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# AUSTRALIAN ARMY JOURNAL

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The views expressed in the articles in this Journal are the author's own and do not necessarily represent General Staff opinion or policy.



Photo: Australian War Memorial, Canberra

### TOBRUK 1941

When the Italians extended their grip over Libya in the decade before World War II they built strong fortresses at Bardia and Tobruk. Bardia, the most easterly of the fortresses, was taken by 6 Australian Division and other British forces on 3-4 January 1941 in General Wavell's first desert offensive. 6 Australian Division, with supporting British units, then moved on to attack Tobruk.

The Italian garrison of Tobruk comprised some 25,000 men and 200 guns. The outer defences consisted of a double ring of concreted posts, all strongly wired and protected by a deep anti-tank ditch. On 21 January 16 Australian Brigade drove a wide, deep breach through the southern face of the defences. 19 Australian Brigade passed through the southern face of the defences. 19 Australian Brigade passed through the breach, and by nightfall the following day all resistance in the fortress had collapsed.

In March Axis forces commanded by General Rommel launched a counter-offensive which drove back the British forces in Libya and invested Tobruk. 9 Australian Division was the principal infantry element of the garrison until relieved by 70 British Division six months later.

The picture shows troops of 9 Australian Division patrolling the anti-tank ditch during the siege.

# THE C.M.F. RIFLE COMPANY



## TRIUMPH OR TRAGEDY?

Major R. I. Harrison, MBE  
Royal Australian Infantry

**The Company Commander is responsible for the training, operation and administration of his company.**

— *Infantry Training, Vol. 4,*

### *Part 1 — The Battalion.*

HAS ANYONE lately considered the plight of the rifle company commander in a CMF infantry battalion? His position, especially in a country centre where he commands a sub-unit stripped of its time-honoured regional and AIF affiliations, could scarcely be worse. Generally he lacks the distinction of war service and had replaced a Lieutenant-Colonel who had considerable status in the community. To the city fathers and to local ex-servicemen he can only represent a mere shadow of bygone years and may even remind them of the lower level which their city now occupies in the army structure. The local support which was so strong in many districts prior to 1960 is not likely to manifest itself again during this decade.

The situation would be tolerable for the company commander if he could believe that his company had achieved any degree of operational efficiency but, unfortunately, this is unlikely. His charter requires him to prepare his company to take its place in battalion operations within a certain period after mobilisation. Regardless of how dedicated he and his fellow officers may be, the standard he can achieve under present conditions will fall well short of that desired. There are two factors which contribute to this deficiency and they are quite plain to any intelligent observer.

Firstly, the CMF battalion does not recruit enough men of the right calibre. This is particularly revealed wherever



enquiry has been made as to the number of former Cadet Under Officers joining CMF battalions. The results of such enquiries have led to the suggestion that cadets are a waste of time and money but a closer examination of the situation may reveal otherwise. In order to arrive at the correct solution to this question we must realise that the youth of above average intelligence today is in many respects different from his fore-runner of twenty-five or even fifteen years ago. He has an independence peculiar to his generation and an affluence which makes a wide range of recreations available to him. CMF infantry training, as it is currently presented, is probably less attractive to him than the army he knew as a Cadet Under Officer where, as a platoon or company commander of seventeen years of age he received the encouragement of his school and the respect of younger cadets. How then is the CMF infantry to compete in modern society? The answer is to be found in the common theme of post-war sports. The recreation which has swept Australia is surf riding, and the enthusiasm for water skiing, skin diving and parachuting is worth noting. The common theme in all these is the challenge they present.

The CMF infantry battalions must be ready to offer a similar challenge, and infantry in its present form of recruit training followed by exercises in minor tactics certainly does not do this. If any further evidence is required on the importance of a challenge to today's young men,

the ready acceptance of the Outward Bound schools should provide it.

It may be suggested that an understanding of Australia's isolation in a hostile corner of the world should result in a rush to serve the colours regardless of the type of service required. However, such a suggestion disregards completely the modern environment. Ever since today's youth could read, the newspapers have reported a succession of crises, so that the grim awareness that gripped the world at Munich can never again occur with such intensity. Further, the advent of more fearful nuclear weapons has produced an indifference which finds expression in jingles such as "One flash and you're ash". Clearly the motives of the past are not adequate to the present.

The second factor which mitigates against a high operational standard is the high turnover of other ranks, and the effect of this is serious. Obviously, without continuity in personnel the standard of minor tactics must be at a very low level because a sub-unit cannot be effectively trained unless it has some cohesion. How can a CMF infantryman with an average of eighteen months part time training compare with a regular soldier for whom two years is stipulated as the required training period before operations? The CMF rifle company must therefore be regarded as well below the desired standard of operational efficiency.

While improved pay and conditions can contribute to a

reduction in turnover, the major reason for the high turnover in CMF battalions is the type of training offered. For the private soldier an excursion on sub-unit level, regardless of the standard of umpiring, is often a period of boredom during which nothing happens of interest to him and nobody tells him what is happening. Immediately, the question of how to train officers in tactics without such exercises will be raised. The German General Staff proved thirty years ago that this problem does not exist.

It must therefore be concluded that the CMF infantry company in its present form is not fulfilling its role and is unlikely to do so while the voluntary system persists. In this sombre picture there is, fortunately, a gleam of light. The outstanding success of the CMF Commando units should be the subject of considerable thought.

These units recruit well in quantity and have a relatively small turnover of personnel. The key to their success is undoubtedly the challenge which they offer to the individual soldier, coupled with a pride in membership of a corps d'elite. It may well be argued that commando units are not training as part of a conventional battalion and that they could not operate as such. However, the operations in South East Asia in

the last five years have been notable for the large number of small scale actions and it could be that there has been too much emphasis on conventional battalions and conventional tactics. Certainly commando units would be ideal to counter infiltration or insurgency. However, the possibility of Australian forces being committed with large American forces must not be overlooked. In this case the CMF battalions, if called on to operate at an early stage, could expect minor roles such as L of C security. The infantry may therefore have fallen once more into the error of training for the previous war. Regardless of the validity of this argument, a company of CMF commandos could be brought to a satisfactory level in conventional tactics much more quickly than most CMF rifle companies today. If this is accepted then the only obstacle to the conversion of rifle companies to commando training is the cost in equipment and regular instructors.

An immediate conversion of all infantry units would be extremely difficult and could well fail because of the strain on available resources. However, a pilot project which aimed at converting one company in each State would take only a short time to implement. The result must surely be of greater significance in our defence than existing paper tigers.



# HISTORICAL PROCEDURES OF RECRUITING GUERRILLAS

Franklin Mark Osanka

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IT IS NOW generally recognised that guerillas cannot operate nor exist for long without the active support of at least a small portion of the population and the passive indifference of the majority of the remaining population. It is also recognised that the guerillas actually represent only a small segment of the entire insurgent force. The larger segment consists of a covert underground apparatus within the civilian population. In brief, the guerillas carry out overt actions on the basis of timely intelligence information from the civilian population about the activities of government forces. The population further aids the guerillas by providing food, shelter, medical care, labour, and recruits. Most importantly, the population under guerilla control denies information to the counter-insurgency force concerning the hideouts of the guerillas and the identities of the underground apparatus and auxiliary personnel within the population.

We will be concerned here with the various historical techniques of recruiting non-combatant civilians for the guerilla force. This paper does not pretend to cover all of the factors involved, nor does it address itself to guerilla recruiting techniques as practiced in any specific past or current guerilla movement.

Recruiting personnel for the guerilla force is probably one of the most critical missions of the guerilla command apparatus. For in order to achieve the ultimate aim of overthrowing the enemy force, the guerilla

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command apparatus must expand and swell the guerilla force until it approaches the character of a regular army. This thought has been demonstrated in all of the guerilla movements occurring after the end of the Second World War. Historically, most guerilla forces begin with a modest number of personnel. This initial force ranges anywhere from twenty to one hundred men and, in some cases, women.

Before describing specific techniques of recruiting personnel for the guerilla force it will be beneficial to recognise and elaborate on certain conditions that are necessary to assure maximum success of the recruitment programme. The first of these is *area assessment*. Before embarking on an ambitious recruiting programme, the guerilla leadership must make a complete and exhaustive area assessment which will include information about the complete social strata in the guerilla warfare operational area. This assessment will include the prevalent political motivations, an index of the social stratification of the area, existing occupational specialities, and many other factors. An example of the utility of such an assessment is as follows. Area "X" contains several mineral and rock mines. The guerilla leaders know that very often mine workers make excellent *demolitions specialists* because of their utilisation of dynamite. The guerilla area assessment shows that Mr. "Y" does not entertain the same political belief as the govern-

ment in power and the assessment also shows that Mr. "Y" is dissatisfied with his current class position and feels that the present government restricts the degree of social prominence that miners can attain. Obviously, Mr. "Y" will be a ready and attentive audience for the guerilla technique of *persuasion* (which will be discussed in detail later in the paper). The above example, while admittedly a simple one, does illustrate for the purpose of this short paper the value of an accurate and up-to-date area assessment which must be conducted by the guerilla leadership.

The second condition necessary to successful recruitment for the guerilla force is *security*. The existence of an adequate guerilla force security system is of paramount importance to the continual existence of the guerilla force. One of the best methods for the enemy to penetrate the guerilla force is to utilise individual agents who, once in the guerilla force, provide information to the enemy regarding guerilla movements and actions. Thus, is it extremely important that the guerilla leadership be especially cautious in assessing the loyalty of guerilla recruits. Lieutenant Colonel William C. Wilkinson, who served with the O.S.S. in Burma in the Second World War, sums up the problems of security facing outside agents who are introduced to a strange area.

"In a new and underdeveloped guerilla area, it is extremely difficult to check each man to determine where his loyalties

really lie and this becomes still more difficult when a language barrier exists. Each man was screened, insofar as possible, to determine his loyalty and whether he was joining with an active desire to fight. A basic error was made in recruiting, in that the group leader, without an adequate knowledge of Kachin traits, personalities, and past history of the individuals, personally interviewed each candidate. The errors which resulted from this selection showed up in the form of a revolt during training by five men desiring higher pay and later by the refusal of a few men to leave Ngumia for patrol or ambush. In retrospect, it would have been better to have selected one or two individuals about whose loyalty and desire to fight there was no question, and to have allowed them to examine applicants under the supervision of the group commander. Although this system is not perfect by any means, it did produce excellent results when finally adopted at Ngumba".<sup>1</sup>

Wilkinson's "retrospect technique" while primitive, was expedient for the moment and might very well be applicable in some future operation. This writer would suggest that Wilkinson's techniques be taken several steps further to insure adequate security. These further steps would include a questionnaire which would further establish the recruit's identity. The questionnaire would aid in establishing the recruit's true loyalties and motives and would also help the guerilla leadership

determine the most profitable means of utilising the recruit. For example; if the recruit mentions on the questionnaire that he has had experience as a radio mechanic the guerilla leadership would consider utilising the individual in a communications position.

The length and the time permitted to complete this paper do not allow the writer to further develop this extremely important condition of a successful guerilla recruiting programme. Suffice to say that a guerilla force cannot just accept any recruit into the ranks. All recruits must be thoroughly screened. The most stringent methods will not insure that no agents will successfully infiltrate the guerilla movement, but it does insure that the majority of the agents will be detected before they have an opportunity to do any serious damage.

The third condition that deserves attention here is that the guerilla leadership must establish an effective *psychological operations programme*. The guerilla force must propagate the thought that their fight is a just one and that they will eventually achieve victory. They must also widely propagate the thought that the guerilla force is winning and shall continue to win. The enemy must be presented as an oppressor of basic human needs and rights. A continual objective of the guerilla force must be to encourage the population to identify psychologically and physically with the guerilla movement. The farmer

<sup>1</sup> "Problems of a Guerilla Leader", *Military Review*, November 1952, p. 26.

who donates a bag of grain has taken the first step in physically identifying with the movement. The motive that stimulates the gift may have been purely a selfish one such as fear that the guerillas might terrorise him if he did not make some overt show of approval of the guerilla movement. Regardless of motive, if the guerilla leadership is psychologically sophisticated, the farmer will soon be an ardent supporter of the movement. Upon receipt of the bag of grain the guerillas should praise the farmer as a true patriot. Perhaps Bayo explains the process most appropriately when he asks and then answers the question in the following way:

"How must a guerilla behave with farmers? No matter how much food may be obtained, it should be well paid for after having repeatedly thanked the proprietor and having reminded him that he is helping the revolution. Then the men should volunteer to repair things in the house; beds, closets, tables, etc. They will help the owner put fences up on the farm, to sow or to do any kind of manual work in order to demonstrate our affection and gratitude, and bring him over to our cause, so that those living in the house will be interested in our return."<sup>2</sup>

Much of what Bayo advocates is what Colonel Virgil Ney labels "propaganda of the deed".<sup>3</sup> Other examples of "propaganda of the deed" would be successes in combat against the enemy and material support

from an outside power in the form of supplies parachuted into the given country. While "propaganda of the deed" is certainly effective, it must be reinforced by other psychological warfare operational techniques such as rumours, pamphlets, and informal lectures in order to insure that the maximum amount of people learn of the deeds.

We have thus far discussed certain operational conditions which should be realised by the guerilla force before the guerilla leadership can expect maximum response to their recruiting drive. The remainder of this paper will be devoted to specific techniques and/or procedures of recruitment which have been utilised in one form or another throughout the history of guerilla warfare. The three major procedures which are to be listed and elaborated on in this paper are here labelled by this author as *paid*, *forced*, and *persuaded*. They will be discussed in reverse order of historical frequency.

The paid procedure of guerilla recruitment is the least practised procedure of the three. Guerilla leadership will usually resort to this method only in cases where a unique technical skill is needed and the individual possessing the unique skill cannot be persuaded to perform the needed task by ideological or moral argument. Professional people such as chemists, phar-

<sup>2</sup> Alberto Bayo, "150 Questions For A Guerilla", ed. by Robert K. Brown (Boulder, Colorado, Panther Publications, 1763) p. 53.

<sup>3</sup> "Notes On Guerilla War". (Washington, D.C., Command Publications, 1961).

macists, and doctors of medicine are the most common types that might be induced to serve the guerillas by this means. There are actually very few cases of the utilisation of this technique in the history of guerilla warfare because of the many weaknesses inherent in the system. Guerilla leaders have been traditionally reluctant to practise this procedure because financial incentive is always subject to outbidding by the enemy. Drs. Jacobs and de Rochefort offer a particularly clear thought on this subject when they write:

"Material incentives alone are not sufficient to secure this co-operation to any sizeable extent because material incentives are not sufficient to overcome fears of betrayals, reprisals, etc. . . . Except for some entirely insignificant exceptions, no member of the French or Dutch resistance movement during the German occupation was tempted by material rewards into helping Allied agents. No possible profit was worth the risks of torture by the Gestapo or the death oven of Matthaussen. Only ideological incentives can cause men to accept the dangers and fears involved in unconventional operations."<sup>4</sup>

The *forced* procedure of guerilla recruitment has become fairly common in the guerilla movements of the last twenty years. Basically, it is what the term force implies. Individuals are forced against their will to serve the guerilla cause. As in the case of the *paid* procedure above, professional people are

often the individuals forced to serve the guerillas. The guerilla leadership will usually resort to this procedure rather than the *paid* procedure if the current local situation does not make it politically out of the question. In Greece, during the guerilla war from 1946-1949, the Communists often practised wholesale *forced* recruitment with seemingly mixed results. On this matter the late Field Marshal Alexander Papagos wrote:

"Force was used both directly, by the compulsory enlistment of the population, and also indirectly. Under the latter method, individuals refusing to join the Communist ranks were dubbed collaborators of the enemy, a charge which involved the death penalty or at least the burning down of the delinquent's home. Peasants who saw this happen and feared similar treatment joined the Communist ranks."<sup>5</sup>

Since the support of the population is needed for eventual success of the guerilla forces it would seem that *forced* recruitment on a large scale would be ineffectual and out of the question since it would antagonise the population. And yet, "intensive forced recruiting inside Greece netted approximately 24,000 civilians"<sup>6</sup> for the Communist ranks. It is

<sup>4</sup> "Ideological Operations In Unconventional Warfare", in "Guerilla Warfare Readings", ed. by F. M. Osanka (Washington, D.C., Human Resources Research Office, 1962), pp. 168-169.

<sup>5</sup> "Guerilla Warfare", in "Modern Guerilla Warfare" ed. by F. M. Osanka (New York, The Free Press, 1962), p. 231.

<sup>6</sup> Lieutenant Colonel Edward R. Wainhouse. "Guerilla War in Greece, 1946-49; a Case Study", p. 224.

interesting to observe that students of the 1946-49 guerilla war in Greece list the lack of population support as one of the major factors contributing to the Communists' defeat in that guerilla war.

The final procedure of guerilla recruitment to be discussed here is the *persuaded* procedure. This is the most often used procedure and by far the soundest. The guerilla leadership must persuade the people that the guerilla fight is just and that the eventual victory of the guerilla movement is inevitable. Appeals must be made to the national aspirations, popular causes, and the population's dissatisfactions with the present form of government. Very often the guerilla leadership tries to avoid "... specific pronouncements at the inception of the organisation. By remaining vague, they are able to accommodate individual aspirations and thus increase their ranks."<sup>7</sup> The leadership of the French resistance movement against the Nazi occupation forces in World War Two seemed to have adhered to this policy of "accommodating individual aspirations" and thereby gained the support and talent of many different classes of the French social system. As Gordon Wright points out, "the working class furnished most of the militants, the 'infantry', of the underground, but it was the bourgeoisie that furnished most of the organisers and leaders."<sup>8</sup> Historically, the enemy of the guerillas have been instrumental in aiding the guerillas in achieving success using the persuasion

procedure. The enemy does this by harshly mistreating the population. General Alexander Orlov, formerly a member of the Soviet NKVD, vividly describes how harsh treatment by the governing powers serves to escalate popular support for, and the number of recruits for, the guerilla movement.

"Peaceful peasants and other groups of hard-working people do not take up arms lightly against superior forces of the government, unless they have been driven to it by unendurable hardships, onerous taxation, property confiscations, and naked violence. Before armed resistance succeeds in gaining land reforms and concessions from greedy landlords and corrupt government, peaceful life is disrupted, the rural economy is disorganised, trade is at a standstill, whole communities are devastated, and lives are destroyed. It is because the injustices and sufferings have reached the boiling point that the most desperate and determined men take whatever weapon they can lay their hands on — from fowling pieces to axes and clubs — and retire into the hills and woods, from where they stage fierce raids on the estates of their feudal overlords and local police outposts. The men become outlaws. The authority of the government is defied. Punitive detachments of rural police arrive to track them down.

<sup>7</sup> J. K. Zawodny, "Unconventional Warfare", *The American Scholar*, Summer 1962, p. 390.

<sup>8</sup> "Reflection on the French Resistance", *Political Science Quarterly*, September, 1962, p. 339.

People suspected of aiding the rebels are persecuted. Many are arrested. Order is gradually restored. The authorities learn from the population that the outlaws have fled to another country. But when everything seems quiet and the detachments are getting ready to depart, the rebels come down from the hills in the middle of the night, overwhelm the sentries, destroy the police force, and make away with their rifles and ammunition. The population begins to regard the guerilla band not only as a fighting unit, but also as a political entity united by the ideal of freeing the inhabitants from the arbitrary rule of the landlords and their feudalistic regime."<sup>9</sup>

Often, the *persuasion* process simply amounts to the guerilla force making it known that they are accepting recruits. Many youths will volunteer for excitement while other types will join the guerillas in order to avoid police or government persecution. Needless to say, of the three procedures of guerilla recruitment, the *persuasion* procedure is the most effective.

In summary, it has been demonstrated that there are three major historical techniques of guerilla recruitment. These are the *paid*, *forced*, and *persuaded* procedures. In order for these procedures, and particularly the *persuasion* procedure, to be most effective three distinct conditions must exist. These conditions were labelled in this paper as *area assessment, security and psychological operations programme*.

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# SOME PROBLEMS CONFRONTING MILITARY COUNSEL

Flight Lieutenant M. K. Bannister  
Royal Australian Air Force

THE LAST TEN YEARS have seen the emergence of an entirely new kind of Service officer, the Service advocate. He virtually owes his birth and existence to the court-martial appeal machinery which has forced the armed services to set their judicial systems in order and conduct the trials of accused persons with due regard to the accepted standards of civil process.

For generations the military system was permitted to hand out summary justice from "rude tribunals composed of rough men of the sword".<sup>1</sup> This outlook was the result of the retreat into which the soldiering mind was forced under the attacks of Blackstone and the common lawyers of the 17th Century. Denied a place in the development of the law, it took refuge in the backwater of its own autocracy and stayed chained because it did not allow scrutiny of its own actions.

Conscription and the ascendancy gained by the legislator over the marshal were the two main factors which contributed to the exposure of service judicial process to public examination. From 1919 onwards a number of Committees published reports<sup>2</sup> and made

recommendations, culminating in the acceptance of a long-resisted proposal for a civil appellate court to which a convicted serviceman could carry his case. The way was illuminated by the creation of the United States Court of Military Appeals which was set up in 1951 mainly as a result of the spirited activities of the American Bar Association.

The Australian Court-Martial Appeal Tribunal came into existence in 1955.<sup>3</sup> It was not long before it made its presence felt. Public criticism of Service Courts was given wide publicity and the Service Boards reacted predictably. The house had to be set in order. Full justice had to be done in future.

Previously courts were untidy affairs. Presidents were untrained and unsure of themselves. The prosecution was normally conducted by a Unit Adjutant. The Defending Officer was a local officer chosen by the accused or assigned to the task and without any legal training. The Judge Advocate was a legal staff officer who was out of touch with criminal law de-

<sup>1</sup> Macauley — "History of England" Vol. 2.

<sup>2</sup> Notably the Darling, Oliver, Lewis and Spens Committees on Courts Martial procedure (UK).

<sup>3</sup> Courts Martial Appeals Act, 1955.

velopment and with little or no contact with the professional Bar. Guidance from the Judge Advocate General was unknown. The Judge Advocate attempted to keep the whole rambling matter roughly on the rails and was forced to back-stop for the prosecution and the defence as the occasion demanded. Acquittals were rare. Sentences varied widely. Instead of an independent instrument for the discovery of truth, these trials may well fit the description "a shuffling ritual dance celebrating a decision already made by the convening authority and his staff".<sup>4</sup>

### The New Being

Following the advent of the Appeal Tribunal, many trials foundered on the inadequacy of the cases presented by the advocates and in one case because the summary of evidence was actually lacking. The Judge Advocate could not longer interfere, having been firmly re-set on his woosack. Quashings at convening and Board level resulted, and in some cases non-confirmation and retrial was resorted to.

It became apparent that trained advocates were necessary, even at the summary of evidence stage. The presidents had to be trained to the point where they could conduct themselves in a manner befitting their task. The Judge Advocate had to be given a fair opportunity to improve his professional knowledge and be removed from extraneous duties, with a chance to call on a mentor for guidance. But this would

all smack too much of a "Judicial Paternalism" if those who argued before the Courts were left to muddle along in the old uncertain way. It was recognised that special knowledge and training were necessary to fit these advocates for the task of presenting a competent case and representing fully the interests of the accused.

This new being, the military counsel, is still evolving and although his position is firm, his development is uncertain. It is of great importance to the system that he be developed along sound lines because, as the sound Bench depends upon a strong and competent Bar, so will the military judiciary depend upon a well-trained and efficient Bar of Military Counsel — and it should be recalled that the "military judiciary" is composed not only of judge advocates, but serving officers who sit on courts martial.

For some time now the military advocate has been a regular officer whose position and limits of activity have not been made clear either to himself or to the Service in which he hopes to make his career. All the usual influences of "judicial paternalism", "command influence", "team player", have been operating upon him. His ethical position often conflicts with his Service interests. He is answerable to superiors who may not view some of his advocacy as

<sup>4</sup> Murphy — "Army Defense Counsel; Unusual Ethics for an Unusual Advocate" — 61 Columbia Law Review 233 (1961). This writer has drawn heavily (and unblushingly) from this stimulating article by Major Arthur A. Murphy, Judge Advocate, General's Corps, United States Army.

being wholly "in the interests of the Service". He may, in good conscience, be bound to espouse unpopular or militarily difficult cases.

The typical professional commander sees the Service system of justice as an adjunct of command, useful in promoting discipline and separating undesirables from the Service. Commanders like the system to reflect their own attitude of paternalism toward subordinates; fair but firm and unencumbered by legal technicalities. The normal convening officer and his legal staff, while not denying the accused a "just result", want a speedy, economical and frictionless trial with no embarrassing complications, much less an appeal. Hard fought defences which make things "awkward" are not popular and those who fight them even less so. Those who advance the interests of their clients too far may not advance too far themselves. It has been suggested that there is a Service responsibility which runs parallel with and sometimes eclipses the ultimate responsibility to the man to be defended.

### The Effect

This attitude recently has been blunted considerably by a number of factors:—

- (a) The virtual encouragement of use of the appeal machinery by those at departmental level.
- (b) The solid backing and objective attitude of a fearless and independent Judge Advocate General and his staff.

- (c) The orienting and education of presidents and the training of commanding officers who are shown that the only fair way to conduct a trial is the adversary system.

- (d) The stimulation of an active and competent reserve whose strength lies in this independence and whose ethical and vigorous defences are an example both to the Service generally and to military counsel.

The results flowing from these factors are incalculable in their extent. The effect has been felt in the most unlikely places. Service police no longer resort to improper or questionable practices. The legal staff are much less likely to recommend trial without compelling evidence. COs know that charges must be framed properly and well supported and that an accused airman will take up the offer of election of trial by court martial in the sure knowledge of an independent trial with a vigorous defending officer arguing his case. Prosecutors no longer pick up a brief with the casual, unprepared air. Courts are more prone to acquit in the doubtful cases or impose the moderate sentence. Convening officers are more ready to leave the decision to the properly conducted court, knowing that both causes will be advanced and argued properly and that the just and proper decision will be arrived at by a court thoroughly instructed by competent Judges Advocate. Similarly, it is now accepted that any reaction from a trial

by way of petition or appeal lies almost beyond the sphere of blame of service procedure or want of diligence and fairness on the part of Service officers.

The present philosophical acceptance of the acquittal or light sentence, sometimes unjustified, is in marked contrast to the misgivings in high places of some five years ago. Most commanders now seem to realise that even an acquittal will not cause the collapse of the disciplinary structure of their unit. Furthermore the airman's sense of faith in his own Service is heightened considerably. He has a certain and trustworthy system on which he can rely for proper punishment of the guilty and freedom for those not deserving of punishment. The barrack room lawyer is becoming a hollow ghost. Today the Military Counsel can find himself in either prosecuting or defending roles. In either, his ethical duties are clear, but in both his competence and diligence are under scrutiny.

### The Prosecution

There is a feeling, not unshared, that the swing of the pendulum may have resulted in an open season on prosecuting counsel. The Appeals Tribunal has not yet been approached by an aggrieved prosecutor. His task has become onerous because defending counsel make him prove his case and sloppy prosecutions are naturally unpopular with Judges Advocate. However, he has the backing of the whole of the resources of his Service and he should learn how to use them. Candour and

moderation are his sword and shield. It has been said that every accused person is entitled to a fair and competent prosecution. It is now generally accepted that the prosecutor should have wider discretion in the preparation of the case and in its presentation. If he is to argue the case, his views on the settling of the indictment and the presentation of the case should carry weight.

A great proportion of his task, however, relates to the administration of the trial and the effort and administrative capacity he displays in this field goes a long way to ensuring a satisfactory and unhurried trial. Even if the trial founders on a "no case" submission, a competent prosecutor should see that this decision is arrived at with as little administrative friction as possible.

The United States publication "Military Justice Handbook"<sup>5</sup> is a remarkably useful guide to the extent to which the Trial Counsel (Prosecutor can assist a court. It is to be hoped that the Australian Services will develop military counsel duties along these lines. Once appointed, such matters as these should fall within the proper responsibilities of prosecuting counsel:—

- (a) Contact and relations with the defence.
- (b) Travel and accommodation of itinerant court and Judge Advocate.

<sup>5</sup> Military Justice Handbook: The Trial Counsel and the Defense Counsel (1962). Department of Army Pamphlet No. 27-10. Department of Air Force Pamphlet AFF 111-1-1.

- (c) Proper arrangements for witnesses, text references, exhibits and documents.
- (d) Administrative functioning of the recording service.
- (e) Custody of accused at all times.
- (f) Assistance to the Judge Advocate on all interlocutory matters, adjournments and trial administration.

For a great proportion of these duties, he will operate through and with the Base Administrative Officer, but the ultimate responsibility should rest with the prosecuting counsel. He may get a great deal of help from a lay assistant prosecutor who is usually a unit officer.

Of more than ordinary assistance to any Court composed of laymen, the prosecution's opening address is one facet of his duties which has sometimes been neglected. Care in preparation can assist any Court. It sets the stage for the trial and puts it in sketched perspective. The charge and its elements, a resume of the facts and a concise statement of the law on which the Crown proposes to base its case, should all be included. Even in the simplest case, Court members are usually grateful for having been given a rough idea of the direction of the weather before the storm of evidence and law breaks upon them.

Once the first witness enters the Court, the prosecutor is very much on his own. Only his training, professional capacity, sense of fairness and native intuition are available to help

him afloat. That "lonesome" feeling can be very real, but it can be made less real by ensuring that there is no personal interest or emotion involved in the outcome of the trial.

### Defending Counsel

It is difficult for defending counsel to shed the impression of "cut and dried" when first hearing of a brief for an accused serviceman who is to be tried by court martial. The man usually has been the subject of a service police investigation, tried by two summary tribunals without right to representation,<sup>6</sup> and has had to conduct his own case at the taking of depositions (the summary) at which he may not be represented.<sup>7</sup> Normally all the wrong turnings open to the accused in these circumstances have been taken and it seems such a long way back through the maze and over the hurdles. This is no time to be discouraged. Acquittals have been won from here many times before. One thing, however, is sure. There can be no dichotomy of interest. The Service can demand none of your "loyalty" where the fair and proper cause of the accused is involved.

Perhaps the Defending Officer's greatest enemy is time, coupled with distance. It is rare that more than one day is available for preparation of the case on the Base although it may be that the summary of evidence has been sent up to a week prior to trial. If the trial locus is close handy a visit by the

<sup>6</sup> Air Force Act, Section 46 and Air Force Order 12/D/1 (KR1126).

<sup>7</sup> Rule of Procedure 4 (Note 6).

accused can be arranged. This is enough in the usual run of cases but in the more difficult situations involving complex issues it is hard at times to see how justice can be done to the accused's interests. The Defending Officer is thrown on to his limited research, his advocacy and his tactical skill and more often than not, his tact.

There still exists an unmistakable aura of authoritarianism about the service trial process which manifests itself more usually in the despatch with which the court seems anxious to dispose of the matter in hand. The military virtue of rapid decision can be fatal to the calm approach which should characterise any just trial. Adjournments are resisted and at most, unwillingly or grudgingly granted. The calling of witnesses from distant places brings a frown to the judicial brow. An air of discomfort and embarrassment arises if the defence accepts the Judge Advocate's invitation to mention any matter he may have overlooked in his summing up. All this calls for some tact and timing by the defence.

It would be unfair to give this picture with a one-sided slant. Service officers who sit in judgement are built to a particular mould. They are trained for a particular purpose and their minds develop along certain well-defined lines. Thus attendance at Courts is often at the expense of squadron efficiency. They have planned, rightly or wrongly, on being in court and away from home for just so long and have frequently

made arrangements for the return journey. It is understandable that anything that upsets this provisional planning is regarded as something of a nuisance. However, there will be not one murmur from anyone if the request for time is couched in reasonable terms and if it is afterwards demonstrated that the delay had at least some merit in advancing the defence case.

The defence task does not finish with sentence. It is now generally accepted that any petition or appeal arising from the trial will be carried forward at least in the initial stages by the defending counsel. It is hoped that the day is not far off when the defending counsel will carry the matter on appeal to tribunal level.

In some cases the timing of the lodgement of the initial petition can be critical.<sup>8</sup> It has been thought that the Confirming Authority's HQ is not the proper place to initiate the consideration of appellate action even on severity of sentence. The trial, usually hard-fought, is too recent and personal interest and feeling is sometimes high. Waiting until after confirmation has its difficulties but the possibility of re-trial is not one of them. While a petition on law or fact or severity of sentence will be considered in a more detached atmosphere at Board level, the chance of reversal or interference with the confirmation of a senior officer may be unlikely.

<sup>8</sup> A1r Force Order 12/K/15 and 15A (KR1294).

### Evidentiary Changes

The evidentiary problems facing military counsel are much the same as those in any other sphere and about as transitory. With the help and guidance of the RAAF Judge Advocate General and the Director of Legal Services the more archaic provisions are being ironed out. What is not so apparent is the almost imperceptible way in which our "common law" is evolving. Even the post-war period has seen changes in shades of meaning in a number of offences as military cases are re-written to meet modern needs.

One area of significant change is in the use to which "general service knowledge" may be put to supplement the need of proof. This has long been suspect. As a substitute for proof, the Court was invited to employ its general service knowledge to say that a particular fact was acceptable. Wide use was made of the convenient method of non-proof. However, the two Canadian Court-Martial Appeal cases of *R v Platt* (1963) and *R v Crenoweth* (1954) make it plain that only strict proof of fact will get by in future.

These changes are being hammered out on the anvils of the US and British Commonwealth Appeal Courts and our age-old military law is being interpreted for us — by civil tribunals.

### Wartime

The view is held widely that the present system of trial will break down in the event of a full scale war. There are those

who are charging military lawyers with establishing standards of perfection that cannot be maintained during a struggle. It is, they say, a peace-time luxury. It is not difficult to see the reason for this line of thought. But it is suggested that the arguments on balance are against that line. In the first place, a limited war such as Korea will not be hampered by trial process. The proximity and comparative calm of the support areas allow for this.

Certainly, a catastrophic conflict would mean the suspension, at least, of normal processes; but this is not the argument. Military legal process is not the end but the means whereby military justice is secured for those who serve. When all commanders are prepared to hand out fair military justice, the courts will have little business with the administration or supervision of the commanders powers of punishment. The task of military counsel is so to conduct themselves as to demonstrate the ideals and teachings of the fair trial and due process that they will be accepted as normal standards when the dilution of trained leaders occurs with the influx to the Armed Services in a conflict. Once fair dealing becomes as much a mental attitude, to the military mind, as obedience, little more need be done.

The difficult and urgent task is now and extends to the near future. As the battlefield comes closer the need for simple, direct solutions to problems becomes more urgent. The knobs and



excrescences of administrative inconvenience tend to be shorn off, no matter how subtle the shape. But when it can be shown that the threat to discipline, morale and the ruthless prosecution of war is not from a judicial system that reflects the liberal and just ideals of our civilian courts, but from a reluctance of some professional officers to accept such a system gracefully, then the more ready acceptance of proper process translates itself into a complete acceptance as a part of the normal serviceman's being. What was once an unsightly engraftment on to the military body becomes part of that body. The drop-tank becomes moulded into the fuselage.

#### **The Example of Counsel**

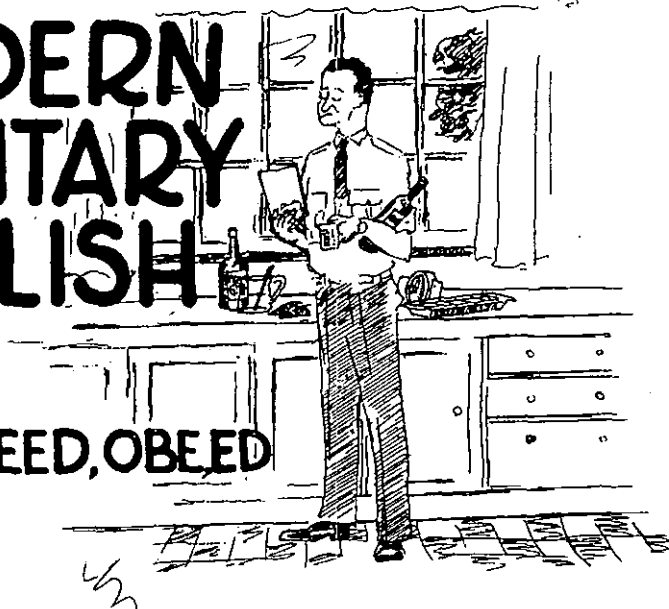
While the strength of the military judiciary lies primarily in its leaders and planners, the function of military counsel, however junior, can be an important complement in the task of moulding military thought.

Counsel so often has the opportunity, in the public forum during the serious business of trial, to demonstrate his ideals and beliefs. His actions and reactions are taken as an inexact standard of the branch in which he serves. Much of the opinion, good or bad, to be held by senior officers of the military justice system will be formed by what is seen and heard by them as they sit on the military bench. This scrutiny becomes even closer as military justice reforms assert themselves.

By his professional competence, his candour and his fairness the young military counsel can go a long way to undoing the tight knots of prejudice. It has taken our race some five centuries of professional soldiering to arrive at the unhappy and ruthless system of military justice which characterised two world wars. To reverse the process in twenty or even forty years may be difficult. Example may be the strongest strand in the silken halter of persuasion.

# MODERN MILITARY ENGLISH

**Colonel  
F.W. SPEED, OBEED**



Here is a recipe taken from a well known book on good drinks:—

### *Southern Mint Julep*

Chill glasses thoroughly in refrigerator.

When drink is required dissolve a little sugar and water in a jug or bowl. Add for each person,  $\frac{1}{2}$  gill Brandy,  $\frac{1}{2}$  gill Peach (or Apricot) Brandy, and 3-4 tender sprigs of mint. Stir up carefully.

Half fill the glasses with small pieces of ice. Pour in the mixture. Serve.

This is the way an indoctrinated staff officer would write it:—

### *Southern Mint Julep*

1. The aim of this instruction is to detail the approved method of manufacture of the alcoholic beverage known as Southern Mint Julep.

2. Not more than 24 nor less than 12 hours before the scheduled time for consumption of the beverage, the required number of glasses, drinking, 10 oz., should be inserted in the chiller compartment of a refrigerator, which should have the manual temperature control set at "cold".

3. Five minutes before the time at which the beverage is required to be served, the following procedure should be carefully implemented. (The quantities hereinafter specified are in respect of each person to be served.) Into a suitable container of appropriate capacity should be poured half a gill (Imperial measure) of water at a temperature of approximately 50 degrees Fahrenheit. To this should be added one-thirtieth of an ounce of sugar, which should then be stirred in such a manner that the sugar becomes

completely dissolved. Following this, half a gill of Brandy, hospital, five star, together with half a gill of Brandy, Peach, or Apricot, and three to four sprigs of tender mint should be added; and the whole should be stirred carefully.

4. Upon the successful completion of this operation, the glasses which have been chilled in accordance with paragraph 1 of this instruction should be

removed from the refrigerator and filled with ice to an imaginary line dividing the glass into two equal parts. Next, the ingredients contained in the container should be transferred to the glasses by pouring an approximately equal quantity over the ice, and distributing it equally round the number of glasses in use. Thus completed the beverage will be ready for early consumption.



# BRITISH INFANTRY IN SOUTH EAST ASIA

Brigadier A. G. Patterson, OBE, DSO, MC,  
Commander, 99 Gurkha Infantry Brigade Group

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THE FIGHTING in Borneo which was sparked off by the Brunei revolt on the 8th of December, 1962, is above all an Infantryman's battle and once again as has happened in every "Emergency" since World War II, we have been short of Infantry. Nevertheless, during the ten months between the 10th of December, 1962, and the 16th of October, 1963, no less than eleven infantry battalions have served in my Brigade for periods varying between three and six months, operating first against the rebels in Brunei itself and latterly against President Soekarno's confrontation in East Sarawak and Sabah. On the strength of this unique opportunity for studying our present day Infantryman in the jungle, plus some experience at company and battalion level in the Malayan Emergency and memories of jungle training and fighting stretching back as far as 1943, I am taking the liberty of writing critically on the subject which forms the title of this short article. I write as an Infantryman to Infantrymen in the knowledge that what I say

will be accepted as constructive and in no way a reflection on the many excellent battalions that have served and are serving in South East Asia.

My aim in this paper is to draw attention to five points which have an important bearing on our operational effectiveness in this theatre, and which are, I believe, in need of an airing. I do this in the conviction that the British nation, as part of "the West", will be for some time vitally concerned in the affairs of South East Asia, a region which contains two thirds of the world's population and in which the cold war is active in the military as well as the political and economic sense. If we are to make certain that the whole area does not disappear behind the bamboo curtain, Britain and her allies must continue to lend a hand to our friends in South East Asia, and this means inevitably that the British Army, and in particular the Infantry, will continue to be involved.

First I want to make some general remarks on organisa-

tions, weapons and equipment in relation to operations in South East Asia.

From a study of the history of the French war in Indo China it appears that one of the reasons they were defeated by the Vietminh was that as an army they were obsessed by the war winning worth of their superior organisations, weapons

and equipment of all kinds. They allowed the possession of these things to dictate their tactics instead of suiting their plans and tactics to the relevant local factors. They attempted, in fact, to force the war into the pattern which had proved successful under different circumstances. In the following passage a neutral observer describes the final French humiliation,

*Brigadier Arthur Gordon Patterson, OBE, DSO, MC, has been Commander, 99 Gurkha Infantry Brigade, since October, 1963.*

*Born in 1917, Brigadier Patterson was commissioned into the Indian Army in 1938 and posted to the 6 Gurkha Rifles.*

*From 1939-46, he served with 1/6 Gurkha Rifles on the North West frontier of India and, in the Burma campaign, as Adjutant, Company Commander, Second-in-Command and, finally, as Commanding Officer of the battalion. He was awarded the Military Cross after the fall of Mandalay.*

*The 6 Gurkha Rifles became part of the British Brigade of Gurkhas in 1948 and a year later Brigadier Patterson attended the Staff College at Camberley.*

*In 1950, Brigadier Patterson became Brigade Major of Brigade of Gurkhas. From 1951 to 1955 he was Brigade Major, 63 Gurkha Infantry*

*Brigade, and, as a member of 1/6 Gurkha Rifles, took part in the Malayan Emergency.*

*After attending the 15th course at the Joint Services Staff College, in 1955, Brigadier Patterson was GSO 2, Saceur's Exercise Planning Staff, at SHAPE, from 1956 to 1959. For the next two years he had command of 2nd Battalion, 6th Queen Elizabeth's Own Gurkha Rifles, leading operations against the Communist terrorists on the Malayan-Thai border.*

*In 1961, Brigadier Patterson became GSO 1 (Ops and SD) at Headquarters, Western Command.*

*He was appointed to command 99 Gurkha Infantry Brigade in 1962, and since then he has taken part in operations in the Borneo Territories of Sabah, Sarawak and Brunei.*

*He was awarded the DSO in February 1964, for his actions whilst Commander of his Brigade in Brunei, Sarawak and Sabah.*

highlighting the paradox which must be of dire interest to us, a fellow ex-colonial European Power, with much the same military and civil background as the French:

"The victors came in sandshoes, trudging through the mud with ammunition slung on bamboo poles, signals wire on tricycles, despatch riders on push-bikes. The vanquished went in trucks and armoured cars and half-tracks and lorries, trailing their howitzers and other weapons of conventional war. And all the while the rains the French had prayed for to save Dien Bien Phu splashed down cheerlessly on their retreat from Hanoi, a melancholy ending to an inglorious war.

"There was no honour in defeat, only humiliation. In total manpower the French and Vietminh had been almost equal. Technologically, the balance was heavy against the Vietminh. In all eight years of the war they did not have a single plane. The flights of fighters and bombers that passed over the jungles and rice fields each day were always French. So were the streams of transport, the Dakotas and Flying Box Cars, rushing supplies to every battlefield. The French had hundreds of artillery pieces, the Vietminh comparatively few."

The British Army today is basically organised, armed, equipped and trained for nuclear war in Europe or conventional war in open country against a more or less conventional enemy. These are "nor-

mal" whereas the sort of war the French fought in Indo-China and that we at any time may be required to fight anywhere in South East Asia is still regarded as abnormal. Our schools of instruction, our staff colleges, our training organisations generally reflect this attitude. Provided a unit is organised, equipped and trained to acquit itself well in Europe and the deserts of North Africa, it is assumed that it will be able to take in its stride any less "Colonial" type situation which may face it in the rest of the world. This is an attitude which has landed us into trouble in many wars from the Boston Tea Party to the fall of Singapore. The needs of a war to be fought in a primitive country with a bad climate over unimaginably difficult terrain against an enemy who refuses to be conventional, are given the lowest priority. As a result we are tied down in South East Asia by the wrong kind of ironmongery, which binds us to the very few and very vulnerable roads, and forces us onto the defensive. We need to be organised, equipped and armed so that we can operate far away from land communications. This means more and more VTOL aircraft and lightweight arms, ammunition and equipment which can be carried on a man's back, with maintenance by air supply.

Thus, in general terms, that portion of the British Army which is to operate in South East Asia should be armed, equipped, organised and trained for this particular role. Our technical "know how" must be

used to make more effective the tactics that the ground, the climate and the enemy's characteristics dictate, and not to tie us to roads and the fringes of civilisation.

My next point concerns the provision of forces required to fight in South East Asia.

The experience of the last twenty years has made it very clear that European troops pitched suddenly into the jungle are defeated by the climate, the terrain and lack of facilities before the enemy even takes a hand. To imagine that a soldier, a unit or a formation can be flown out from Europe in an emergency and flung into a jungle battle against the anti-like forces of Asian Communism is dangerous thinking indeed. It will take a good unit four months acclimatisation and re-training in the theatre before it will be fit to take on the Viet-minh, the Viet-Cong or the TNI. During that four months there will be casualties — men whose bodies or minds are insufficiently robust to accept the necessary adjustment. Furthermore only a unit which is really well led and well disciplined will make the grade. Jungle war will mercilessly expose any weakness in this respect.

Thus the forces required to fight at short notice in South East Asia must be stationed in South East Asia. Reinforcement plans must accept a four months acclimatisation and re-training period for all forces brought in from the outside.

My third point concerns the soldier himself.

The mental and physical robustness of a high proportion of British Infantry soldiers is below the standard required to fight and beat Asian Communists or the TNI and its "volunteers". I have seen brilliant exceptions to this indictment both as individuals and as units, but the generalisation is nevertheless true. Since most of our soldiers are town-bred products of a welfare state, mental and physical robustness must be inculcated consciously and methodically. The individual's whole attitude towards hardship, effort and danger must be changed. He must be made to stop thinking of these as things to be avoided and instead to accept them as a means of showing that he is as his father was before him, the finest Infantry soldier in the world. The unit needs to make a cult of the sort of toughness which on active service and training puts the fighting job first, and the comforts, the NAAFI stores, the fresh rations and the accommodation stores a very bad second. There should be no greater shame of an Infantry soldier who when trained is unable to "take it" however hard "it" may be.

Our enemies in South East Asia are inured to hardship and sudden death. They are hard, ruthless and dedicated. The climate is hot and humid. The ground over most of the area is swamp, paddy and jungle, mostly mountainous.

You have got to be hard, tough men, mentally, morally and physically, to be an In-



fantryman in this theatre. Nowadays in Britain such men are not bred naturally as they were in the hard old days. They have got to be made.

My next point concerns the soldier.

The British soldier of any arm is as he has always been, a good natured man, and long may this remain true. There is no contradiction in saying that the Infantryman must be hard on himself, ruthless towards the enemy so long as he goes on fighting, and at the same time kindly, helpful and tactful to the civilian population amongst whom he is living and operating. It is vital that he should be, because experience shows, our own experience and that of others, that it is not possible to win militarily in the sort of war we are considering in South East Asia, unless the active co-operation of the people is available to us and denied to the enemy. A second major reason for the French defeat in Indo-China was that they failed to win the co-operation of the people, and thus they fought surrounded by a hostile or at the best apathetic population even in those areas which for religious and other reasons were basically anti-Communist. In Malaya under Field Marshal Templer's leadership, it was the winning of the Hearts and Minds Campaign which enabled us to beat the CTs militarily.

There are three elements to the Hearts and Minds battle. The people where necessary must be protected from terrorism. They must be properly and

humanely administered, and the enemy campaign to subvert them must be combatted by our carefully co-ordinated and controlled psychological campaign.

The Hearts and Minds battle, along with all other operations, will be planned and controlled by the joint civil, police and military machinery which will invariably be set up as quickly as conditions permit, throughout the area of active operations. The Infantry soldier is likely to have a part to play in all three elements. But the greatest single factor in securing the co-operation and trust of the people is beyond the scope of joint planning and lies entirely in the hands of each and every soldier. If from their own observations the civilian population is convinced that the soldiers are well intentioned towards them, and as soldiers are well disciplined, properly trained and "on their toes", the Hearts and Minds battle is already half won.

In addition to the natural kindness of the average British soldier must be added, therefore, good behaviour at all times, an impressive, soldierly bearing and strict observance of the outward and visible signs of good discipline. Units and individuals must be made to realise the OPERATIONAL importance of this. The whole-hearted efforts of the majority must not be sabotaged by the slack discipline of the minority or the criminal instincts of the very few. Before a battalion is deployed into an operational area in South East

Asia this point must be hammered home by the Commanding Officer and his subordinate commanders at all levels. Like everything else this is a matter of first class leadership.

My last point is one of detail. The Infantryman in South East Asia must make an effort to learn the local language. A lot of valuable operational information is lost to us through the inability of the infantry patrols to talk man to man with the local people. Interpreters are sometimes untrustworthy, but more often fail to pass on what is operationally important because of their inability to recognise what is and what is not relevant. Colloquial language instruction must therefore be given a proper place in Infantry training programmes.

These are my five points. There are many of detail which cannot be mentioned in an article of this length, and which are already sufficiently recognised.

To meet the requirements of my five points we need a tailor-made theatre reserve, predominantly Infantry and strong enough to take on the first four months of any campaign which we may be called upon to fight in this theatre. Given this we will ensure that Britain has a force in this vital area tougher, better trained and more scientifically equipped for the job than anything that Communism can raise against us and our friends.

The alternative could be humiliation as deep and disastrous as the French. The weaknesses which I have tried to outline were apparent in our own shameful defeat in this theatre in 1941 and 1942. In one way or another we in the Infantry must do all we can to correct these weaknesses which, fortunately for us, the half-war in Borneo has once again brought to our attention. This time, forewarned, the Infantry MUST be fore-armed.

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The first and most decisive act of judgment which a statesman and commander performs is that of correctly recognising the kind of war he is undertaking, of not taking it for, or wishing to make it, something which by the nature of the circumstances it cannot be.

— Clausewitz.

# ARMY FILM PRODUCTION

Major A. W. Millen  
Royal Australian Infantry

AN ILLUSTRIOUS member of the Chinese race will be well remembered by his observation that one picture is worth a thousand words, and this has probably led to the Army becoming increasingly aware of the value of visual training. The demand for short descriptive films, covering many subjects, far exceeds the capacity of our resources, and the time has arrived for a study of the problems associated with the task of producing a short training film.

By reducing the problems to their bare essentials, it is possible to lower the value of these notes to that of two pictures. This article has been prepared in two parts:—

Part 1 — Introduction

Part 2 — Methods

## Part 1 — Introduction

These notes have been compiled in an attempt to provide a sketchy outline of some of the tasks involved in the production of a simple, short training film of about 12 minutes duration — or for that matter any other

film — designed for screening to an audience. They are intended to be of assistance to any officer, staff or regimental, who is faced with this problem, in an officer, staff or regimental, who of the many and varied pitfalls awaiting the rank amateur; to enable him to approach his task with some semblance of order and intelligence, and give him confidence in his prospects of turning out a Hollywood Spectacular instead of a dreary treatise in sound and colour on the merits of a spark plug.

*Major A. W. Millen enlisted in the AIF soon after the outbreak of war in 1939 and served in the Middle East with 2/11 Battalion. At the conclusion of hostilities he served with the British Commonwealth Occupation Forces in Japan, and later with 3 RAR in the Korean War. He is at present posted to the Directorate of Military Training at Army Headquarters where he is responsible for the production of training films and manuals.*

Fortunately for the amateur, the production of a film is carried out in a set sequence of tasks during which the original film is passed through a number of processes before it finally becomes acceptable for screening to an audience. This sequence, briefly, involves the following stages:—

- (a) Planning of a programme for filming.
- (b) Filming.
- (c) Processing of the original film (Processed Camera Original).
- (d) Production of a Work Print.
- (e) Compilation of a Composite Work Print — A and B rolls (if required).
- (f) Recording and acceptance of the Sound Track.
- (g) Production of an Answer Print.
- (j) Printing of copies of the Release Print — Composite Print.

### Pre-Planning

Some of the points to be considered in the pre-planning stage are:—

- (a) *Scope of the film.*
  - (i) What subject matter is to be covered and in what detail?
  - (ii) What is the duration of screening time allowed?
  - (iii) How much time must be given to each sequence?
  - (iv) Who is to prepare the dialogue (or script) outline for each sequence,

### (b) *Programme of Work.*

- (i) Detailed sequence of filming.
- (ii) Production of the film.
- (iii) Preparation of "Shot" Lists.
- (iv) Preparation of "Reel" Lists.

### (c) *Aids.*

- (i) Film crew — size and equipment (a three man team is ideal).
- (ii) Liaison officers from Directorate and Unit concerned.
- (iii) Slate.
- (iv) Titles and Art Work.
- (v) Maps and charts (if required).

### Filming

Filming should be carried out as far as possible in accordance with the preplanned sequence. This greatly assists editing and processing in the Work Print and Composite Work Print — A and B Rolls stages.

Film should be exposed by thoroughly trained experts who know how to take a shot perfectly and — most important — know how to maintain editorial continuity. The advice to the amateur therefore is to leave this aspect strictly alone.

### Processed Camera Original

This impressive title is given to the original exposed film after it is developed. Normally this film is not used for projection due to:—

- (a) Risk of damage to the film. It would be impossible to produce another film of an actual event.

(b) Technically, in some cases, it is unsuitable for projection.

### Work Print

Following the removal of obviously unwanted film, such as the ends of reels, termed "heads and tails", the reels of processed film are assembled in sequence and a print is taken from the original. This print is termed a "work print" and is used for editing, i.e., removing unwanted shots, altering the length of shots, changing the sequence and adding inserts such as films of maps, charts, diagrams, etc.

### Composite Work Print

#### — A and B Rolls

This is the technical process used to produce a print in which the appropriate optical effects such as "fade outs", "fade ins", "wipes" etc., are included to separate or link the various sequences. This type of print is not always required.

### Recording

The task of recording the sound track ready for inclusion in the film has to be completed at this stage. The art of recording script or dialogue calls for the use of professional artists highly skilled in this sphere. It may be of interest to learn that there are less than twenty such artists in Australia who, it is considered, meet Army requirements. Once again, the amateur must step aside.

### Answer Print

When the Work Print or Composite A and B Work Print has

been accepted, the final work of including the titles and sound dialogue, sound effects and music is carried out. This print is then offered to the originator for analysis and acceptance.

Another trap lies here for the unwary. It is possible that the film laboratory has in fact prepared more than one Answer Print before finally submitting a copy to the originator for his blessing. Answer print No. 4, 5, or 6 may be the first copy provided for screening — if the task is a difficult one.

### Release Print

A Release Print is the final form of the film after acceptance by the originator. This print may in fact be the Answer Print if such a print meets all the technical and production requirements. This title is also given to any subsequent copies of the film after acceptance of the answer print, such copies being a composite sound film in either black and white or colour.

### Part 2 — Method

The methods described in this Part are straightforward. No attempt has been made to cover technical difficulties which may be encountered or the various idiosyncrasies adopted by some producers who, in any event, reach the same conclusions.

There are several golden rules for amateurs. These are:—

- (a) Never interfere with the technical processes.
- (b) Seek the advice of experts in all matters.
- (c) Do not be alarmed at odd results achieved during the production stages.

### Pre-Planning

Montgomery used to plan a battle and then retire to consider the next problem, so certain was he of the outcome of his plan. Similarly, but on a much smaller scale, it is important to plan each step in producing a film.

Once the need for a film has been decided, a clear and detailed brief must be prepared to enable the producer to make an accurate appreciation of the task and the problems involved. Some of the factors to be considered are:—

- (a) *Scope of the Film.* The originator must indicate:—
- (i) Whether the film is required to supplement or replace a lecture or series of lectures.
  - (ii) The nature of the training and the level at which it is aimed, i.e., tradesmen, junior NCOs or senior officers.
  - (iii) The amount of detail to be included.
  - (iv) What special audio (sound) effects are required to achieve maximum effectiveness.
- (b) *Subject.* The title of a training film must have a definite bearing on the subject. The detail required to be included should be listed, for example:—
- (i) Combustion Engine
    - Components
    - Assemblies
    - Operation
    - Fuel System
    - Cooling System
  - Lubricating System
  - Accessories
  - (ii) Terrain Study
    - General nature of country
    - Vegetation
    - Cultivation
    - Rivers
    - Roads
    - Canals
    - Bridges
    - Communications
    - Airfields
    - Ports
    - Public facilities
- (c) *Duration of screening.* This will be governed principally by the scope of the film, the importance of the subject and the detail which it is required to teach. Ideally, training films should be limited to 20 minutes screening. It is difficult for the average person to absorb detail for longer than this period.
- (d) *Sequences.* The correct emphasis must be placed on those aspects which need to be highlighted. Therefore the question of allotment of time to each sequence must be considered in relation to its photographic value as discussed with the producer.
- (e) *Story Line.* This should be prepared by the Directorate/Unit requesting the film. The "story line" is prepared from the information gleaned from sub-paragraphs (a) to (d) above to enable the crew to follow the training procedures involved and the methods to be used in presentation.

If the film is to be placed on contract, all prospective tenderers would require a copy of this story line.

- (f) *The Shooting Script.* This stems from the "story line" and is required by the producer and cameramen to know which points to emphasize, and to obtain editorial continuity. The shooting script is an agreed consolidation of:—

- (i) The originator's requirements.
- (ii) What he can get.
- (iii) What is feasible photographically.
- (iv) What is feasible from the audio viewpoint.
- (v) What the producer/director can achieve.

It is usually compiled after a deal of bitter argument. However, once set, it becomes the whole foundation of the film, and whilst it may be varied slightly "on the job" for photographic or continuity reasons, it remains basically unaltered in concept and story.

- (g) *Commentary.* The commentary material for each sequence should be prepared by an expert in each of the particular fields covered. The responsibility for the preparation of the shooting and commentary scripts rests with the producer. Preparation of these is again a highly skilled job and the amateur must once more step aside. However, to provide the basic information needed by the producer,

service experts should be delegated to prepare outlines for guidance in those parts in which they specialise.

### Programme of Work

When the scope of the film has been decided, planning can then proceed on a programme of work. The main factors to be included in this planning are:

- (a) *Detailed sequence of filming.* The producer should now prepare a list of sequences in the order in which he requires them to be filmed. Ideally, this should be the order in which the sequences are to appear in the finished film. This list can then be used as a guide in the timing of preparation of "scenes", obtaining equipment, etc. It also serves as a check list to indicate the progress of the work. Due to a number of factors, it will rarely be possible to adhere to this programme of filming.
- (b) *Production of the film.* Before any filming can be carried out, "actors" have to be rehearsed in their parts to ensure correct interpretation of the originator's requirements, equipment must be obtained and "sets" prepared. It may be necessary, for example, to construct a complete native village or a bridge, or anything else which is to be shown in the film. The actual locations required for filming may have to be selected and prepared.



(c) *Aids.* Some of the more important aids to be considered are:—

(i) *Film crew* — size and equipment. Ideally, a three man crew should be employed. The team could possibly be:—

Producer/Director  
Cameraman  
Camera Assistant/  
Sound Recorder

The experts should be given a free hand in the selection of cameras and technical equipment.

(ii) *Liaison officers* — Directorate and Unit.

a. An officer from the Directorate concerned should accompany the film crew to advise units on Directorate requirements.

b. The unit officer is required for liaison on domestic matters within the unit.

(iii) *Slate.* This rather inexpensive item is of considerable value in recording on the film, details of each shot made by the cameramen. An ordinary child's slate will suffice for this work. The detail usually recorded is the film title or number, and the sequence or shot number. Writing on the slate should be in white chalk about  $\frac{1}{2}$ " thick. The slate is usually filmed for about one half to one second

at the beginning of a shot. This slating is in fact a responsibility of the camera crew.

(iv) *Titles and Art Work.* Here it is best to call in a draughtsman or illustrator and have him prepare the art work required to depict the title, any sub-titles, drawings or sketches required for the film. This work should be commenced early in the programme.

(v) *Maps and Charts.* It may be necessary to accentuate or reproduce those portions of a map or chart which are required for inclusion in the script. An illustrator should be employed for this task.

### Filming

This aspect should be left to the trained experts. A knowledge of typical problems facing the camera crew is of value to the amateur and enables him to appreciate their task. Some of these problems are:—

- (a) The vagaries of weather, not only bad weather but bad light, e.g., blue sky for two days and hazy (although not wet) sky on the third day could stop shooting.
- (b) Need for "good film" acceptable to everybody.
- (c) Time taken to set up equipment and to change sets.
- (d) Preparation of scenes and striking sets.

- (e) Time spent waiting for "mood" and "continuity". The camera crew should not be hurried.

The amateur can assist by preparing the "shot" lists and "reel" lists. These are:—

- (a) Shot List. This is a detailed record of each shot filmed on the one reel, usually compiled as follows:—

Reel No.	ft/secs	Shot No.	Title
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- (b) Reel List. This is a summary of the shot lists of all reels. The headings normally used are:—

Reel No.	Subject
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These lists are required both in progressively checking work completed and in the editorial stage.

### Processing and Editing

In these stages the amateur can only give assistance in the editing stage. He can advise on the length and sequence of shots if they are to be varied from that agreed in the shooting script. He can ask for optical effects to highlight or link some of the sequences. The technical processes to obtain the finished product are:—

- (a) *Work Print*. This is a print uncompensated in either colour or density, taken from the original material. It is usually in black and white, even from a colour original unless there is strong reason for a colour work print.
- (b) *Roll A and Roll B*. The original material is often divided into two rolls —

known as A and B. The reason for this is to introduce effects such as superimposition, fade outs and fade ins, dissolves, etc.:—

- (i) A superimposition is achieved when for example, the title of the film is placed in A Roll starting at zero feet as a reference point, and the background of jungle is placed in B Roll starting at zero feet as a reference point. Roll B would be printed first onto print film. The print is "wound back" to zero and then Roll A is overprinted on the picture already printed from Roll B. The end result is the film title appearing against a background of jungle.
- (ii) A fade out is achieved by turning off the printer light, or by other means reducing the light output, over a pre-determined period of time, thus giving a fast or slow fade out of printed picture. A fade in is the reverse process.
- (iii) A dissolve is achieved by fading out the picture in Roll A and at the same time fading in Roll B. This works as follows: The picture in Roll A would start at zero ft. and run to 30 ft. In Roll B from zero to 25 ft. would be "black" film. Thus at 30 ft. in

Roll A we would change to black, and at 25 ft. in Roll B we would change to picture, giving a 5 ft. overlap. Roll A is printed first, starting to fade out the picture at 26 ft. By the time 29 ft. is reached the picture will have disappeared. This print is now wound back to zero. The zero mark on B Roll is synchronised and away we go again. Since there is black film on B Roll to 25 ft., light is not passed through it and hence the picture already printed from A Roll is unaltered. At 26 ft. we start to fade in B Roll, and by the time we reach 29 ft., B Roll is fully faded in. Thus, over the strip 26 ft. to 29 ft. we have faded out Roll A and faded in Roll B, giving the appearance that scene A "dissolved" into scene B which then goes on until we want to repeat the process in reverse — simple isn't it! To make up a Roll A and Roll B film break-up may take days of intense work and concentration by the editor, working to an accuracy of one frame, or 1/40th part of a foot.

- (iv) Optical effects — wipes, etc., are done or made on an optical lathe whereby skilled and expensive operators can fabricate an almost

endless string of effects by using mirrors, prisms, and other tricks of their trade. Examples are:—

- a. Pathe newsreel introduction of a quadrature screen — four different pictures on the screen at once;
  - b. One picture wiped off the screen as another appears behind it;
  - c. Girls dancing in champagne glasses; etc., etc., etc.
- (v) Animation — requires an individual drawing for each frame or series of frames and must be filmed using a special camera and equipment known as an animation table. Animation is slow and very expensive and normally is of limited application to Army films.

### Recording of Sound

The prepared commentary script is now edited to conform with the film. This process involves "cueing" the script to fit exactly into the picture — a task which can occupy hours even for a simple 15 minute training film.

The recording of this commentary is the speciality of a professional. The task requires two machines — one for screening the film — and another synchronised with the first, to roll a magnetised sprocketed film for recording sound. The expert watches the film and

varies the speed of presentation, inflections in his voice, etc., to achieve the desired results. Music is generally added later, together with synchronised and "wild" sound effects to produce the finished sound track or "final mix" which is married with the picture to produce the answer print, and ultimately the release prints.

### Summary

(a) Don't do anything until you consult with experts whose job is film production.

(b) Leave the specialised jobs to the specialists.

(c) Be patient and long suffering.

(d) Don't try to be the producer.

Above all, remember that a committee has never made a successful film. It can plan and advise, but the final production rests with one man; the producer. What he can turn out is restricted or enhanced by the guidance, patience and assistance he receives from those with whom he must work.

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### COMPETITION FOR AUTHORS

The Board of Review has awarded the annual prize of £30 for the best original article published in 1963-64 to:—

Colonel M. P. O'Hare—"The Ethos of Patrolling" (August 1963)

and the second prize of £10 to:—

Captain H. L. Bell—"Australia Alone" (September 1963).

# WAR AND MORALITY

Anthony Harrigan

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

**T**HE GREAT CONFLICT of the remaining third of the 20th century may well turn out to be a struggle between the Free World Powers and the masses of the revolutionary Communist nations. If this comes to pass, the Western countries of the Free World bloc may have to reconsider their ideas of war and morality.

War by means of population pressure is a concept with which the West is almost totally unfamiliar and for which it is intellectually unprepared.

People in the Western World still embrace the idea that warfare is an activity reserved for professional cadres. This is a heritage from medieval Europe and its era of standing armies. Even the fact of total war, in the First and Second World Wars of this century, has not fully conditioned Westerners to accept the truth that today's wars are between entire peoples. No longer is it possible for conflict to be confined to the actions of professional soldiers

or even to the adult male citizens of a state.

Communist doctrine of warfare teaches that an army is composed of an entire people. Communism itself is an armed doctrine; the nation with all its people is committed to total conflict. The revolutionary mentality holds that every individual in a nation has a role in defeating the enemy.

Communist revolutionaries make no bones about the total recruitment of a people for war tasks. If a farm or industrial worker fails to meet a quota, he is regarded as a slacker and is disciplined. The specific individual failure is related to the nation's overall military goal of victory. If a youngster lacks a correct attitude toward his work or studies, he is treated not as a wayward youth, but as a soldier who has failed to do his duty while in national service. In a revolutionary nation each and every action is linked to the revolution or judged in its terms. No one is regarded as

exempt from service — war service.

### Distinctions

For Westerners to ignore this truth and to make distinctions between age and sex groups in Communist revolutionary societies is to make distinctions unknown to the opponent. The opponent's leaders are only too pleased when the West draws fine distinctions and looks at Communist revolutionary societies with the sympathy normally accorded free bloc societies, for such an approach weakens the West's defence of its interests.

It should never be forgotten that the revolutionary forces in the world pin a large part of their hope for success on their belief that the West is internally weak. The Communists believe that our refinements of conscience and concern for other people will, in effect, disarm the West so it cannot win the brutal struggle ahead.

### Paralyse Will

Modern revolutionary war, which is warfare between peoples, involves a struggle for the spirit of a nation. The primary aim of the revolutionary Communist nations is to paralyse the will of its Free World opponents as a prelude to seizing their territory. Therefore, the enemy consists of all the people on the other side. Their attack is directed against all the people on our side.

To a revolutionist, no one is an innocent bystander in this kind of warfare. As soon as a youngster can work, he is recruited into the army of the

revolutionary state and given duties to perform that are appropriate to his age and mental ability. The Chinese Communists adopted the commune system as a war measure, utilising the labour of the youngest and oldest groups in society.

Children often play key roles in the form of revolutionary war that falls under the heading of civil disobedience or non-violent warfare. Mobilising young people for street campaigns, for subverting nations and overthrowing regimes, is part of the conflict of our times. It is as much a part of national mobilisation as the organisation of technical and industrial resources and manpower.

In such a situation the West must reorient its attitude toward global struggle. There is the danger that the West may allow itself to be persuaded that its very struggle for survival is immoral. Although it has approved the use of heavy conventional armaments in a formally declared conflict, it tends to disapprove of blockade, border closings, and denial of food to populations that harbour and form the recruiting grounds of combat elements in undeclared conflicts.

In short, when the struggle is devoid of the big battlefield clashes that characterised World War II, Westerners are vulnerable to paralysis by their own ethical system. We could fire bomb German cities in World War II, but find it morally difficult not to supply food to civilian groups that form an army without uniforms.

Men and nations can become so sensitive that their existence is imperilled, so refined in moral responses that they cannot defend themselves against brutish forces. This is, in fact, a peculiar peril facing the West today. When clearly facing the threat of armed forces, it stands ready to fight. But when it is faced with the population bomb, utilised by a country that engages in undeclared revolutionary war, the West is restrained from using all the weapons at its disposal.

Yet if the Western countries do not retaliate with the best weapons available, the enemy will seek sanctuary in this lack of resolution. If, for instance, Communist revolutionaries are certain that the West will not use its best weapons in a war of subversion, then subversive warfare will continue to be their favoured revolutionary strategy.

The West should not hesitate to use, in measured response, all of its weapons — from economic blockade to military confrontation — to hold back the attacks of the revolutionary nations. The weapon choice should be made on the grounds of efficiency and enemy capabilities to retaliate. Weapons are simply a function of the will to live. If this will is morally correct, then the means of implementing it should not be restricted unless suicide is to be given a higher value than survival. The will to live, applicable to men and nations, is the motive force of all existence.

Time and time again the civilisation of the West — its

morality included — has been saved by brute courage and brute force. Western civilisation has been guarded not simply by men in cloisters and ivy-covered towers, but by tough-minded pikemen outside the walls of Vienna and by rough country boys and city-bred youths savagely cutting down Hitler's soldiers in the Ardennes. If these fighters had been restrained in the battle, as some of our conscience leaders demand we be today — those who say we must accommodate ourselves to the proletarian nations — the West would long since have fallen to invader hordes.

### Prudence

Clearly, moral demands must stop short of unreason. Compassion is a noble virtue. But, like all virtues, it must be tempered with prudence. Surely no religious imperative requires that the West be compassionate to its enemies to the point of accepting liquidation. The Judaeo-Christian civilisation is not a Nihilist civilisation, and no man of religious faith need feel compelled to embrace a solution to his national problems that is Nihilistic — that would end in national self-destruction.

Westerners can feel compassion for the Chinese Communists who live in misery. But this does not mean that we have to view compassion in terms of withdrawal or surrender. We should not take allegedly moral positions that would in effect, put a knife at the throat of our children.

Difficult as it may be for moderns to accept the fact, it is clear that each and all on the one side in today's global war are enemies to each and all on the other side. This is the perspective that is required for grasping the nature of the cold war. This perspective indicates an unlimited enmity which disappeared from warfare for a lengthy historical period because of the professionalisation of conflict, but which has returned to war.

### Definition

War has been defined in many ways in different periods of history. In our own epoch it has been customary to think of wars as an interruption of the natural state of peace between men and nations.

But an examination of history shows that there have been few periods of time during which men have not been engaged in armed conflict. In the post-World War II era, for instance, there have been conflicts too numerous to mention. It is impossible to refute the fact that this period of supposed peace — from 1945 to 1963 — has been seared by conflict. Some historians even refer to the post-World War II era as World War III. One need not dig very far into the history books to prove that warfare is the real state of relations between blocs of humanity.

It is frequently said that contemporary warfare is more brutal than war in ancient times. This ignores the facts of history. For those Spanish towns that were completely and utterly

destroyed by Moorish invaders, with every inhabitant put to the sword, warfare in the first millennium of the Christian era was as total as might be a future conflict with hydrogen bombs. A 19th century authority on the history of warfare said:

"It is in regard to non-combatants and their property that the mildness of modern warfare appears in most striking contrast with the severity of ancient times. The old rule was to regard every human being pertaining to the enemy's country as a foe, to lay waste territory, kill or take captive those who could serve in the enemy's armies, engage women and children, and carry off all the property of value which could be transported."

### Survival

Although it is an age of widespread conflict, the 20th century prefers to put a pacific interpretation on the essential nature of life processes. Yet biology as well as history make clear that all human life is a war for survival. All forms of competition among men and nations are forms of conflict, whether it be military, economic, or psychological. A battle for minds rages even when no shots are fired on a battlefield. Even in business, social life, and other areas of social relations there is constant struggle and conflict.

Our lives are spent in a climate of competitiveness. The only non-warring societies are those that are static. Our very concept of progress amounts to rising up over the conditions of life in which other peoples live.



Here, we get to the root fact of existence — the struggle for survival that often involves the clash of arms. Man is constantly in a battle with his environment which includes other human beings as well as the natural world of plants and animals and material conditions. The story of mankind is a chronicle of warfare with the elements, beasts, infirmity, and with other human beings.

The great nations can be simply defined as the nations that won the wars in which they engaged. A truly peaceful nation is one that has abandoned the role of leadership or that has sinfully accepted the

destiny of a puppet of great national forces. Nations that lose their instinct for the survival struggle, such as the Byzantine Empire, simply cease to exist.

The equating of life and conflict cannot be avoided by responsible interpreters of human behaviour and history.

Certainly, no people who have read the lessons of history are of the belief that non-conflict can prevail forever, or that peace is natural to human existence. To hold what one possesses let alone to make new advances requires constant struggle.

#### COMPETITION FOR AUTHORS

The Board of Review has awarded the prize of £5 for the best original articles published in July and August to:—

July: Major W. A. Piper — "Industrialisation in Mainland China since 1949".

August: Captain J. K. Leggatt — "The Human Factor in Warfare".

# RADIOLOGICAL SURVEY BY LIGHT AIRCRAFT

Squadron Leader J. A. Downie  
Royal Australian Air Force

IT HAS BEEN frequently stated in nuclear warfare reference books that light aircraft are capable of carrying out the radiological survey of an area of military operations.

These statements, although basically correct, could be misleading to staff officers charged with obtaining radiological intelligence, as the capabilities of light aircraft for these tasks are subject to significant limitations.

The aim of this paper is to explain the limitations to the capability of light aircraft to carry out radiological survey in military operations.

Aircraft have frequently been successfully used for survey tasks in peacetime nuclear tests. However, they have been specially adapted and instrumented for the purpose, and their equipment is not of the type available in the field for fitment to service light aircraft.

## The Tactical Requirement for Radiological Survey

Under conditions of nuclear warfare a commander may be faced with the problem of deploying forces in an area sub-

jected to nuclear fallout. In order to appreciate the risks involved in using contaminated areas, and to be able to direct precautionary measures, he must have the following radiological intelligence:—

- (a) The extent of the contamination.
- (b) The intensity of the contamination pattern related to standard time.

If troops are to remain in a contaminated area for any length of time, and their "usable life" not be unduly prejudiced for future operations, an intensity of contamination equal to 5 rad/hr at H+1<sup>1</sup> will be significant. Further, the deployment of installations and areas in which personnel will remain will depend upon the reasonably exact location of the various lines of intensity.

From these considerations a requirement emerges for the plotting of intensities at or above 5 rad/hr with accuracy for areas in which personnel may be deployed for any length of time.

<sup>1</sup> A rad is the unit of absorbed dose of radiation and represents 100 ergs of nuclear radiation per gram of absorbing material or tissue.

### Considerations Affecting Aerial Survey

The pre-planning of sorties and the briefing of crews may take a considerable time. Decisions will have to be made and briefing given on the following matters:—

- (a) The area to be covered and method of cover.
- (b) Aircraft availability considering other tasks.
- (c) Time available in which to complete the task.
- (d) Plotting and communication procedure required.
- (e) Locations of FDLs and enemy air activity etc.
- (f) Navigation plots.

In addition instruments (radiac) will have to be checked, zeroed, and fitted to the aircraft.

In order that the intensity reading obtained from an aircraft can be related to that on the ground over which the reading was taken an Air Ground Co-relation Factor (AGCF) must be applied. These factors are not constant and vary considerably with local conditions. The main variables affecting AGCF are:—

- (a) The nature of the soil at Ground Zero.
- (b) The height above sea level of the area to be surveyed.
- (c) The time after burst.
- (d) The vegetation and terrain of the area to be surveyed.

AGCF can only be accurately determined by measuring ground readings and comparing them with readings taken over the same spot by an aircraft at

a known altitude above ground. Even then they would only be true for the particular type of terrain and vegetation tested.

Typical AGCF values are too inaccurate to be of practical use. For heights of 1000 feet the typical factor from United States sources is 28 and British sources 40. The implication of this variation is that a reading of 1 rad/hr taken from 1000 feet would give a ground reading of 28 if the US factor were applied, and 40 rad/hr if the British were applied.

### Aerial Survey Methods

The two main methods of survey are:—

- (a) Constant Time Interval Method.
- (b) Pre-selected Point Method.

The Constant Time Interval method involves the selection of a series of easily identifiable points on the periphery of the area to be surveyed. These points are numbered, both on the map used by the pilot, and that used for plotting at base. The aircraft flies over the first point and crosses the survey area towards the second point. The observer, using a stop watch, takes readings at fixed intervals which have been pre-determined but are generally between 15 and 30 seconds. The same procedure is used for succeeding pairs of points. It is possible to compute the aircraft position at each reading and so obtain the isodose rate pattern on the base map.

For the Pre-selected Point method well-distributed, easily-recognisable points are selected

within the area to be surveyed. They are then numbered in such a manner as to be flown over in logical succession, and the reading taken over each. An isodose rate pattern is prepared as above.

Both these methods require good horizontal and vertical visibility and a terrain area containing readily identifiable landmarks.

Whatever method is used, it is essential that the aircraft fly at the same altitude at each time of reading, or altitude variations are noted at each reading so that varying AGCFs may be applied. In other than reasonably flat terrain this involves either:—

- (a) The piloting problem of gaining or losing altitude between each reading point.
- (b) The observer problem of reading and transmitting both altitude and intensity at each point.

The former problem offers few difficulties if the changes in altitude between points are not significant or the change is constant, but in rough or mountainous country the difficulties would be insuperable.

With reference to the observer problem, the normal procedure is to radio data to base immediately it is read in order that plotting can proceed concurrently with survey and that the data is not lost in event of mishap to the aircraft. The time involved under these circumstances of having to transmit and read another instrument at

each point, which may be only 15 seconds away from the next, may prejudice the accuracy of the results.

### Light Aircraft Limitations

Light aircraft limitations in respect of use for radiological survey may be classified under two headings:—

(a) Performance.

(b) Instrumentation.

Performance limitations are:—

- (a) Inability to fly at low level over broken or hilly terrain at a constant height above ground.
- (b) Inability to fly at low altitudes by night or in conditions of bad visibility.
- (c) A relatively high speed over the ground, which when coupled with radiac instruments response time leads to inaccurate spot readings. (This does not apply to helicopters, but the short endurance of 2.4 hours of the Bell 47G imposes limitations to survey area at low speed.)

Instrument limitations refer to height measurement. Light aircraft are fitted with aneroid altimeter which measure height above sea level, and not radio altimeters which measure height above terrain. As the reading from aneroid altimeters has to be related to the ground above which the reading was taken in order to determine AGCF the exact point of reading must be accurately known if the figure for the ground reading is to be accurate.

### Current Service Radiac Instruments

Radiac survey instruments currently available to ground forces are of the ionisation chamber type and have ranges in the order of 0-300 rads/hr. They are not capable of being fitted with remote probes and must therefore be read from within the aircraft and the reading related to the aircraft protective factor. They have a slow response time as they have been constructed for use on the ground in a stationary position where quick response is not essential. Their order of accuracy is at the best plus or minus 10 per cent.

Let us examine in detail the results we could expect to obtain from using such an instrument in a light aircraft flying at 1000 feet above terrain where there is a ground reading of 5 rad/hr (5000 m rad/hr). Taking the AGCF as 40, the reading at the height would be 125m rad/hr. To obtain the reading inside the aircraft the protective factor would have to be applied. If this were 2, a reasonable figure in the circumstances, the aircraft reading would be 63 m rad/hr. Applying the instruments order of accuracy the figure would then be between 69 and 57 m rad/hr.

It is not within the capability of the current Radiac Survey Meter No. 2 to accurately register this reading on a scale about  $2\frac{1}{2}$  inches long covering a range

of 0-3000 m rad/hr, nor any other similar instrument designed for ground use.

For accurate aerial survey a special instrument is essential. This instrument would have to be fitted with a remote probe, have a rapid and steady response time, and be fitted with a scale on which intensities in the order of 50 m rad/hr could be accurately and rapidly read.

### Conclusions

The capability of service light aircraft with current equipment to carry out radiological survey to the order of accuracy necessary for accurate assessment of the hazard to ground forces is most severely limited by:—

- (a) Dependence on good horizontal and vertical visibility.
- (b) Problems of maintaining even altitude above terrain, or being able to accurately record altitude variations between readings in the time available.
- (c) The limited capability for aerial use of the current range of radiac survey meters.

Their use is therefore restricted to surveys where accuracy is not essential and where high orders of contamination on the ground are to be expected.

Rugged terrain could entirely eliminate the possibilities of its radiological survey by light aircraft.