Rather than speed the battle tempo up unrealistically, the writer considers it better to have control announce a new exercise time, giving a short narrative of events for the lost time interval. A third disadvantage is that it takes two or three PTX days to get the exercise wound up to full speed. Initially, there must be comprehensive briefings to put the idea across to all ranks. Then the exercise must begin with a restricted number of out-stations operating in a simple tactical situation. If this is not done then personnel learning new jobs would be swamped.

Against such disadvantages there are a large number of advantages. Some of the more obvious of these are:

1. The PTX is self-perpetuating once begun. In this it resembles

- operations more than other types of training exercises.
2. It is extremely flexible. It can be run at any time and for as long as you wish. It can exercise any number of people and sub-units, the limitation being the numbers available on any particular day. It can be applied to any type of unit or formation with ease.
 3. The exercise is simple to set up and even simpler to execute. Once set up it requires very little work in the nature of written narratives, DS notes and so on.
 4. Everyone on it is exercised continuously. No one has the exercise "taped", as the initiative to act independently has been decentralised. Control is maintained by judiciously balancing the scope in which anyone can make independent decisions. A direct result of this complete participation of all ranks is an unusual degree of interest and enthusiasm. In addition, it is one of the very few tools suitable for training junior ranks in certain aspects of the nuclear battle which involve decentralised control and independent action based on initiative and intelligent anticipation of events.
 5. The PTX is realistic, as it provides all participants with a known general tactical situation and ground which has been seen. In this respect time is saved, as personnel can concentrate on learning their detailed jobs instead of trying to absorb a new situation each week. At the same time everyone is presented with an ever-changing tactical situation.
 6. The ever-changing tactical situation brings in the vital aspect of training all ranks to make sound tactical decisions at their own particular level of command. What is more, the method of control allows these tactical aspects to be scrutinised in detail.
 7. The PTX can be built upon to include any desired amount of training in addition to such basic aspects as voice procedure, shaking out command and control elements and so forth. It can be blown up to a two-sided exercise with troops with ease. There are many other advantages as well. The PTX is an excellent vehicle for building team spirit within the unit. Personnel can be cross-trained and trained one rank up with ease. This exercise is an excellent tool in the hands of the Commanding Officer for imposing his will and concept of operations on the key members of his unit. Over the period of a winter the PTX can produce a well integrated, professionally competent team in the unit. This can be done at a minimum cost in time and effort when compared to other types of training tools now available. It also conditions all command elements for tactical exercises with troops.
- In balance, the multitude of advantages outweigh any disadvantages to this novel exercise. If you want faster results and a unit that is interested and enthusiastic about its training, then the PTX may be part of the answer. It is a sharp new tool for professional training. Try it.

BORNEO

CENTRE OF CRISIS

Anthony Harrigan

Reprinted from the February 1964 issue of *MILITARY REVIEW*,
Command and General Staff College, Fort Leavenworth,
Kansas, USA.

BORNEO, the third largest island in the world, is a strategic territory, the control of which could affect the course of history in the vast island-studded region between the Asian mainland and Australia. The seeds of a serious conflict on Borneo took root as the Federation of Malaysia, which incorporates the Borneo territories of Sarawak and North Borneo, came into being.

The phrase "wild as Borneo" has been in use in the United States for several generations. For most Americans the remote Asian island has held little serious interest. It has been dismissed as a land of forbidding jungles and grim headhunters.

Two-thirds of Borneo is Indonesian territory and bears the name of Kalimantan. The remaining one-third is part of the Federation of Malaysia, except for the small, oil-rich sheikdom of Brunei.

As long ago as 20 January 1963, the Indonesian Government adopted a policy of "confrontation" against Malaysia. This was the same official designation the Indonesians used for their attitude toward Netherlands West New Guinea in recent years. The Indonesian Chief of Staff, General A. H. Nasution, declared that the northern half of Borneo was Indonesia's "first line of defence".

Border conflict first broke out 12 April 1963 when over 100 uniformed soldiers attacked a police station about five kilometres inside Sarawak. The attackers are reported to have come from across the Indonesian border. In early October 1963 raiders penetrated 48 kilometres into Sarawak before being halted by British Gurkha troops.

If insurgency reaches serious proportions in Sarawak and North Borneo, Malaysian forces

will be confronted with serious defence problems. It must be remembered that Borneo is three hours' flying time from Singapore. In addition, both Sarawak and North Borneo have large Chinese populations of doubtful loyalty to Malaysia's goals. British authorities have reported that the Clandestine Communist Organisation already has 500 armed men who serve as the hard core of a guerilla force.

Extensive areas must be defended. Sarawak is about 121,900 square kilometres in extent, or nearly as large as the whole of Malaya. North Borneo consists of about 77,000 square kilometres, comparable in size to the state of Maine.

Terrain

Although cultivated areas are to be found along the coast of Sarawak, dense jungle covers most of the country. Roads are few, and the rivers serve as arteries of communication. The longest and most important of the rivers is the Rajang. In this environment one of the best means of transport is the high-speed outboard motor-boat. A few airstrips have been built in the interior, but counter-insurgency forces would still have to make use of fast, light-draft boats to reach settlements along the rivers.

North Borneo has some of the highest mountains in Asia. The highest is Mount Kinabulu, which rises more than 4,000 metres above sea level. These mountains rise steeply from a narrow coastal plain that is swampy in character. The finest

port in these Malaysian territories is Victoria, on the small island of Labuan, in Brunei Bay. Other usable harbours include Jesselton, the capital, and Sandakan on the east coast.

Movement on foot in much of North Borneo and Sarawak is extremely difficult. To march in a straight line requires repeated crossings of winding streams and swift ascents and descents. Fortunately, the Dayaks, the indigenous people who occupy the interior of the former British protectorates of Sarawak and North Borneo, are likely to prove loyal to the new Malaysian administration. The Chinese population is concentrated in the coastal districts.

Aside from the difficulties imposed by mountains and jungle rivers, the climate is hot and damp — characteristically equatorial. The average rainfall is 150 inches a year, although the least rainy months are July, August, and September. In the jungles of Borneo one finds apes, leopards, the two-horned rhinoceros, and the elephant — the latter are found in the north-east. Crocodiles are in all the rivers and there are snakes of many kinds, including the python and the king cobra.

Background

To gain a better understanding of this troubled area of the world, it seems worthwhile to sketch the background of history in Borneo.

Indonesians and Malays are as similar to each other as Europeans are to Americans. The ancestral ethnic stock of the

Malaysian race from which the Malays, Dayaks, Dusuns, and Indonesians have sprung' apparently migrated from the Asian mainland and moved in waves down to Borneo, the Malay Archipegalo, and the Indonesian islands.

Indian and Chinese influences commenced about 300 B.C. While the Chinese confined themselves to trade, the Indians established settlements. Evidence of these ancient Hindu settlements are to be found in Sarawak. Chinese pottery and iron slag also have been found in this territory. Sung and Ming pottery have been uncovered in North Borneo.

The ancestors of the present Chinese population did not arrive in Borneo, however, until the 18th century, when they engaged in the pepper trade and in gold mining. From then to the present the Chinese have been in conflict with other population groups. In the 18th century they attempted to establish self-governing communities which ignored the authority of the Dutch and the local sultans. A long period of conflict followed in the 19th century in which the Chinese struggled with the Malays and Dayaks as well as with the European rulers.

European Ties

In view of this long Chinese involvement in Borneo, it is understandable why the Peking regime has directly interested itself in developments on this island. To this end the Communist Chinese head of state, Liu Shao-chi, appeared in Indonesia in the spring of 1963 to

issue a joint declaration with President Sukarno against the formation of Malaysia.

In the 15th century the kingdom of Brunei held dominion over the entire island of Borneo, and was paying tribute to China. By the middle of the next century, Chinese links with Borneo had been affected by the arrival of Europeans in the East Indies. The Portuguese and Dutch ended the seaborne trade between Borneo and China which had commenced in the sixth century.

Then in the 17th century the Sultan of Brunei ceded the present territory of North Borneo to the Sultan of Sulu as a reward for military aid. North Borneo was in 1877-78 ceded by the Sultans of Brunei and Sulu and various other rulers to a British syndicate, which in 1881 was chartered as the North Borneo Company. In June, 1962 the Philippines Government claimed sovereignty over North Borneo, saying that heirs of the sultanate had expressed their desire to see the territory become part of the Philippines. This is the basis for Philippines disapproval of the creation of a Malaysia that incorporated North Borneo.

Piracy Controlled

In the 18th and 19th centuries, piracy flourished on the seas around Borneo. The pirates, who came from Islamic tribes on the coast, operated in large fleets numbering as many as 200 sail. European ships were attacked and crews carried into captivity. The pirates were finally brought

under control through the efforts of the Royal Navy and Sir James Brooke, the Rajah of Sarawak. Brooke received the territory from the Sultan of Brunei in return for his military efforts in behalf of the sultanate. North Borneo, Brunei, and Sarawak became British protectorates in 1888. After World War II, during which the island was occupied by the Japanese, North Borneo and Sarawak became Crown Colonies.

This brief survey shows that Borneo has been a focus of national ambitions in Asia from the dawn of history. Whatever the national elements of a struggle for domination in south-east Asia in a particular period of history, Borneo has been affected. The US naval historian, Samuel E. Morrison, points out that the Japanese wanted Borneo in the 1940s "for its oil and its strategic position in the South China Sea".

Indonesian leaders see the island as a major stepping-stone leading toward the inclusion of all Malay peoples in a single Indonesian state.

The Chinese Communists, who operate through the Clandestine Communist Organisation, well

realise that Borneo could become a bastion of Free World strength — a Taiwan to the south in the event that communism were to make further gains on the south-east Asian mainland. They wish to deny this redoubt to the forces of freedom.

Furthermore, the Communists realise that if North Borneo and Sarawak were wrested from the anti-Communists' hands of Malaysia, they could become bases for seaborne guerillas in the South China Sea. In this connection it is worthwhile noting a recent London *Times* report indicating that there has been a marked increase in raids on Malaysian fishing boats and coastal trading vessels in the Strait of Malacca. All evidence, said the *Times*, indicated that the raiders were operating from bases in northern Sumatra.

Today, more than ever, the United States has cause for developing a thorough understanding of the character and history of Borneo and the relation of the island to nationalist ambitions in Asia.

Borneo could well become as much a zone of armed conflict as was Malaya and as South Vietnam is today.

ARMY

RANK BADGES

Reprinted from the November 1963 issue of *Concord*,
the journal of the Insurance Sub-branch RSSAILA, Victoria.

THE OFFICER'S "pip" takes its design from the star of one of Britain's highest orders of knighthood.

The present system of indicating rank for officers and NCOs was established in 1880.

As the uniforms of the British Army, on which our own is modelled, have evolved from the brilliantly coloured and lavishly adorned trappings of Georgian days to a uniform style, so have rank and regimental insignia evolved from a confusing and almost gorgeous array of braidings and embroidery to a straight-forward series of devices used in differing arrangements to denote differing degrees of seniority.

First detailed dress regulations for the British Army were laid down in 1822, and it is from that date that we are able to trace evolution of officers' rank badges in use today. Most people should be familiar with most commonly seen of these — two stars, lieutenant; three stars, captain; crown, major; crown and one star, lieutenant-colonel; and crown and two stars, colonel.

Since 1880, when the existing system was established, only two vital changes have been made: the two stars set down for a captain being increased in 1904

to three, with corresponding adjustments for lieutenant; and the rank of brigadier-general being replaced by that in current use of brigadier.

Today the indicative of the most junior commissioned rank (2nd lieutenant), the single star, has, within the last 100 years been employed to denote major-general (1822-80), and a major (1822-80). It is, in reality, not merely a metal mould or a patch of simple embroidery, but very definite in form and design, being a modified representation of the Star of a Knight Grand Cross of the military division of the Most Honourable Order of the Bath, one of Britains four senior orders of knighthood. Its use was established in a regulation of August, 1830, by which it replaced the star of the Most Noble Order of the Garter as a rank badge, except in regiments for which a national badge had been authorised, for example, the Life Guards, Horse Guards, Grenadier Guards, Coldstream Guards and Welsh Guards (which retained the Garter emblem), Scots Guards (star of the Most Ancient and Most Noble Order of the Thistle), and Irish Guards (star of the Most Illustrious Order of St. Patrick).

Reduced to one inch at its widest parts for military wear,

the star is, with a few exceptions, a replica of the brilliant star worn by Knights of the Bath on official occasions on their mantles. Square in outline, it is composed of rays bearing a cross patee (a form of cross in which the arms expand towards the ends and are flattened at the outer edges), centred with a wreath of laurel (in the original form red berries were interlaced with the leaves), enclosing a circlet edged and inscribed *Tria Juncta in Uno*, meaning "three joined in one". It is generally supposed that this refers to the union of the British Isles. The centre piece is charged with the ensign or badge of the Order, represented by three Albert Crowns (which look like acorns) set two above one.

During the period 1855-80 a single star signified the rank of major-general, major, and ensign (junior officer, subsequently known as sub-lieutenant, and later as second lieutenant). In those days differentiation in rank was indicated by position rather than nature of the insignia. Fundamental changes had been made nearly 20 years after Queen Victoria's accession. Epaulettes and wings, on which devices of rank had hitherto been worn, disappeared, and all that was left to decorate the shoulder was a small twisted cord, forerunner of the shoulder strap of today. Insignia came to be worn on the collar at either side of the neck opening, and by the lacings on their collar officers of different rank wearing the same insignia could be readily distinguished. General officers had gold oak leaf lace, one inch long,

all round; regimental officers of field rank wore regimental pattern lace, $\frac{1}{2}$ -inch wide, all round; and captains and lieutenants had lacing around the top and in front only. This system, while somewhat involved, was necessary, for not only did three grades of officers wear the single star insignia but lieutenant-generals, lieutenant-colonels, and lieutenants all wore a crown.

The design of crown used last century was slightly different from that in use today, which is a three-dimensional representation of the regal crown in the conventional form adopted by Edward VII on his accession in 1901, and is one-inch by one-inch. Outstanding variation is that the arches, which in themselves are indicative of Royalty, are elevated acutely instead of being depressed in the centre. With the exception of the crown used by Stephen in the 11th century, early Royal crowns had no arches until that of Henry IV, which had the semi-circular arches with which we are familiar. It was the Stuarts who adopted the depressed form of arch, which characterised Royal crowns up to the time of Queen Victoria, who reverted to the original design. Nevertheless, it was not until after her death that this style was adopted for military purposes.

A general description of the Royal crown shows it as a jewelled circlet bearing four crosses patees and four fleurs-de-lys, placed alternately at equal distances from each other. From the crosses rise two arches, which intersect above the centre,

with a mound or orb, surmounted by a cross patee, set at the point of join. On each quadrant of the arches are nine pearls. Up to the time of Henry VI strawberry leaves were used in British crowns instead of crosses patees, and it was not until the 12th or 13th century that the fleur-de-lys, badge of the kings of France, was substituted for pearls.

The patch of red velvet visible between and within the arches on an officer's crown represents the loose lining of velvet — termed the "crown cap" — of an actual crown, and indicates the right of peerage. It has a turn-up of ermine, which forms a base for the jewelled circlet. In an NCO's crown the crown cap is represented in solid metal, this being the only respect in which the insignia differ. It is an interesting point that although the velvet forming the crown cap of the regal crown is purple, red is always used in heraldic designation and similarly in military form.

Allied with crossed batons enclosed in a laurel wreath, the crown forms the insignia of a field marshal. The baton itself has long been a symbol of office, and although in the badge it is depicted as a plain staff, it represents a column of red velvet, studded with lions of the Royal crest, with a plinth and capital of gold, and a figure of St. George and the Dragon, at the head. Crossed batons were worn in silver embroidery between 1822 and 1855, and were then represented in crimson velvet outlined in gold and minus the figurehead, with the whole

enclosed in a silver laurel wreath. Later, the plain gold insignia was adopted.

Generals are distinguished by a sword crossed with a baton, surmounted with varying devices to denote degree of generalship. Surmounted by a crown and star, it signifies a full general; surmounted by a crown alone a lieutenant-general, and by a star alone a major-general. But in the period 1822-55, when insignia were worn on embroidered gold epaulettes of scarlet jackets, all general officers wore as a rank badge a crossed sword and baton, with no surmounting device. Differentiation was to be found in the groupings of the two rows of buttons on the coat, these being arranged nine in each row, evenly spaced, for a full general; nine in each row, grouped in threes, for a lieutenant-general; and ten in each row, grouped in pairs, for a major-general.

For the rank of brigadier-general in 1880 the crossed sword and baton, with no surmounting device, was adopted, but in 1928 the badge selected was a crown over three stars set triangularly.

The Royal coat of arms was introduced in 1917 as a symbol to denote certain ranks of senior NCOs.

Like officers, NCOs formerly wore their insignia on epaulettes and shoulder knots, but this practice was discontinued in 1803, when an order issued from the Horse Guards¹ stated that

¹ The Horse Guards was the original name given to the British Army's Headquarters, it being situated on Horse Guards Parade in London. It is now of course known as the War Office.

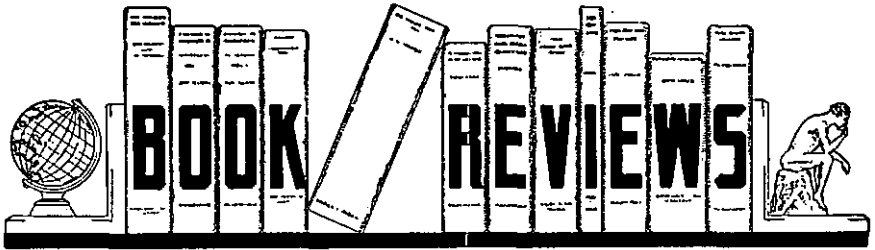
NCOs would hereafter be distinguished by chevrons made of the lace at present used in their regiments, placed on a piece of cloth the colour of the coat and worn on the right arm equidistant from elbow to shoulder. Use of chevrons is not a unique feature of British Army system of rank badges, for in varying forms they denote non-commissioned rank in most countries.

Small chevrons composing the body of the bars, or "stripes", are comparable to the design of worsted, braid or gold lace used originally, when four bars designated a sergeant-major or QMS, three bars a sergeant, and two a corporal. Later the single stripe for lance-corporals was introduced, and a number of differentiations for senior NCOs and officers of warrant rank came into being, ending with the abolition of the four stripes except for inverted stripes of Drum Major and Pipe Major. In 1962 colour sergeants were distinguished by a crown over three bars — the badge now worn also by a CQMS and staff-sergeant, and in 1881 the crown, worn on the right cuff, was substituted for the four bars of a sergeant-major. Today the crown, alone or enclosed in a laurel wreath, is used as a badge for those classified as warrant-officers, 2nd class, which group includes staff

sergeant-majors, WO2s, and brigade or regimental QM sergeants.

Introduction of the coat of arms, also used variously alone or wreathed, for those in the classification WOs first class (including WO1s and staff sergeant-majors), came towards the end of 1917. This badge is based on the design of the King's coat of arms, and should be familiar in detail to everyone.

The lion and unicorn support the arms, which bear in the quarters devices of the British Isles — the three lions passant guardant (prowling, full face) of England, lion rampant of Scotland, and stringed harp of Ireland, and are encircled by the buckled garter and its motto — *Honi soit qui mal y pense*. The unicorn as a supporter was incorporated in the Royal Arms of England upon the accession of James I, then James VI of Scotland, whose arms were supported by two unicorns. The enscrolled motto of the whole — *Dieu et mon droit* — rests on a field containing the rose, thistle, and shamrock emblems grafted on one stem, and the crest is a lion above the Royal crown. The lion and crown in this form is worn as a cap badge by colonels and brigadiers, and surmounts the crossed sword and baton on the cap badge of general officers.



THE FINAL CAMPAIGNS, by Gavin Long. Volume VII, Series 1 (Army) of "Australia in the War of 1939-1945" (Australian War Memorial, Canberra, A.C.T.).

This is the concluding volume in the official history of the Australian Army in World War II. Its publication marks the completion of the formidable task undertaken by the Editor-in-Chief, Mr. Gavin Long, nearly twenty years ago, a task he has fulfilled with sincerity and very great ability. The Australian Army and people owe him a debt of gratitude for his painstaking research, and for the literary skill with which he has assembled and presented his material.

This volume takes up the story of the Australian Army's part in the war in the South West Pacific from the end of the Finschafen operations in November 1943 to the close of hostilities in August 1945. It covers the campaigns in the Finisterres, Aitape-Wewak, New Britain, Bougainville and Borneo. The fighting in these campaigns is described in the detail which characterises the other volumes in this series. There is therefore a wealth of information about the conduct of war in a tropical environment, from the problems

of the high command to those of the company commander.

In assessing the results of the mopping up campaigns in the Aitape-Wewak area and on Bougainville, Mr. Long doubts if these offensives should have been undertaken at all. And well he might. Plenty of people had grave doubts at the time. The wisdom of undertaking arduous and costly offensives in these areas in the general situation which then obtained was queried in Parliament and in the press. And, as Mr. Long shows, the troops themselves felt that the exertions and sacrifices they were called upon to make were entirely unnecessary and quite unlikely to serve any useful purpose. If fighting morale did not actually deteriorate, danger signals were clearly discernible. In the Aitape-Wewak area the malaria rate became alarmingly high, and very strict measures had to be instituted to ensure that the troops did in fact swallow the prescribed dosage of suppressives. It is significant that at this stage of tropical campaigning these measures had to be taken. If they lowered the malaria rate, they heightened the resentment of the troops.

On Bougainville it was suddenly decreed that the officers' privilege of censoring their own

letters was withdrawn. Presumably the base censorship weekly reports to the Australian Commander-in-Chief (General Blamey) showed that a high proportion of officers' letters contained criticism of the campaign. This measure, too, heightened resentment, and if the Japanese capitulation had not intervened it would have failed to allay public disquiet. On the contrary, it might have increased it.

Mr. Long shows that the Commander-in-Chief, South West Pacific Area, General MacArthur, did not order these offensives. They were undertaken solely on the responsibility of the Australian authorities, though, initially at any rate, the Government does not appear to have taken a deliberate, considered decision on the subject. It is significant that when criticism developed in Parliament five months after the offensives had started, General Blamey produced an appreciation showing with much fallacious reasoning, why they ought to be undertaken. This appears to have been the first appreciation on the subject tendered to the Government.

We should be grateful to Mr. Long for the able manner in which he has set out the facts, for it is high time that we started to learn from our own mistakes instead of devoting so much attention to the mistakes of others.

Unfortunately, when Mr. Long turns to the question of high command in the South West Pacific he does the sound and impartial judgment he brings to

bear in other sections of the volume little credit. In his attempts to justify General Blamey's acceptance and discharge of the dual and divergent roles of Commander-in-Chief AMF and Commander Allied Land Forces, he becomes distinctly anti MacArthur. He ignores completely the principle involved and the impossibility of one man successfully carrying out both roles simultaneously.

When he was appointed Commander-in-Chief, South West Pacific Area, General MacArthur submitted his plans for the organisation of his command to the US Chiefs of Staff. In this submission he said that the commanders of the land, sea and air forces "would be free of all administrative, supply and political considerations, permitting uninterrupted concentration on combat", and that "the land forces would be commanded by an appropriate Australian general". He was probably surprised when the Australian general allotted to him turned out to be Blamey who retained his appointment of Commander-in-Chief AMF and who was thus necessarily involved in numerous weighty matters which had nothing to do with the conduct of operations.

Towards the end of the war General Blamey himself stated the same principle in somewhat different terms. In a letter to the Minister for the Army defending the retention of HQ Second Army on the order of battle he wrote — "A prime essential of the control of armies in war is the assignment to each sub-

ordinate commander one primary role, and not two or more possibly conflicting roles."

Mr. Long endeavours to show that Blamey was able to carry out both roles because he installed his Deputy Chief of the General Staff at his advanced HQ in Brisbane. This won't do at all. MacArthur had established his own HQ in Brisbane, and so had the commanders of the sea and air forces. He was surely entitled to expect the commander of the land forces to be there too, giving his undivided attention to operations instead of remaining in Melbourne to administer the AMF. Nevertheless, there is nothing in American official or unofficial writing to suggest that MacArthur asked for an American Army Headquarters. HQ Sixth Army appears to have been sent out as the result of a report by an independent inspecting general.

Mr. Long maintains that we could have provided enough experienced staff officers to enable MacArthur to form an integrated Allied General Headquarters. If there were any good Australian staff officers to spare at that time there was mismanagement somewhere. The surplus was not noticed by the staff officers who were working excessively long hours to cope

with the situation. Mr. Long's point that MacArthur made no real effort to assist Blamey to form an integrated Allied Land HQ would be more convincing if he explained why the two senior officers — a colonel and a lieutenant colonel — allotted to Advanced Land Headquarters in Brisbane were given unimportant jobs not directly related to operations in a back room of the Training Directorate.

Although he claims that we had staff officers to spare, Mr. Long omits to mention that we did have a number of generals well qualified by training and experience for the post of Commander Allied Land Forces. Why was not one of these officers appointed?

We are entitled to suggest that things might have been very different if the Australian officer appointed to command the Allied Land Forces had done what the commanders of the Sea and Air Forces did — set up an operational headquarters alongside MacArthur and devoted their whole attention to the battle.

These errors of fact and interpretation detract only very slightly from the general worth of Mr. Long's book. It is simply that on this subject he got out of his depth.

— E.G.K.