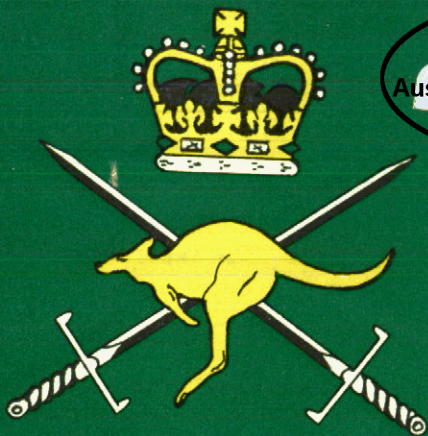
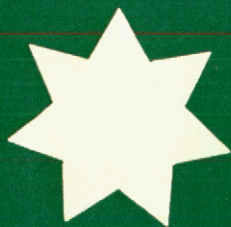


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Photo: Australian War Memorial, Canberra.

FRANCE, 1916-18

After the evacuation of Gallipoli in 1916 the Australian infantry divisions were transferred to France, where the Western Front had become stabilised in two deep and heavily fortified trench systems extending from Switzerland to the English Channel. With both flanks firmly anchored, the efforts of both sides were confined to attempts to break through the opposing lines.

From 1916 until the first quarter of 1918 a series of tremendous battles took place in efforts to break the deadlock. In these battles the penetration hoped for was rarely achieved. Advances were measured in yards, very often at the cost of astronomical casualties. Even when the initial penetration was sufficiently broad and deep, it was impossible to move the artillery forward through the morass created by its own bombardment. Without the fire support necessary to subdue the hostile machine-guns, the infantry counted themselves lucky if they could cling to the meagre gains they had made.

The picture shows Australian infantry moving along a newly-captured German communication trench.

THE RECONNAISSANCE TROOP

Lieutenant M. A. Count,
4/19 Prince of Wales Light Horse

MOST officers are aware that a squadron of a Royal Australian Armoured Corps reconnaissance regiment is permanently allotted to a Pentropic Division. Officers who have recently been involved in promotion examinations know that the squadron has five troops and that in certain circumstances an infantry battle group commander may have one of these attached to him.

It is the writer's experience that this is approximately the point at which knowledge of the RAAC reconnaissance troop fades out.

When on exercise or in a TEWT the question is asked "How will you employ the reconnaissance troop at this stage?", the answer will be something like this: "Give them something to escort", or "Traffic control", or even more vaguely, "Flank protection of course".

This lack of practical knowledge of the capabilities of the reconnaissance troop is not surprising. It is only since the re-organisation of the AMF in 1960 that ARA field units and eastern States CMF troops have had the opportunity of seeing reconnais-

sance troops at work. Current training pamphlets give the sketchiest outline of the organisation and roles of the reconnaissance regiment and the new series of pamphlets has not yet been issued.

The aim of this article is to explain the organisation and capabilities of the reconnaissance troop (not the squadron), and to outline briefly the methods employed within the troop.

Definition

A reconnaissance troop is an officer's patrol. The armoured vehicles and their crews exist to supplement the officer's eyes and to protect him. The significance of this definition will be brought out later.

Composition

What does the reconnaissance troop consist of in vehicles and men? There are three types of wheeled armoured vehicles, all of which are capable of more than 40 m.p.h. on roads and with fair cross country performance. They are well armed and relatively immune to small arms fire and to nuclear radiation compared to unarmoured vehicles.

There are four Ferret scout cars armed with .30 calibre Browning machine-guns. One of these is commanded by the troop leader, the remainder by NCOs.

There is one Saladin armoured car mounting a 76 mm gun, and two Brownings, one co-axial and externally mounted for air protection or for the commander's use in close country. The main gun has an effective range of five thousand yards with high explosive shell, and fires armour-defeating, canister or smoke shell to shorter ranges.

The remaining vehicle is the Saracen armoured personnel carrier armed with a Browning and containing, apart from a basic crew of two, a sergeant and eight assault troopers. For some reason the sight of armoured troops fighting on the ground confounds the observer and confusion abounds. But they are simply an infantry section trained to live in and to fight from their carrier and as a matter of conven-

ience they are troopers of the RAAC. In addition they are trained in such assault pioneer tasks as booby-trapping, minor demolitions and small scale mine-clearing. They have three important functions:—

- (a) They provide the troop leader with a dismounted offensive potential but only to the degree expected of a lone infantry section.
- (b) They form a dismounted reconnaissance patrol for searching ground for which the vehicles are unsuitable and for protecting the troop leader when he is dismounted in such a task.
- (c) They provide protection to the vehicles in close country or at night.

A diagrammatic layout of the troop is shown in Figure 1.

Firepower

The reconnaissance troop has a wide range of weapons and is



LANCE CORPORAL



TROOP LEADER



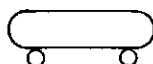
TROOP SERGEANT



CORPORAL



TROOP CORPORAL



SECOND SERGEANT

NOTE: AS THE SYMBOLS FOR SCOUT CARS AND PERSONNEL CARRIERS ARE NOT FULLY COVERED IN "STAFF DUTIES IN THE FIELD" THE SYMBOLS USED WERE SUGGESTED BY DRAAC.

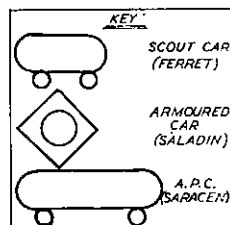


Figure 1

able to produce heavy fire for short periods. Its weapons comprise:

- (a) One 76 mm gun with 45 rounds (the break-up of ammunition types is determined by the theatre and the task).
- (b) 7 Browning machine guns and 16,000 rounds.
- (c) 1 light machine gun (in the assault section).
- (d) 8 sub machine carbines.
- (e) 6 rifles.
- (f) 7 pistols.
- (g) Grenades 36M and white phosphorus for the smoke dischargers fitted to each vehicle.

Administration

Depending on the terrain, the troop has a range of up to 200 miles and rarely less than 120 miles. Rations and water for three days can easily be carried without affecting the fighting efficiency of the armoured vehicles. Additional small arms ammunition can be carried on engine hatches and elsewhere externally in independent operations and, as the squadron is generously equipped with Landrovers, two of these attached to the troop may make it self-sufficient for six days. It is normal, however, to replenish troops, even when detached to battle groups, on a daily basis using the accepted armoured echelon system.

Employment

This is all very nice but can the reconnaissance troop justify itself to the infantry commander in terms of additional security?

Let us examine some of the ways in which the troop leader handles his resources to meet different tasks. But first an explanation of how ground affects the troop in a 'searching' or 'watching' role is desirable.

Perfectly flat open ground is rare and is naturally 'mother's milk' to an armoured car commander. During the discussion of various roles certain distances and frontages will be quoted. This is a dangerous practice of which the writer is well aware, but they should serve as a rough guide for readers unfamiliar with armoured cars but who have an idea of the space taken up by a battle group whether mounted in carriers or dismounted.

Vegetation and rolling or undulating terrain cause the troop to reduce its frontage. The best country of all is that which is open and dotted with high hills several miles apart as is common in some wheat growing areas throughout Australia, e.g., in Western Australia.

Reconnaissance (Medium and Long Range)

This is the primary role of the troop. In this example let us assume that the troop is providing a screen ahead of an advancing carrier-borne infantry battle group which is supported by tanks. The infantry commander has three important requirements:—

- (a) Early warning.
- (b) Detailed information of the enemy force: in particular, details of its strength and direction, its tanks and other special equipment.

(c) Information on going and obstacles.

The troop leader's first consideration must be to prevent surprise of the screened force. He must use his different "instruments" to gain maximum frontage without compromising his own security. He subdivides his force into:—

- (a) The 'seekers' — the four scout cars which, small, fast and low, do most of the looking. As they travel, always in sight of one other scout car, they automatically report on the 'going'. (As this causes heavy traffic on the wireless net, messages are very short and the time is given in the report in case there is delay in finding room on the net).
- (b) The fire support — the armoured car goes for the best central fire position from which it can see the scout cars.
- (c) The dismounted support element — the carrier, which travels on the centre line and is held in reserve in case the section is required for a clearing or ground reconnaissance task.

Remembering the definition of the troop, that it is an officer's patrol, an enemy contact sets the the following sequence in motion:—

- (a) A crew commander reports enemy tanks to the troop leader.
- (b) The troop leader checks the report visually, unless it will cost too much time and space or will reveal his position.

(c) The troop leader reports the contact back to squadron headquarters which is either at battle group headquarters or is represented by the liaison officer (who is on the wireless net).

(d) The troop leader now "keeps tabs on" the enemy by ensuring that at least one vehicle can see the enemy whatever he does.

(e) This maintenance of contact can be a simple withdrawal into friendly territory or may be a series of complicated, stealthy moves, something like an overgrown chess game. Contact will not be broken without a direct order from the squadron if the enemy veers away, and will continue until the enemy makes contact with the friendly force.

The value of the troop in this task will be obvious. The infantry commander is not obliged to detach part of his force as a reconnaissance element, and, sure of early warning, may employ an order of march for rapid movement as the need for sudden deployment in the event of a surprise contact is removed.

Depending on the ground, in flat open country the troop frontage may be 2 to 3 miles, and its distance out from the screened force up to the range of its wireless sets — 10 to 15 miles. Notice that the troop makes no attempt to join with the enemy but runs for cover. The troop only fights to extricate itself from too intimate contact unless aggressive reconnaissance is 'called for.

Flank Protection

Probably the battle group commander will require similar security for his flanks and rear. The requirements here are the same as before, but the troop has to extend the length of the screen as a rule, as an advancing force is often "longer" than it is "broad".

The troop in this case may employ all its vehicles in a searching role, and will travel in line ahead, probing with its scouts the ground ahead. The remainder watch the open flank and a system of movement is used which allows most of the vehicles to be stationary for this purpose, as it is most difficult to pick up distant movement from

a moving vehicle. The armoured car and the carrier are usually positioned centrally in the troop. Each vehicle remains in sight of the vehicle behind it and, ground permitting, a screen may be up to 5 miles long. Experiment has shown that nothing can penetrate a screen of this type provided that a rate of advance of 12 miles in the hour is not exceeded. (See Figure 2).

Line of Observation

A line of observation is established to cover an obstacle, where possible, and it explains itself. It is simply a screen which is stationary. Some occasions when a reconnaissance troop may be required to establish a line of observation are:—

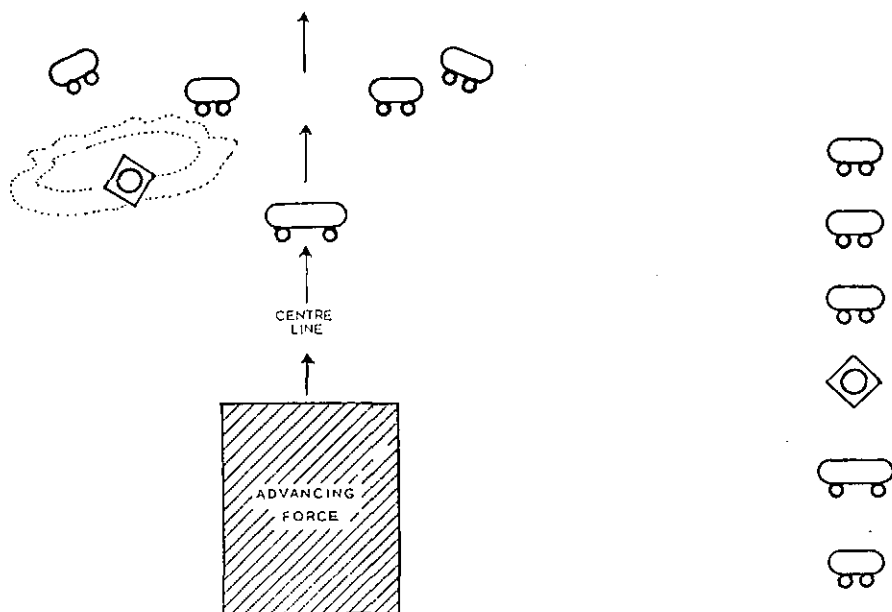


Figure 2

Reconnaissance Troops in advance and screening a flank

- (a) When the force it is screening halts.
- (b) When assembly areas or start lines are to be secured.
- (c) During withdrawal when the troop may assist as covering troops. (Remember the fire-power).
- (d) At night when an important defile which has been watched during the day must be safeguarded. It is normal for the troop to 'go home to mother' at night, but in this case the troop would leaguer close to the defile and watch it with its assault section, with the vehicles in a hidden position.

The method employed in a line of observation is normally to gain maximum frontage if the role is purely one of seeing without being seen. The armoured car and the carrier are sited centrally in case the flanks get into trouble. But in the case of watching a bridge in order to impose delay on the advancing enemy, the armoured car takes the main fire position, the scout cars interlock their fire and ensure that the delaying position will not be outflanked, and the carrier provides additional fire or secures the withdrawal route unless the assault troopers, in the absence of engineers, are required for demolitions.

Watching tasks require a high degree of discipline and skill in selection of observation positions. Crews require a great deal of patience and must be alert for hours on end to detect the slightest movement. Camouflage has to be perfect and withdrawal routes worked out finely. The

tendency for the troop to put six vehicles forward simply because it has six vehicles must be firmly resisted.

What the Troop Leader must be told by the Infantry Commander

The infantry commander in his orders to the troop leader should tell him:

- (a) How much early warning he requires. For instance "Three miles" indicates to the troop leader that he must position himself three miles from the screened force, so that the time delay in transmitting the enemy contact is cancelled out by the distance between himself and the enemy when first sighted. If the ground is familiar he may be told to watch from such and such a ridge. No attempt should be made to place the troop's vehicles because the troop is a balanced reconnaissance force and the troop leader is the best judge of his own security.
- (b) How much of the front or flank is to be covered in terms of miles or thousands of yards.
- (c) The rate of advance, bounds and report lines.
- (d) Action on contact, whether the troop is to stay concealed and report or is to attempt delaying action. In the absence of clear direction the troops will carry out the former.

Escort

Escorting troop carrying vehicles or echelons is an important task for a reconnaissance troop

in close country or in open country where the enemy may raid our lines of communication. All arms have drills for regaining the initiative if ambushed whilst travelling in vehicles, or for investigating road blocks or suspicious ambush sites. But reconnaissance troops train intensively in the techniques of protecting vulnerable convoys and also in the destruction from ambush of enemy vehicles, and may therefore be regarded as specialists in this difficult field.

There is one absolutely essential rule to the armoured escort of any convoy, whether RAASC convoy or a battle group reconnaissance party, and that is — **During movement the escort commander is in command.** This is always the cause of discord between reconnaissance troops and units which have not experienced armoured car escort. This is a matter of distrust and pride, but after training in which escort and escorted learn to combine their anti-ambush drills any resentment, soon disappears.

Convoy procedure may be summarised as follows:—

- (a) The convoy commander forms his own order of march.
- (b) He states where he wishes to go.
- (c) The escort commander places the reconnaissance troop along the convoy.
- (d) The escort commander will place himself close to the convoy commander.
- (e) He will then lay down the vehicle interval, the action of the escorted vehicles on

contact and, particularly, the necessity for soft vehicles to get off the road to make way for the armoured cars to get to the seat of the ambush.

- (f) By wireless control of his scouts, the troop leader adjusts the speed of the convoy to the varying conditions of ground and vegetation.

The whole procedure is analogous to the escort of merchant vessels by destroyers or of air transports by fighters. The troop has definite advantages over the vehicles of the convoy in that:—

- (a) It is trained specifically to locate and destroy ambushes using a combination of mounted and dismounted action.
- (b) Its vehicles are bullet proof although vulnerable to mines and light anti-tank weapons.
- (c) All vehicles mount a machine gun with full traverse, and the canister shot of the armoured car is an excellent means of retaliation in close country.

There are, however, some startling misconceptions about just what a reconnaissance troop can be expected to do. On the steep, narrow tracks of the Coloputty area where the armoured vehicles cannot overtake and where dense vegetation and overhanging rock outcrops give the ambusher ideal conditions, a reconnaissance troop should not be expected to protect more than six soft vehicles and an absolute maximum of ten. Where the ability to manoeuvre is denied the troop, protection can only be

given by ensuring that the soft vehicles are watched by at least one armoured vehicle.

Other Tasks

Apart from the more important tasks already described, there are several other jobs for which one or more of the troop's characteristics of speed, mobility, firepower and communications make it eminently suitable.

These are:—

- (a) Internal security.
- (b) Traffic control and assistance with prisoner of war control.
- (c) Protection of such vital installations as airfields and supply complexes.
- (d) Assisting other arms by supplying alternate communications.
- (e) Assessing nuclear radiation in a contaminated area. (In this case the armoured construction of the vehicles is also a factor).
- (f) Independent raids and pursuit.
- (g) Assisting our own airborne troops when they secure an objective behind enemy lines.
- (h) Localising enemy airborne troops in a similar role.

There is always a job for an armoured car.

The world we live in is too complex for our way through it to be found by people almost completely ignorant of science, and too dangerous for it to be found by people without the understanding of human nature and society that the humanities are meant to impart.

LONG RANGE PATROLLING IN NEW GUINEA

Pacific Islands Regiment

IN fulfilment of its task in the Territory of Papua-New Guinea the Pacific Islands Regiment completes an average of 5000 patrol miles or 20 different patrols in each year. Each of these patrols is a tough test of a patrol commander's ability to plan and execute an independent operation under hostile conditions of climate and terrain. They are always difficult and dangerous, but never dull.

Limitations

Patrolling in the Territory differs from the normal run of patrol tasks and special consideration must be given to the limitations of isolation and communications. Most patrols are carried out in areas about 7 days' walk from the nearest Administration centre which in some cases may be a Patrol Post with only one European Patrol Officer. There is no means of communication except wireless and runner, and in the case of an emergency the only method of movement between airstrips is by foot. Good preparation is the surest way of preventing serious difficulties in the jungle. Whilst on patrol the commander is strictly on his own

and cannot expect a quick answer to any operational or administrative request. If he fails to carry adequate stores he cannot be resupplied without real difficulty. If he fails to make an adequate route plan there is no agency to contact to obtain additional information or maps. The whole success of his operation depends on the amount of planning he has done beforehand.

Operational Planning

Operational planning takes into account many factors. Special emphasis must be placed on the following:

- (a) *Tasks*: Normally to gain information for future military use, to train in the operational role and to contact and gain the goodwill of the native people. At times there would be additional tasks of carrying out user trials on equipment, foods or medicines and general assistance to the Administration where required.
- (b) *Routes*: Except where specifically directed to cut a new track, most patrols are car-

ried out by following recognised village tracks, or in more remote areas by following the hunting pads left by bushmen. Maps used at present are unreliable and direction is maintained by use of the compass and sun and by taking advantage of local knowledge and guides. When the patrol is travelling from ten to twenty miles a day for 40 days or more, it must use small scale maps and maintain daily direction by land formations. Villages may move every year or so to new gardens, which makes map locations difficult.

(c) *Bivouac sites*: By virtue of isolation, special care must be taken in the selection of night halt sites. Consideration must be given to security in restricted areas and to the dangers of nature in regard to flash flooding, animals and insects, rock falls and polluted drinking water.

(d) *Conduct*: In many areas there will be a need for guides and interpreters. Neither pidgin or police motu is spoken by the villages and the local tongue becomes the only means of communication. If no interpreter is available the patrol commander must learn to appreciate meaning by use of signs and drawings on the ground. On all PIR patrols a native constable is attached to represent the Administration, and to assist the patrol in obtaining co-operation from the villagers. He may

also be able to offer advice in the case of contact with hostile natives when consideration must be given to the limits of force.

Logistic Support

Movement and resupply is difficult in the Territory and early consideration must be given to the logistic support plan which governs the success of the operation and which may determine the patrol's ability to survive and return fit to the outstation.

Supplies

All PIR patrols move with seven days' supplies on the man. This can be exceeded but it is unwise to do so because of the severe climate and the difficult terrain. Normally resupply is made by either carrier line or airdrop. If a carrier line is employed the commander is limited firstly by availability, secondly by capability and lastly by the difficulties of paying off and feeding carriers on route. More satisfactory is the use of an airdrop or resupply to a light aircraft strip. Whilst normal carriers can move 40 lbs, a light aircraft of the Cessna type can lift from 500 lbs. to 700 lbs depending on weather conditions and the length of the strip. So long as the patrol does not exceed 40 men, one Cessna can drop resupply for a period of one week in one run. In most areas emergency food supplies can be purchased or bartered from the natives but this will be limited to native root vegetables and sago. Meat is not plentiful. Barter goods are always carried by the patrol commander and they must be attractive and easy to

carry. Salt is popular throughout the inland but because of its weight a great deal is not normally carried. Razor blades, small beads, axe heads and knives are the normal items.

Medical

The patrol commander is surgeon and physician to himself and his patrol for the whole period of the patrol. He must be instructed in all branches of first aid and treatment of the sick. His kit comprises a great range of medicines, ointments and antibiotics in whose use he must be proficient. He carries powerful drugs for the treatment of pain, severe malaria, typhus, pneumonia and appendicitis, five dread complications of patrolling in isolated areas. However, the main problem is medical evacuation which is either by stretcher or light aircraft. A patrol is seldom more than 7 days' walk from a light air strip and provided the casualty can be nursed for this period a medical evacuation charter plane can normally be obtained fairly quickly, bearing in mind the problems of availability of aircraft and the ever changing weather conditions.

Communications

WS 510 is the standard patrol set and it has proved very efficient. Whilst on patrol on out-

station it is common to establish communications with PIR Headquarters at Port Moresby some 600 miles distant. The only other means of communication is the normal native method of sending messages by village runner. Forty miles in one day is not unusual and it is common for continuous information to filter back day by day to the patrol base.

Patrol Equipment

It is necessary for each man, including the patrol commander, to carry all that he requires to survive for an extended period in the jungle. This includes food, clothing, bed roll, blanket, groundsheet, and mosquito nets. The total weight including arms, ammunition and equipment is 60 lbs, which is very near to the maximum weight that can be effectively moved in this terrain.

Conclusion

Patrolling in the Territory is a challenge to the efficiency of the patrol commander. It is performed under difficult conditions with severe penalties for the careless or lazy. It can be successful only with good preparation and careful planning, but it opens up avenues of new places, faces and customs which provide an interest not normally found on peace time army patrols.

VULNERABILITY OF ARMY AIRCRAFT

Brigadier General F. von Kann,
United States Army

Reprinted from the November 1961 issue of Military Review,
US Army Command and General Staff College,
Fort Leavenworth, USA.

ONE of the most difficult problems facing the military involves an area where objective answers and real experience are very hard to acquire. This problem concerns the vulnerability of manned aircraft. Many persons both in and out of the Army have insinuated that Army aircraft might be able to fly peacetime missions but "wouldn't last 10 minutes" in combat.

This canard has haunted Army aviation since its beginning. In March 1942 high-level opinion in Washington expressed grave doubts concerning the "vulnerability of cub planes". The doom criers discredited the concept on paper before the first combat mission was flown. In contrast to these predictions, General Lesley J. McNair was to say on 28th December 1943:

Air observation for the field artillery has reached a high degree of perfection in combat. Success in combat has been phenomenal, far exceeding expectations. Flying in action has been superb. Only a single fatality has been reported.

The secret in World War II and in future wars lies in the tactics and techniques of em-

ployment necessary to survive. As a matter of interest, we might examine a little-known operation in Korea that has been loosely identified as "Bedcheck Charlie".

"Bedcheck Charlie" was, in reality, an ancient biplane of 1920 vintage flown by North Korean pilots. From the early summer of 1950 through the next couple of years, this relic would appear in the late evening hours to harass the United Nations Command. The plane could be easily identified by the washing machine sound of its dubious engine. Flying in the valleys at dusk, Charlie had the nasty habit of throwing mortar shells overboard and his appearances acted as a tripwire signal for the machine-gunners and anti-aircraft crews to awaken anyone who happened to be asleep.

Night after night our most sophisticated night fighters scrambled to meet this elusive foe. But radar could not plot him at his low altitude, and our interceptors could not slow down to his 80-knot top speed without falling out of the sky. Charlie and several similar type aircraft harassed the 8th United

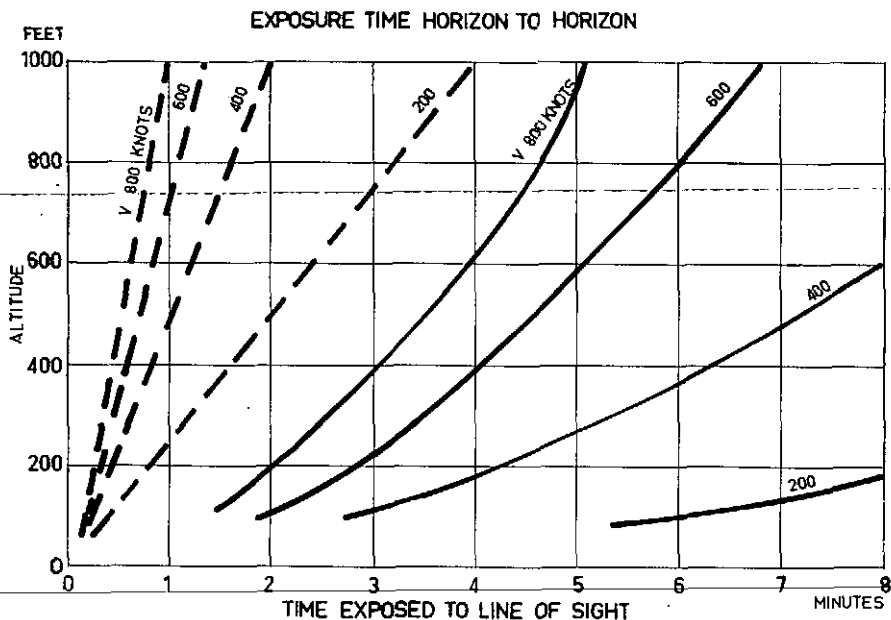


Figure 1

States Army and 5th Air Force for months with impunity. Once he was lucky enough to drop a mortar shell right down the chimney of the main Army communications centre.

Now the point of the Bedcheck Charlie incident is not that we should revert to the use of this type of aircraft, but rather that any manned aircraft, properly employed, is a difficult target under most circumstances. The advent of the surface-to-air missile, while complicating the problem, has not changed this basic fact.

Countermeasures

For every weapon system that has been developed, there usually has been a parallel development of a countermeasure to this system. As radar progressed, techniques to avoid, confuse, or destroy the radar

have been developed. Where the infrared signature is the homing signal, development has reduced infrared emission. I do not mean to imply that every important system has been neutralised, but there always has been some avenue to degrade or diminish the effectiveness of any system.

There has been a strong tendency in recent years to equate survivability with speed; but there are many other equally important facets of this complex problem. Development of new low-altitude tactics, the defensive environment, and terrain and target characteristics all exert a great influence on the overall problem.

We must consider every step that forms a function of aircraft survival:

1. The probability that the aircraft will be detected.

2. The probability that if detected, it will be within the range of a weapon and acquired by the fire control system of that weapon.
3. The probability that this weapon, if it acquires a target, can fire effective rounds.
4. The probability that these rounds will hit the aircraft.
5. The probability that these rounds having hit the aircraft will cause major damage.

Detection Methods

It is evident that much can be done to enhance the survivability of any aircraft by downgrading any one of the above steps. For example, in the case of very low-level missions, detection methods are expected to be visual, infrared, or acoustic — depending on the enemy involved. Furthermore, the detection range will be a function of altitude, size, contrast, and slant velocity.

Figure 1 shows the time an aircraft will be exposed to the line of sight as a function of two of these factors, altitude and speed. Two cases are portrayed:

1. In which the line of sight is limited by the horizon (solid line).
2. The more likely case in which line of sight is limited by 50-foot obstacles, 4,000 feet apart with the observer in the centre (dotted lines).

The flight profile charts, Figures 2 and 3, portray another aspect of the problem. Figure 2, vertical plane, shows that the ability to follow the terrain features is more difficult at higher

speeds due to the increased flight path turn radius and the greater distance travelled during the pilot's response lag. The upper curves show the flight paths for four speeds. The lower portion of the chart presents the left portion of the profile curves in terms of height above terrain versus time. With this particular sample terrain, the exposure as represented by the area under the height-time curve is increased by higher speeds.

In rough terrain where advantage can be taken of the natural folds of the earth, there is a distinct advantage in being able to fly slowly with a high degree of manoeuvrability. The Army's "nap of the earth" flying techniques are designed to take the maximum advantage of these factors.

Figure 3 explains the principle further. It indicates how speed affects the ability of an aeroplane to follow a prescribed flight path in the horizontal plane. A pilot attempting to take advantage of a specific winding river valley to avoid detection could do so most effectively by flying slowly. The shaded area on either side of the river valley represents the 200-foot contour line.

It is hard to believe that even the most highly prepared enemy will be able to place the more complex air defence systems either close enough or dense enough to the forward edge of the battle area (FEBA) to ensure 100 per cent. detection followed by 100 per cent. destruction. Cost alone tends to defeat such an aim. In other words, the defence

FLIGHT PROFILE (VERTICAL PLANE)

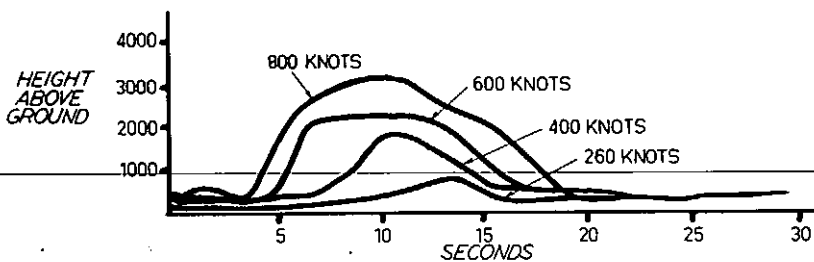
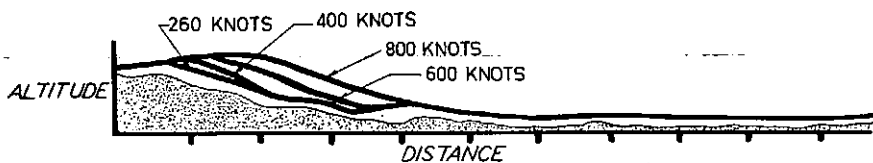


Figure 2

of the enemy forward units will consist of machine guns, small-calibre air defence weapons, and possibly weapons of the *Redeye* classification. Employment of the *Redeye*, and the control requirements of such a system,

could well be the subject of an entire thesis, but I do not believe any army will be able to issue *Redeye-type* weapons to every squad and expect the squad or platoon leader to identify the target and decide when to fire

FLIGHT PROFILE (HORIZONTAL PLANE)

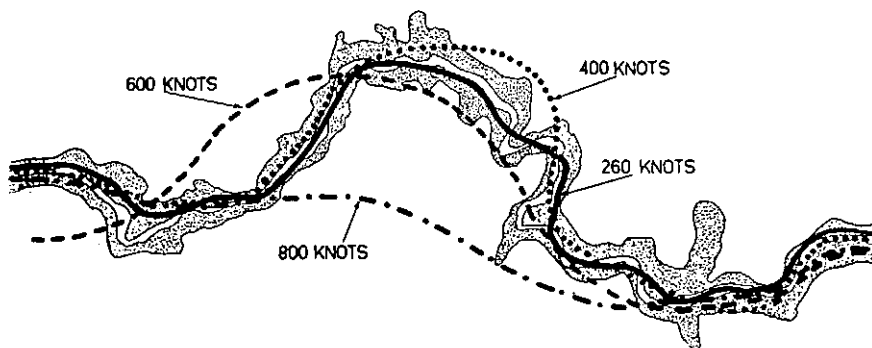


Figure 3

the weapon, independently of a central control system.

Directly related to the vulnerability of our aircraft is the air defence system we hope to have in our own zone. This, of course, includes ground-to-air organic means within the Army and whatever air superiority means will be available from the Tactical Air Command. For example, it is illogical to examine the vulnerability of a Mohawk aircraft fighting a MiG-21 in isolation from all the other elements of the battle. This type of comparison is fairly common. Projecting this a bit further, these same analysts reason that without "top cover" the Mohawk and similar type aircraft are sitting ducks. Many valid concepts, organisations, and procedures have been dismissed lightly because of such unsubstantiated conclusions.

Air Cavalry Organisation

The "air cavalry" concept of the Army has come into being in the face of such reasoning and has attained recognition only because a small dedicated group has fought desperately over many years to show that there is more to vulnerability and survivability than the dogfight principle of World War I. I think it is fair to say that no single group was more suspicious of the air cavalry concept than Army aviators. But being one's own severest critic has distinct advantages. The tactics, techniques, and armament systems of Army aviation evolved slowly and only after detailed consider-

ation of the many hazards that will confront such an organisation.

Much more has to be done, but it is significant that air cavalry is now being formed into units with tables of organisation and equipment and is receiving general acceptance. A few years ago you could count the people who believed in this concept in the tens — today, they number in the thousands. Industry too reflects a growing belief in the future of this and similar organisations, for many hard commercial dollars have been put into company-sponsored research to meet a demand the fulfilling of which shows great promise.

Imponderables of Army Aircraft

It is hard to explain or to appreciate the type of flying contemplated by the air cavalry units until you have actually experienced it. It's hard to believe how elusive a helicopter can be until you have tried to track it close to "the nap of the earth". It's hard to appreciate the short exposure time afforded by a skillfully landed air mobile unit until you have been placed on the defensive by such an operation. It is almost impossible to appreciate the range estimation problem a machine-gunner faces when trying to fire against a helicopter or similar vehicle with no background of strike to assist him.

Until you have tried to detect the sound of our new turbine helicopters, you cannot appreciate how quietly they move. These indefinable experiences and others I have suggested

cannot be portrayed meaningfully on graphs and charts, yet they are the heart and soul of why we are convinced that the vulnerability of Army aircraft depends not so much on armour-plating or self-sealing fuel tanks or Mach 2.0 speeds, but rather on the same principles that have allowed the vulnerable infantryman to survive and to fight victoriously against every new weapons system that he has met.

We will have our aircraft losses, just as we will have other losses. War never has been a particularly safe business. However, I do not think these losses will be excessive or unacceptable.

I do not pretend that every Army aircraft can be used indiscriminately against every possible enemy, every place in the world. But without Army aircraft and without the air mobility potential offered by air vehicles, our ground commanders would be placed in an intolerable situation — blind to the enemy, unable to respond rapidly, and, probably, trying to maintain tenuous ground lines of communication against a numerically superior enemy.

If we conclude that we must have air vehicles, then we can concentrate our research efforts on every possibility that will enhance the survivability of these vehicles. If you will review the steps I have mentioned that an enemy defensive system must go

through to kill one of our aircraft, you can see we have a range of possibilities to explore that extends from jamming an enemy radar system to a friendly artillery barrage that would keep the enemy soldier in his hole. The scope of any survivability study must include the aircraft itself, its fuel, its engine, and its reliability. It must include, above all, the training and skill of those who will use these vehicles — including our commanders and troops as well as the aviators.

One fatal mistake would be to assume that the next war cannot possibly resemble Korea, or that some of the complex equipment used at a development proving ground will be able to operate in the field with the same effectiveness it displays in a strictly controlled environment.

The one sure thing about the next war is that it will have the characteristics of confusion and chaos that go with every war. The commander who can maintain control of his forces and react with boldness and imagination to the confusion wrought by the enemy will, in all probability, win in battle. Conversely, the commander who expects to establish a sophisticated electronic "Maginot Line" probably will find weaknesses in his system as serious as those in the masonry defenses of World War II.

Strategic Review

THE COMMON MARKET NEGOTIATIONS

IN most reports of the negotiations about Great Britain's proposed entry into the European Economic Community the emphasis is usually on the economic aspects. At the moment we are left with the impression that the negotiations have stalled on France's unyielding attitude in the interests of French agriculture. While this may be superficially true, it fails to present a complete and balanced view of French ideas about the Europe of the future.

When the North Atlantic Treaty Organisation was formed 13 years ago Western Europe had not recovered from the devastation of World War II. She was so economically and militarily weak that she could not, unaided, find the strength to resist any strong Russian westward thrust. The dangers inherent in this situation were felt acutely, not only in Europe but in America as well. The Americans saw clearly that the forward defences of their own continent lay in Western Europe. The economic and military aid they poured into Europe were intended to build up those forward defences at least as much for their own security as to

assist the Europeans for their own sake.

Since America paid the piper she was entitled to call the tune, an entitlement rendered all the more powerful because of her monopoly in nuclear weapons. In the circumstances it seemed natural enough that the command and control of all the armed forces of the NATO alliance should rest in American hands. What was not so clearly and widely understood was that this arrangement also gave the political initiative to America.

So long as America held a decisive superiority in nuclear weapons European governments had little reason to question the necessity, or even the desirability, of the arrangement. However, Russia's acquisition of nuclear parity radically changed the situation. Western Europe was then caught between the two great nuclear giants without the means of exerting any real influence on events.

General De Gaulle holds that Europe must somehow escape from this position of helplessness. In the Common Market concept he sees much more than the recovery of economic strength. Beyond that he

visualises a politically and militarily integrated Europe strong enough to take care of her own destiny, a Europe no longer a helpless pawn in the struggle between the two giants.

De Gaulle believes that Europe cannot achieve independent status without a nuclear deterrent of her own, that the possession of such a force will alone confer upon her freedom of diplomatic manoeuvre. He aims not at the disintegration of the NATO alliance, but at its replacement by a partnership between two equals, the United States of America and the Confederacy of Europe. In this Confederacy he sees France and West Germany playing the leading roles, a view which derives from a logical appreciation of economic and military realities. Hence his unremitting efforts to strengthen the bonds between Paris and Bonn, and to make as sure as he can that the policy of close collaboration continues when Chancellor Adenauer dies or retires.

The six members of the Common Market have achieved sufficient economic success to warrant the belief that satisfactory measures of political integration can be negotiated between them. France does not want to exclude Great Britain from the confederacy. On the contrary, she is well aware of the economic and military strength, particularly nuclear strength, that Britain could bring to the common weal. But France does not want a Britain that is half in and half out. She does not want a Britain that is tied with

some sort of a "special" arrangement with the United States, and which refuses to merge her nuclear armaments with those of France in order to form a European nuclear deterrent force. Nor does she want a Britain trailing a string of Commonwealth trade preferences and other ties to non-European countries. The French Government is convinced that the cause of European unity and strength would be weakened rather than furthered by a Britain tied economically, and therefore to some extent politically, to other countries.

The success of the Common Market gives France a very strong position from which to negotiate. From this position of strength she is able to insist that Britain goes in wholeheartedly and untrammelled, or stays out altogether while the European community is developed without her. One of her leading commentators recently wrote — "It is inconceivable, unless she resigns herself to an endless cold war, that Europe should depend for ever upon the United States for her security and her diplomatic orientation".

France and, apparently, West Germany are determined that European dependence upon America shall be brought to an end. While some of the other members of the Common Market might be willing to admit Great Britain without insisting on the severance of her overseas ties, the recent negotiations have shown that when it comes to the vote they will support France.

— E.G.K.

THE SINO-INDIAN BORDER DISPUTE

Major R. W. Whitney
2 East Anglia Regiment,
(Attached Australian Army HQ)

Part 1

OF all the boundaries in the world which separate two great powers, the Sino-Indian border has been one of the most peaceful. It is usually claimed that for 2,000 years no hostilities of any significant scale have been connected with it. Remote and almost inaccessible from Peking and Delhi, it has for most of its 2,400 miles gone unguarded and is only vaguely demarcated.

Suddenly, in 1959 this peace was shattered by the revelation of Communist Chinese incursions across the Indian border and by the publication of Chinese claims to what Mr. Nehru described at the time as "nearly 40,000 square miles of what has been for many decades, and in some places for centuries, an integral part of Indian territory".

This dispute, which appeared to be precipitated by the Tibetan uprising of February-March 1959 and the events associated with it, was all the more sur-

prising because the protagonists were two powers who, throughout the greater part of the 1950's, had seemed to be content to live in peace with each other on the basis of "panch shila" and the "Bandung spirit". In fact, this quarrel had been developing for many years and, for a true understanding of the issues involved it is necessary to trace the course of Sino-Indian relations since 1949.

Development of Sino-Indian Relations

As soon as the Communists seized power in China, India became one of their main objects of attack, despite the fact that many Indians displayed a large measure of benevolence and sympathy towards them. The Indian Government's policy of neutrality and non-alignment was unacceptable to the Chinese. In the words of Mao (on 1st July 1949): "... Without exception, one either leans to the side of imperialism or to the side of

socialism. Neutrality is mere camouflage and a third road does not exist". The Chinese press referred to the "reactionary Nehru government" and described the Indian Prime Minister "as the 'new slave of American imperialism'".

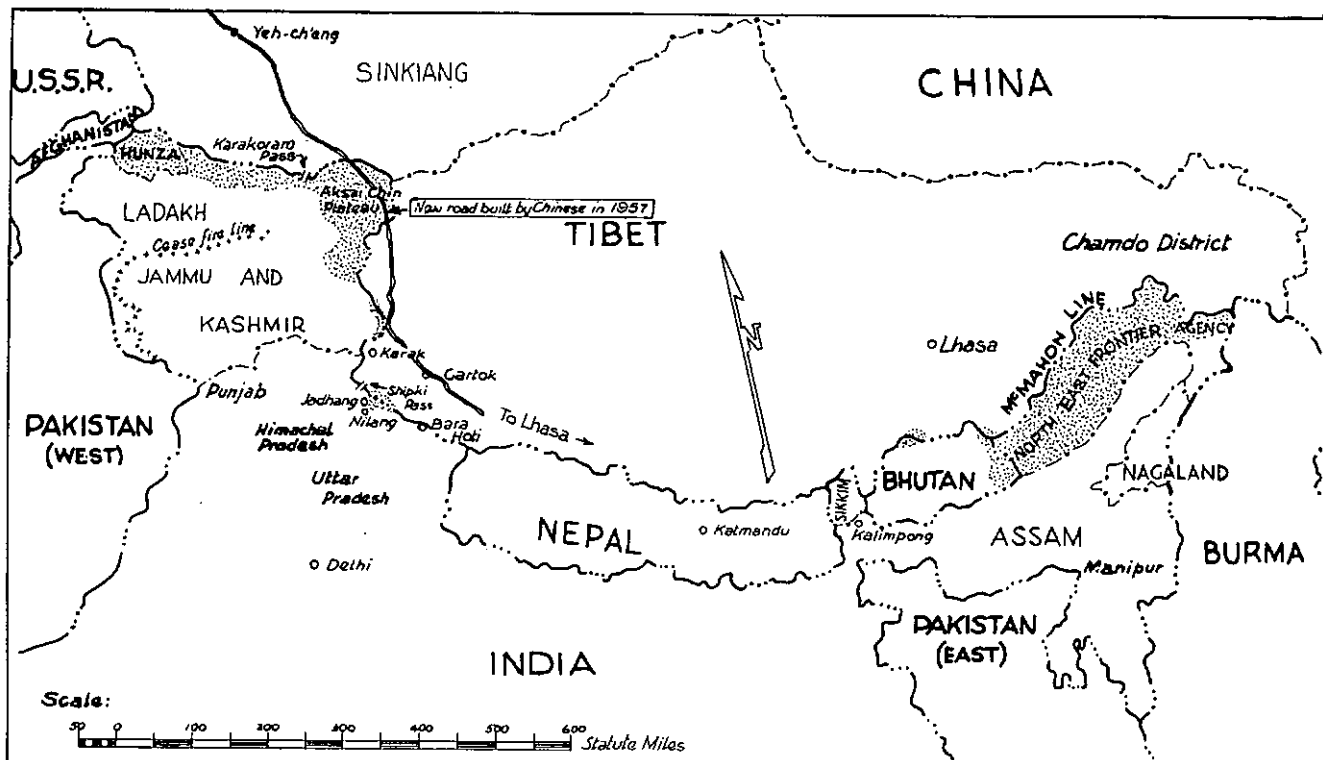
The Communist "liberation" of Tibet in 1950 further exacerbated Sino-Indian relations. India traditionally had a special position in Tibet and there are strong ties of sentiment between the two countries, based partly on the fact that India was the birth-place of the Buddha and also on Indian interest in their "Himalayan brothers". The typical Indian view of the status of Tibet vis-a-vis China has been well summed up by Nehru: "Historically speaking, our attitude — and the attitude of all previous governments of India — has been recognition of some kind of Chinese suzerainty over Tibet and of Tibetan autonomy. The measure of autonomy has varied in the last few hundred years according to the strength or weakness of China and the strength or weakness of Tibet. But that is the position. Every government of China has claimed that suzerainty; many governments of Tibet have repudiated it".

Indian public opinion was deeply shocked when, on 7th October 1950, Chinese troops marched into Tibet "in order to free three million Tibetans from western imperialist oppression and to consolidate national defences on China's western borders". An Indian Note expressing surprise and regret was

brusquely rejected by the Chinese with the warning that "no foreign interference will be tolerated" because "Tibet is an integral part of Chinese territory".

Chinese propaganda continued to vilify India and there was a strong demand within India that some action should be taken to save the people of Tibet from Chinese domination. However, when the issue was raised in the United Nations (by El Salvador), Britain, in consultation with India, moved that the matter be postponed. The Indians expressed the hope that the question could be settled peacefully, and both Commonwealth countries were concerned not to worsen the international situation at a time when the Korean issue threatened to precipitate a general war.

The Tibetan question was allowed to die down and Nehru steadily pursued his policy of neutralism and non-alignment. By 1953 Peking had begun to abandon its tough, "anti-neutralism" policy, and this change of attitude ushered in a new era in Sino-Indian relations, culminating in the treaty signed between the two countries in April 1954 on trade and travel between India and "the Tibet region of China". It embodied the five principles of peaceful co-existence ("panch shila" — mutual respect for each other's territorial integrity and sovereignty, mutual non-aggression, mutual non-interference in each other's internal affairs, equality and mutual benefit, peaceful coexistence.)



SINO-INDIAN BORDER - DISPUTED AREAS

NOTE: The boundary between India and China is that shown by the Indian Ministry of External Affairs (Political Map of India - 1959) and differs slightly from the border normally drawn on international maps. Shading shows Chinese Communist claims.

After the conclusion of this agreement, Sino-Indian relations continued to develop harmoniously as the Chinese Communists assiduously built up an international image of a "peaceable giant" and Nehru adopted a brand of neutralism in which mistrust of the West appeared to be the major ingredient. Relations reached their most cordial point at the time of the Bandung Conference in May 1955. At this Conference, the Chinese Premier Chou En-lai again reaffirmed China's respect for the sovereignty and territorial integrity of all countries and its determination to abstain from aggression. In November 1956 Chou received an enthusiastic welcome in New Delhi, where he declared that the solidarity between India and China would become "a gigantic moral and material force in stabilising the situation in Asia and Africa". These sentiments were echoed by Nehru.

However, despite the professions of goodwill and friendship, tensions were already growing beneath the surface. The Chinese Communist Government continued to issue KMT maps which showed about a quarter of Bhutan and more than half of the North-East Frontier Agency as Chinese. A number of minor border incidents involving Chinese incursions were reported from 1955 on and a still more serious development occurred in 1958. A map published in a Chinese newspaper showed a new road linking Sinkiang and Tibet. The map was very small scale but it appeared to cross Indian-claimed territory in Ladakh — the Aksai Chin plateau. Two

Indian Army reconnaissance parties were therefore sent to the area, one of which was captured and held for a month by the Chinese. The existence of the road was confirmed. It had been built in 1957 and it appeared that these Chinese had occupied the area since 1956. A series of Notes was exchanged between the Chinese and Indian Governments in October and November 1958, in which China maintained that the road ran entirely through Chinese territory.

The significant point about the Indian discovery of the Chinese activities in Ladakh is that nothing was made public until August 1959, after the Tibetan uprising. This was due to Nehru's determination to avoid an open dispute with China and also in part to his lack of concern about Chinese incursions into an area he considered unimportant and which he later described as "a barren and uninhabited region, 17,000 feet high and without a vestige of grass".

Despite this pliable attitude on the part of Nehru, it appeared in the latter half of 1958 that the Chinese were becoming steadily more hostile. On 7th September the Indian Communist Party organ, the "New Age", said that India's foreign policy was undergoing a change in favour of the West. The December 1958 issue of the "World Marxist Review" also contained an attack on Nehru and the Indian Government by the Soviet Ambassador to Peking. It was charged that "in India the bourgeoisie and the landlords use the State machine as an instrument of violence against the people, the workers

and the peasants. . . ." The writer claimed that India was increasingly falling under the influence of the "imperialists".

These mounting tensions in Sino-Indian relations came to the surface in 1959 with the suppression of the Tibetan rebellion and the flight of the Dalai Lama to India. The Chinese alleged that the rebellion had been planned and supported from India and that the town of Kalimpong was the "commanding centre" of the rebel movement. These charges served to heighten the intense indignation of the mass of the Indian people caused by Chinese activities in Tibet.

From this time on the dispute began to develop rapidly and it is unnecessary in this paper to discuss these developments in any detail. Nehru attempted to counsel "a certain measure of restraint" to domestic critics who demanded some sort of action against the Chinese but was finally stung to reply by repeated Chinese denunciations of "Indian expansionism" and Indian "interference" in Chinese internal affairs in Tibet. He charged that China was using "the language of the cold war regardless of truth or propriety". He stated that Indian policy was governed by three factors:— (1) the preservation of the security and integrity of India, (2) "our desire to maintain friendly relations with China", (3) "our deep sympathy for the people of Tibet".

Events throughout the summer of 1959 caused Nehru to take a firm stand against the Chinese

activities. The culmination came with the Longju incident on 31st August (a serious Chinese incursion across the McMahon Line) which Nehru condemned as "a clear case of aggression". This action finally provoked him into making public the Chinese activities in Ladakh dating from 1956, which have been discussed above.

On 7th September 1959 the Indian Government published a White Paper giving details of Sino-Indian exchanges from 1954 to 1959. This document disclosed, inter alia, that although Chou En-lai had accepted the McMahon Line as the north-eastern border between India and China in 1957, in a letter to Nehru dated 23rd January 1959 (i.e. before the Lhasa uprising) he had repudiated this. Chou repeated his stand on 8th September 1959 when he said that China "absolutely does not recognise the so-called McMahon line" and also went on to say that his government could not accept India's "unilateral claim" to sovereignty in the disputed area of Ladakh. The Notes published in the White Paper included references to numerous incidents, charges and counter-charges. They included Chinese allegations of "brazen intrusions" by Indian troops into Tibetan territory, coupled with allegations of "inscrupulous collusion" between Indian forces and "traitorous Tibetan rebels". There were also references to border tension between the two countries in the Bara Hoti area of Uttar Pradesh. It was also disclosed that as far back as 1956 India had warned

China that violations of Indian territory in the Shipki Pass region might lead to a "clash of arms".

The rival claims to the areas under dispute which were set out in these notes involve some very complex historical and legal issues. It does not fall within the scope of this paper to attempt to make any assessment of their relative validity although it may be conceded that there is merit in some of the Chinese claims. The following short historical summary may, however, be of some value.

The North - East Frontier Agency. In 1910 the Chinese attempted to extend their control into Assam through Tibet but failed and were driven out of Tibet altogether in 1912. In 1914 Tibet signed the Simla Convention and accepted the McMahon Line as the Indo-Tibetan frontier. Although a Chinese representative attended the Simla conference, the agreement was not subsequently ratified by the Chinese Government. The McMahon Line for the most part runs along the Himalayan watershed. The boundary line as shown on Chinese maps includes as Chinese an area variously estimated at between 26,000 and 32,000 square miles and generally runs along the southern edge of the Himalayan foothills. The Chinese point out, correctly, that many maps, including one published in Nehru's own book "The Discovery of India", also show this as the boundary. The NEFA was formed by India out of the State of Assam in 1954 to assist

in extending government administration up to the McMahon Line.

Bhutan. Bhutan was overrun by Tibetans in the 16th century and by race, religion and form of government the country is Tibetan. It has been listed by China as a tributary state since the 18th century. China has never really abandoned her claim although numerous rulers of Bhutan have in the past resisted Chinese control. Chinese maps now show about 300 square miles of Bhutan as Chinese territory, including eight small enclaves near Mount Kailas in Tibet which have been administered by the Bhutanese for centuries. By a 1949 treaty, India is responsible for the foreign relations of Bhutan.

Punjab, Himachal Pradesh and Uttar Pradesh. The frontier in this area follows generally the watershed between India and Tibet and is, in the main, agreed. However, there is dispute over certain small areas which are of significance not only because they are the location of a number of important passes but also because they contain several Hindu shrines, often visited by pilgrims. The four main areas of dispute are: Karak in the Spiti Valley, Shipki La, Niland-Jadhang, and Bara Hoti. These areas are populated by tribes of Tibetan stock who have traditionally paid their taxes to whichever authority was in a position to collect them. As early as 1899 India proposed a definition of the

1 See, in particular, L. C. Green, "Legal Aspects of the Sino-Indian Border Dispute", *The China Quarterly*, No. 3 (July-September 1960).

boundary to China but the matter was not pursued. In the 1954 Sino-Indian Trade Agreement, references implied that these passes were on the frontier. The Chinese, however, have subsequently claimed that the boundary should lie further south.

Ladakh. Ladakh was conquered by Jammu and Kashmir in the early 19th century. In 1842 the border with Tibet was fixed by treaty between the Raja of Jammu and Lhasa as "the boundaries of Ladakh and its surroundings as fixed from ancient times". No map was ever published, however, even after the Chinese accepted this frontier in 1847. Differences in the interpretation of this "traditional" boundary account for 10,000 square miles which are now in dispute.

For some time after the Sino-Indian dispute came out into the open the Chinese Premier Chou En-lai still appeared to make some attempt to leave the door open for rapprochement. On 18th April 1959 he welcomed the statements on non-intervention made by Mr. Nehru, "leader of our great and friendly neighbour India". He went on to say — "There is a 2,000 year friendship between China and India, the initiators of the five principles of peaceful coexistence. There is no reason whatever why this friendship should be shaken on account of a handful of Tibetan rebels". As late as November of that year Chou, in a letter to Nehru, again referred to the spirit of the "panch shila" and proposed that both countries withdraw their troops 20 kilo-

metres from either side of their entire 2,400 mile border. Nehru rejected this proposal but made an alternative suggestion about the troop withdrawal.

However, despite Chou's protestations of peaceful intentions, the Chinese stand rapidly hardened and from the latter part of April 1959, a bitter anti-Indian campaign was developed in the Chinese press and radio, much of it based on certain documents which were alleged to prove Indian complicity in the Tibetan rebellion.

Chou visited Delhi in April 1960 but his talks with Nehru ended in deadlock. It was therefore agreed that officials of the two Governments should meet to examine the evidence put forward by each side in support of its case.

The Indian and Chinese officials held three rounds of talks on the border question, the final meeting ending on 12th December 1960. A report on the talks placed before the Indian Parliament on 14th February 1961 said that it was established beyond doubt that China had claimed 50,000 square miles of Indian territory and was in unlawful occupation of about 12,000 square miles. She had declined to recognise the accession of Kashmir to India and had gone back on Chou En-lai's acceptance of India's special relationship with Bhutan and Sikkim.

Sino-Indian relations have continued to deteriorate throughout 1961 and 1962. New charges against India frequently appear in the Chinese press and there is a rising demand by pub-

lic opinion in India for retaliation against Chinese provocations. In March 1961 the Indian expulsion of 70 Chinese nationals for "undesirable activities" set off another wave of anti - Indian propaganda in China, which increased in venom after the grant of huge loans to India from the World Bank and directly from Western countries in the summer of 1961. The peak was probably reached after India's participation in the "neutral summit" in Belgrade in September and Nehru's visit to Washington. When India, in December, renewed charges of Chinese aggression the Chinese retorted that it was no accident that Nehru's new "anti-Chinese

campaign" should follow so closely on his November visit to Washington. It was alleged that the United States had agreed to furnish India with arms to fight China. China warned that her "reasonable" attitudes over the border should not be taken by India as a sign of weakness and that she would not be "cowed" by the "extremely dangerous" Indian course.

In recent weeks the Indians have not renewed the Sino-Indian Treaty of 1954 (on trade and travel in Tibet) which has just expired and there has been an outburst of ill feeling caused by the petty harassment of the Indian Embassy in Peking.

(To be continued)

COMPETITION FOR AUTHORS

The Board of Review has awarded first place and the prize of £5 for the best original article published in the August issue to "It's New" by Major H. L. Bell, Royal Australian Infantry.

AIR SUPPLY

IN THE

AMF

Major D. White

Royal Australian Army Service Corps

AIR supply is a convenient method of solving difficult movement problems, but it is costly to arrange and exhausting to sustain. Too often the convenient method sweeps the "dirt under the carpet"; maintenance of forces in the field is still a task requiring balanced effort by land, water and air.

Maitland, NSW, was kept alive by air supply during the floods of 1955. On that occasion the tempo of air supply operations approached wartime proportions. It is proposed to give a brief account of these operations, draw practical lessons from them, and then discuss some aspects of the thorny problem of supplying a pentropic division by air.

When the rain came in February 1955, 12,000 inhabitants of Maitland were marooned by the flooded Hunter River. Land communications were cut and food was short. Air supply was the only solution to the problem of feeding the destitute, frightened, hungry people.

At 1530 hours, 25th February, RAAF base Williamtown was

asked by the civil police at Newcastle to feed the city by air until land and amphibious transport could get through.

The activity the request caused was surprising. Within the hour, an operations room was set up, aircraft were ordered, and the School of Land Air Warfare became an air supply organisation.

The ensuing three days and nights became a period of sleepless, gruelling, prodigious effort. The Air Portability Wing of the School of Land Air Warfare with the Airborne Platoon RAR under command, became the hub of activity; the place where food was ordered, packed, fitted with parachutes and loaded on to aircraft.

The details of the story can best be told in diary form:—

1630 hours 25th February

Ration entitlements worked out by RAASC Air Portability Wing Officer at PDS Wholesale Grocers Store, Newcastle.

Using MBI 44/48 (Army Ration Scale) as a basis, a balanced ration for 12,000 men, women and children was ordered. Interpolations were made for children and infants.

2030 hours

Twenty truck loads of food loaded and sent a journey of 15 miles, across a water gap (at Stockton) to Williamstown. DUKW used for water crossing.

2330 hours

Police and RAAF staff decide on DZ's and flying programme. Vehicles arrived from Newcastle and packing started. Stocks look enormous.

0430 hours 26th February

Nine aircraft loads packed. Airborne platoon exhausted. Loads assembled for speedy loading for 0600 hours fly off.

0600 hours

Take off by three Dakotas did not eventuate because weather delayed arrival from Richmond. The unexpected respite gave Airborne Platoon RAR two hours sleep — too little for safety after working all night. APW staff too busy for sleep.

30 Airmen (including grounded fighter pilots) enlisted as packers. Technique of packing taught in short school of one hour's duration.

Department of Works asked to manufacture wooden and arc mesh dropping containers as training stocks dangerously low; 12 Department of Works carpenters and workmen kept busy on an eight hour shift.

1600 hours

Twelve Dakota and five Lincoln bomber sorties flown. Lincoln bombers fitted with "storpedos".

DZ's were about 30 minutes flying time away from the airfield. One was a bridge over a railway line on which 112 people were trapped. By cutting static lines short and low flying approach, three packs landed on the bridge.

Labour force packing now 90 men (three eight hour shifts organised). Airborne platoon ordered to bed early for flying duties on 27th February.

Night flying forbidden due to low cloud and aircraft repairs.

Night 26th February

Twenty truckloads of rations arrive by 2000 hours. All night packing programme under way. APW staff still on their feet from 25th February (were ordered to bed by Base Command on 26th February but had to return to sort out a confused situation). Difficulty being experienced in keeping manifesting and accountability up to date with changing situations.

0615 hours 27th February

Fifteen Dakota and four Lincoln sorties flown. Wireless equipment, tentage, blankets, clothing, food and POL dropped. Surf life saving club asked APW to drop surf life boat from Lincoln bomber (request not approved for air safety reasons). Tent poles dropped in an enlarged storpedo "blockbuster" from a Lincoln.

1800 hours 27th February — 0600 hours 28th February

Twenty truckloads of food packed. APW staff still on feet. All packers tired.

28th February

Strenuous flying in morning but stopped in the afternoon due to aircraft unserviceability. Fortunately, contact with Maitland was made by road during the afternoon.

At this point let us review the work at Maitland. It was fortunate the Air Portability Wing was present at Williamtown. Without this trained organisation the job could not have been done so quickly or effectively. Adequate stocks of packing materials were available (475 parachutes were used in two days). On the flying side, the dropping zones were conveniently close to the airfield, although weather and aircraft maintenance precluded night flying. Finally, the manpower required to feed a city of 12,000 persons was rather startling; 90 packers, 24 flying despatchers and 12 "container" builders being fully

employed, day and night. All this effort was required in peace time on a first class airfield — what is the position likely to be in war?

Air Supply in the Field

Before examining the "bill" to be paid to re-supply the pen-tropic division by air, the conditions under which the division is to operate must be determined. Broadly the two sides of the penny are: On one side the operation of a drastically scaled-down jungle force; and on the other, the division developing its full power on hard, open country in summer on the Asian mainland.

In the jungles and mountains of South East Asia, armour, artillery, mortars and vehicles will be stripped from units to make them mobile. As a result, the maintenance tonnage will probably be reduced to about 25 pounds per man per day, as it

(Aircraft used — Dakotas)

Commodity	Bde (TS)	Pen BG ¹	Pen Div
Rations	7	2	28
POL	2	3	16
Ammunition	15	18	168
Engr Stores	}	}	}
Sig Stores			
Ord Stores			
Distillate			
Power Kero			
Med Stores	4	2	13
RAASC Expense Sups			
	—	—	—
	28	25	225
	—	—	—

1. The BG consists of an Inf Bn (1,300), Fd Bty (Pack 146, Fd Sqn 121, RAASC 190, Med Coy 59, RAEME 70, Pro 17.

(Total 1800-2000 Tps); limited tpt.

Table A

was in New Guinea during the last war. Under these conditions, the number of aircraft employed on air supply is fairly constant. Furthermore, the type of flying required calls for a medium-sized transport aircraft with good manoeuvrability capable of dropping small packs accurately on restricted dropping zones. Large "bulk" drops in this type of terrain could be dangerous and wasteful.

In the hard, open savannah and rice country the division will require the "full orchestra", i.e., armour, artillery, mortars and vehicles. Maintenance tonnages will be high. The enemy could introduce air power and sabotage against our base airfields to paralyse our air supply arrangements. Under these circumstances, reliable maintenance by land and sea will be essential for the success of military operators.

Table A shows a comparison between the airlift required for a World War II tropical scale Brigade Group supported only by a field battery of artillery; a pentropic battle group and the pentropic division operating with all its weapons.

Table B shows a comparison, based on World War II AMF figures, of the manpower required to sustain the re-supply effort in Table A.

No doubt some people will be alarmed at the bill presented. In many circumstances, particularly in the ugly, opening, defensive phase of a future war, the bill will be greater.

There will be other people who will quote Field Marshal Slim's figure of 120 tons a day for an infantry division in Burma. We must, however, remember that Slim had control of the air, available transport aircraft, and a retreating enemy. Furthermore, in India the base airfields were well staffed by civil labour and served by an active jute industry producing prodigious numbers of containers and parachutes.

From the foregoing, complete air maintenance of a pentropic division operating with all its powerful weapons is a dangerous pipe dream. Military history records numerous instances of the abject failure of military operations solely dependent on air supply. The last Chindit

(Aircraft used — Dakotas)

	Bde (TS)	Pen BG	Pen Div
Sorties	28	25	225
Short tons/day	70	63	562
Air Maint. men required	228	228	1728
	(two air maint. pls.)	(two air maint. pls.)	(twelve air maint. pls.)

(World War II Air Maintenance Pl planning figures used; the basis of working has not materially changed).

Table B

operation was a failure, and Dien Bien Phu conformed to the general pattern. In any future operations, the AMF must take great care that its expeditionary forces are well supported by road transport complimentary to real air supply resources available. To place an expeditionary force hundreds of miles from its base, without a sound land L of C behind it, is military suicide.

For island operations, air maintenance is a reasonable proposition. However, these operations are costly in equipment and

administrative manpower, the skimping of which will court a Dien Bien Phu.

Logistically, the AMF is at the crossroads. Decisions are being and will have to be made in order that our fighting troops are placed and supported in battle with reasonable safety and chance of success. We must never forget the words of Von Bismark: "Fools learn from their own mistakes; I prefer to learn from the mistakes of others".

The paramount concern of the Army is the ground combat soldier. He is the focal point of all our efforts. Organising, equipping, training, sustaining, and supporting him so that he can perform his indispensable role in combat IS the Army role.

This role is equally significant in any kind of war — hot or cold. It is just as important in general war as it is in limited war. For our Nation to entertain any notion to the contrary would be dangerous.

The danger could be social as well as military.

More than any other category of personnel in the Armed populace. He is the private citizen under arms — the clenched fist of his people.

General Bruce C. Clark, US Army

OPERATION MOVEMENT BY INLAND WATERS

JUNGLE TRAINING CENTRE

THE countries of South East Asia are, in general, traversed by few good military roads or railways and cross country movement is tedious; however, many navigable streams and canal systems exist.

Training for war in undeveloped countries should include a study of watermanship techniques for both tactical and administrative requirements. The ability to navigate waterways by day and night for the movement of personnel and stores could confer many advantages with the minimum engineer support.

Daylight navigation poses little variation to the conventional cross country techniques. However, the method for night navigation does require prior instruction and practice. It is proposed to consider here only the navigation of inland waterways by night.

Types of Operation

After a short period of training the following operations could be undertaken by infantry:

- (a) Infiltration.
- (b) Medium reconnaissance.
- (c) Rapid movement of personnel and stores into or within operational areas where

roads, etc., are not available or are subject to guerilla operations.

Training

Prior to undertaking movement by inland waterway at night, training should include:

- (a) Quiet handling of boats, in particular launching, beaching and paddling (use of muffled paddles).
- (b) Maintaining a true course without verbal instructions.
- (c) Night navigation.

Equipment

The type of operation will prescribe the size and type of craft to be used. However, it must be large enough to allow for a coxswain, navigator and an observer in addition to the crew necessary to paddle. To facilitate navigation a steady course must be maintained. The boat selected should be able to fulfil this requirement. For quiet operation an inflatable craft is ideal. However, the type currently available, i.e. *Zodiac*, is not large enough to carry the additional crew. Practice has shown that the assault boat is generally suitable although care needs to be taken in handling to avoid noise.

Navigation

When planning a night movement by waterway it is necessary to carefully assemble essential data.

- (a) Detailed study of maps, air photos and collation of local information together with the enemy situation and the operational requirement will decide:
 - (i) The launching site.
 - (ii) The landing site.
- (b) Navigational check points should then be selected from an assessment of prominent landmarks such as:
 - (i) Prominent hill features on or near the banks.
 - (ii) Stream or canal junctions.
 - (iii) Habitations.
 - (iv) Plantations.
 - (v) Pronounced changes in the direction of the river which cannot be confused with normal meander.
 - (vi) Bridges, jetties, power lines, etc.
- (c) A navigation data sheet should be prepared and the navigator's map clearly marked.

Rate of Progress

To assist navigation it is necessary to assess the approximate rate of progress of the craft along the waterway in question. The following method may be

used to calculate the strength of current or tidal flow, also to measure the speed of a craft through the water.

- (a) Measure off a distance of 50 metres along a bank.
- (b) Record the time taken for a piece of wood to drift with the current along the measured distance.
- (c) Using the Table "A" as a guide estimate the speed of the current.

When measuring the speed of a boat through the water it should be fully laden with paddlers using muffled paddles as though at night.

If operating near the mouth of a stream subject to tidal influence it is essential that the effects be considered in calculating the approximate rate of progress. Times of high and low water must be obtained from tide tables if available or by observation. The strength of flow of flood or ebb tides can be calculated using the method shown above.

Strong surface winds can have a pronounced effect on the speed of light craft. If there are strong prevailing winds along the general course of the river due allowance must be made when calculating the speed.

Night Navigation Techniques

For a short well defined move with a readily discernible land-

Time Taken	Speed m.p.h.
2 min.	1
1 min.	2
30 sec.	4
15 sec.	8

Table "A"

ing site, the committing of route data to memory would suffice. However, additional navigational aids will be necessary where distance or the complexity of a course is apparent.

The following outlines a satisfactory method for a river move of some distance or where the landing site is poorly defined. The navigator is positioned on the deck in the well of the craft under a blanket, tarpaulin or other light-proof cover. He is equipped with a torch, compass, map and pencil. The observer is positioned at the bow so that he can pick out the selected landmark on or near the bank. He can also assist the coxswain to avoid any obstacles in the water.

The navigator, having located the start point on his map, which is oriented on the deck, the compass is placed in a fixed position so that he can readily check the heading of the craft at any time.

The observer indicates turns and bends to the navigator as well as the landmarks as they appear. The navigator, knowing the predetermined approximate speed of the craft, uses the information from the observer in conjunction with the map and compass to locate his present position. The observer must take care to notify only major changes of direction and warn the navigator when a change is

caused by crew failure or when negotiating obstacles.

During the progress of the journey the navigator will be able to establish the position of the craft on the waterway, having estimated speed related to time and the distance travelled, at any point between fixed landmarks. He must either keep a log or mark the times at which landmarks are passed on his map. Due regard will be paid to the state of tides if any, and their influence from time to time.

Conclusion

It will be appreciated from the foregoing that accurate navigation by night is not a difficult technique, in fact it can be mastered with little practice. The fact remains that the ability to use the technique to advantage where a theatre of operation permits, may allow infiltration behind enemy localities to cause disruption of his lines of communication and isolate his units, as well as permit our patrols to operate in rear areas.

Suitable craft are available within the Infantry Division although the river craft employed by the indigenous people could well suffice.

It will be conceded that the facility to effect movement of troops or stores silently by night within hostile territory could give a unit greater flexibility should the opportunity occur.

NUCLEAR THUNDER

OUT OF CHINA

Staff Sergeant P. G. Gittins
Army Apprentices School

“LET China sleep”, said Napoleon. “When it wakes, the world will be sorry”. Our generation has experienced the awakening.

It is more than likely that Red China's first atomic bomb will be exploded sometime during next year. It will be at least as large as that tested by France in the Sahara. It will be of Russian origin but will be done up in Chinese wrappings. It will rock the world. It will wreck most, if not all, political and military strategic assumptions.

Reports to this effect are going around world capitals. They are still at the whispering stage, but they fit in with other information reaching the Free World. They must be judged not only on the basis of China's technical capacity to handle atomic weapons, but on Moscow's likely purpose in creating the capacity.

The Chinese lag far behind the Russians and the West in nuclear physics and electronics, yet there has been more than one radio report (from both Moscow and Peking) that the Chinese are expected to launch their own Sputnik. This is a feat that the Chinese could not achieve unaided. It suggests close technical

co-operation with the Russians, and, despite the “differences of opinion and policy”, that this co-operation has been extended to the nuclear field.

During the past three years there have been tremendous underground explosions in Western China, confirmed by Soviet journals and described as “the biggest deliberate chemical explosions the world has known”. Russia must be weighing the consequences of sowing dragon's teeth in a China that might one day become her chief rival. But the Russians may well reckon that, within ten years, the world will have either blown itself to bits or talked itself out of the arms race; and that, meanwhile, it's worth taking a risk on bolstering China for the propaganda rewards. These could be immense.

An armament control meeting would become meaningless without the presence of China. Even if America swallowed her pride and allowed China to be invited to a summit, Peking would reject the invitation unless admitted to the United Nations.

The American Government could hardly recognise Peking, lift its boycott of China, and

haul down the moral flag it has been waving for so many years without throwing American politics into utter confusion. Russia meanwhile would look for prestige throughout Asia as the "benefactor" who had helped an Asian people to thumb its nose at Western scientific superiority.

Brief Historical Background

British and American experts now believe that China may break through with her first nuclear weapons at any time. Even the latest date for her entry into the "nuclear club" is no longer estimated as being further off than mid 1963 at the latest whilst some sources believe that China has already acquired her first atom bomb in secret.

The known facts about Mao Tse-tung's nuclear programme are that after having long refused to supply China with nuclear weapons, Russia finally relented in 1955 to the extent of supplying raw materials such as uranium and thorium for nuclear reactors.

Even before World War II, US Senator Humphrey said China had a number of outstanding physicists who understood the techniques of making an atomic bomb.

In November 1954 it was reported in both the New York Times and the American "Atomic Bulletin" that Professor Pontecorvo was directing China's atomic effort, with the locale a plant in Sinkiang Province.

In August 1958, Chinese Foreign Minister Chen Yi had said, "China will have nuclear weapons in the not too distant

future", and Lin Ya-lou, Commander in Chief of the Red Chinese Air Force, spoke of "atomic weapons and rockets, made by the workers, engineers, and scientists of our own country".

The Chinese, of course, may have been bragging. It is an old Communist trick to boast of military advances long before they have been made, but Western intelligence rates Red China's scientists quite capable of solving the theoretical problems of nuclear weapons and this was known for sure:—

- (a) In 1958 the Russians gave Red China a 25 million electron volt cyclotron built at Tomsk Polytechnic Institute.
- (b) Since 13th June, 1958, a small (7,000 to 10,000 kilowatt) atomic reactor had been in operation near Peking.

Western scientists calculate that a 10,000 kw reactor can produce roughly 3 kilograms of plutonium per year. In theory this means that without any further Russian help at all, the Chinese could produce enough plutonium for their first atomic bomb within 18 months, that is to say, by the beginning of 1961.

In London on the 4th April, 1961, the "Daily Mail" reported that China planned to explode her first atom bomb in June or July of that year. The report stated further that Professor Bruno Pontecorvo, the former British scientist who fled to Russia in 1951, would help to explode the bomb. It went on to say that the Chinese had also

made considerable progress with rockets. Apart from Soviet technical and scientific aid, China's nuclear energy development programme had been maintained with the help of her own scientists. These included American-trained Dr. Hsu Shen-t sien, who was deported from the USA in 1955 and was regarded as one of the world's leading rocket experts.

In September 1960 news came to the Western world that work on Red China's first atomic bomb had been halted temporarily and that the two Soviet scientists who were helping out on nuclear research had been called home. This was followed on 29th November, 1960 by a report that four Red Chinese nuclear scientists had started training at the East German Atomic Institute under the personal direction of the British atom spy, Klaus Fuchs.

The Situation Today

From these difficult beginnings, the Chinese programme has mushroomed rapidly. Today it involves an estimated 5,000 Chinese scientists, another 7,000 Soviet scientists, and a handful of renegade Westerners.

The most prominent of these is Miss Joan Chase Hinton, a 40 year old physicist who was closely connected with the development of America's first atomic bomb at Los Alamos. She has been in China since 1948, an enthusiastic propagandist for the Chinese Communists, and deeply involved, according to American reports, in the Chinese nuclear programme.

China's top two atomic scientists are Dr. Wang Kan-chang of the Nuclear Institute of the National Academy of Sciences in Peking, and Dr. Chiem Hsueh-shen, who is also directing a rocket building programme for the Chinese National Defence Council.

The nuclear programme has expanded rapidly since China's first heavy water reactor went into operation near Peking in 1958. Apart from the 25 million electron volt cyclotron added to this reactor, there have been, it is suspected, even more dramatic developments, since the installation has been put out of bounds to all but a handful of Chinese scientists.

Western experts have not doubted China's technical ability to produce an atomic bomb, but are all impressed by the rapidity with which the Peking regime is progressing from theoretical research to production assembly. It is recalled that Premier Chou En-lai predicted in Burma in 1960 that China would build an atomic submarine by 1965.

A British scientist who visited China in 1960 presented an alarming picture of the strides being made to move from reactors to nuclear weapons. This scientist, whose name was withheld, reported that China was "six years ahead of schedule" in its plans for its first nuclear weapons. During the same year, Mr. Cecil Brown, Tokyo correspondent of the NBC, reported that it was "inevitable" that China would soon have nuclear weapons and missiles.

The Location of the Nuclear Research Programme

The focal point of the nuclear programme seems to be at Urumchi, capital of Sinkiang Province, in the far north west, where the Chinese and Russians are jointly operating a factory to refine uranium ores from Tibet and Sinkiang. The refined uranium is then moved to Soviet Central Asia, where it is processed into rich uranium and returned to China.

Another large reactor has been built in Northern Manchuria, where power and water are available in large quantities and there are reports that other reactors are being constructed at Sian, on the Yellow River in Central China, and at Shungking on the Yangtze River.

The National Academy of Sciences of Peking atomic reactor is regularly producing 33 categories of isotopes, including cobalt 60 and natrium 24. It is said to be now capable of producing the vital element PU-239. These isotopes are at present being developed for agricultural, medical and industrial purposes.

The "marked, confident acceleration" in Chinese nuclear development is attributed to a series of secret agreements for "Scientific Co-operation" signed between Russia and China in January 1960.

Nuclear Testing

In August, 1960, reports came from Darjeeling (India) that Communist China would shortly test nuclear weapons in North Tibet. The site was considered likely to be around the Chung

Tang Plateau, 500 square miles of desolate area midway between Lhasa and Sinkiang Province. Heavy activity has been reported in points around Chung Tang and noticeable movements of teams of experts including many foreigners, possibly Russians. Red Chinese aircraft had flown frequent sorties over this area of no human habitation, many new weather stations had been built around the area, and heavy equipment moved to specified locations. But there was no news of tests being carried out. There was just a veil of silence.

In a report by the magazine "US News and World Report" it was stated that the Communists would not wait to get a finished weapon, but would explode a test device to show it was an atomic power and could not be kept out of international conferences on disarmament and nuclear controls. It would appear that so far nothing has happened — or is it being kept secret?

Some Military Aspects

In Autumn 1955, two Chinese divisions were sent to Russia for some form of special training. This was the first time complete Chinese units had been sent there — quite possibly for training in atomic warfare.

This was then followed, in the same year, by the first Soviet atomic artillery to be delivered to the Chinese army. The guns were sent to Manchuria with mixed Russian and Chinese crews.

In August 1958 it was reported in Tokyo that Russia had

supplied China with a stockpile of atom bombs and would cooperate in the modernisation of China's Red Army. This military aid had been formally approved at the National Defence Conference in Peking, presided over by Chairman Mao Tse-tung.

Two years later, in January, 1960, this was confirmed and also that Russia would turn over nuclear warheads for medium range missiles. But, as in the US arrangements with some of its NATO allies, the Soviets would keep physical control over the warheads. It was also reported that China was preparing launching sites along the coast facing Formosa. If it was decided to use them, they would be quite sufficient to knock out Matsu and Quemoy without the use of land forces.

The Western world has long known that Communist China's desire for nuclear weapons has been matched only by Soviet unwillingness to supply them. But now as they receive reports of China's rapidly developing nuclear potential, Western statesmen remember the frightening remark by Mao Tse-tung, which was reported by Yugoslavia's President Tito: "We have 600 million people and could afford to lose 300 million in a nuclear war. Afterwards, China would be better off than anyone else".

Meanwhile, reports of China's nuclear progress have been coupled with other reports of her military strength. According to the latest estimate, given by the US Intelligence Agency, the Chinese regular army at present

consists of 35 infantry divisions, 3 airborne divisions, plus an unspecified number of anti-aircraft divisions. The total strength of the regular army is thought to be increasing from 2½ million to 4 million troops — by far the largest army in Asia.

Behind this army is a trained corps of about 5 million discharged veterans.

The navy, with an estimated strength of only 56,000 personnel (including marines) is considered weak.

But the air force, with an estimated 2,500 aircraft, is the fourth largest in the world, and has an establishment estimated at between 75,000 and 400,000 men. (The large discrepancy is caused by the disputed inclusion of attached ground forces in the second figure.)

Finally, one of the most startling recent developments has been a massive mobilisation of the Chinese militia, which is used to police unsettled areas, to pioneer new regions of development, and also to add to the labour force in agriculture and industry. In addition, it is available for use at points "abroad", such as Tibet. Estimated to have a strength of 5 million only 3 years ago, the people's militia has expanded enormously since then, to a figure nearing 50 million.

Conclusion

President Kennedy did not present yet another plan for disarmament in the hope that it would be accepted. His speech was first and foremost a plea for the return to the principle of a

national approach to international problems and tensions. It was aimed at enlisting the support of Asian and African neutrals who can put pressure on Russia to resume negotiations.

But the catch in this — for both the USA and the USSR — is that as the neutrals and many others see it, there can never be a rational approach to disarmament without taking account of China.

Suppose, as has been suggested that:—

- (a) Khrushchev has been banging his nuclear fist not only as a war of nerves weapon, but as a means of ensuring that Russia keeps well ahead of China in atomic research.
- (b) Russia's grudging release of nuclear know-how to the Chinese has been a cause of the doctrinal quarrel.
- (c) The Chinese have applied pressure on Khrushchev not to be party to any ban on nuclear testing until China has the bomb.
- (d) China, beset by threat of famine and quarrels within the Party and army leadership is heading for a rigorous "Stalinist phase" of Communism.

Perhaps not all these points are true — but some of them are at least half true. In the past it may have suited the Russians to keep pressing for the admission of China to the UN, whilst at the same time knowing it was not possible. (Remember, Stalin

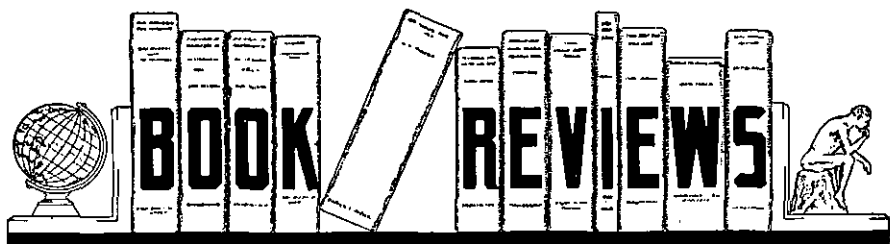
launched the North Koreans against the West and deliberately involved the uninformed Chinese just when they were on the verge of coming to terms with the US).

But how much longer will it suit the Russians to pretend that world disarmament proposals mean anything without taking into account China, who is just as much a headache, in the long term, to them, as to the West?

The Russians can assume or cast off thin pretences much more quickly than the Western world, and when the Russians do seriously and genuinely seek the entry of China into the UN, America in particular, will be left out on a limb.

If however, when China is a nuclear power, she is ignored by and not admitted to the UN, then it will bode ill for the Western world. Feeling slighted, with her virtually unlimited manpower resources and a nuclear striking capacity, she may well consider it time to put into effect phase three of the Chinese Communist plan of world domination — direct military action and the naked use of force — and Australia will be a certain target. There can be no doubt either, that China would be both prepared and capable of "going it alone" i.e., without her Communist partner, Russia.

And at this stage it is well to remember, that Australia has not yet instituted a national civil defence programme.



THE TRIAL OF ADOLF EICHMANN, by Lord Russell of Liverpool (William Heinemann, Ltd., London, and 317 Collins Street, Melbourne).

In May, 1960, the world was startled by the dramatic announcement that Adolf Eichmann had been "arrested" by agents of the Israeli Government and taken to Israel to be put on trial for his crimes against the Jewish people. It was recalled that Eichmann had been named as one of the principal war criminals accused by the Allies at the end of World War 2, and that his disappearance had saved him from being brought to justice at the Nuremburg Trials.

In the interval nearly everyone who had not taken a sustained interest in the trials and punishments of the war criminals had forgotten Eichmann. But the Israelis had not forgotten the man who had organised the extermination of millions of their co-religionists in shockingly outrageous circumstances. Patiently following slender clues, agents of the Israeli Government at last ran their quarry to earth in the Argentine. Believing that the Argentine Government would not agree to extradition, the agents kidnapped Eichmann and took him to Israel. Argentina

went through the motions of formal protest but was, apparently, not prepared to do more than that on behalf of a man of Eichmann's hideously evil reputation.

The Israelis took extreme care to ensure not only that justice was done, but that justice was seen to be done. Dr. Servatius, a prominent German lawyer, was engaged to conduct the defence, and every possible facility was placed at his disposal. The trial itself was conducted with meticulous fairness; never were the scales of justice more evenly held.

In quiet, even language, utterly devoid of emotionalism, Lord Russell tells the story of the trial, presenting first the case for the prosecution, then the case for the defence. For all the careful restraint of its language, the book constitutes a tale of unimaginable horror, of bestial cruelty, of human depravity, that almost defies the comprehension of civilised man. Yet this thing, this calculated deliberate slaughter of some 6,000,000 people did not take place in some dark primitive jungle, or in our remote pre-historic past. It took place in our own age and time, in the heart of our civilisation. Nowhere in history can we find genocide attempted on such

a colossal scale. It is entirely proper that the record should be made available for all to read, if for no other reason than to demonstrate the existence of the evil forces which, lurking beneath the surface of society, are ready to spring to active life at any suitable opportunity.

Adolf Eichmann rested his defence primarily on the plea of obedience to superior orders. The court rejected the plea on the grounds that those orders were not lawful orders, that Eichmann was fully aware that they were not lawful, and that, nevertheless, he carried them out.

In an appendix Lord Russell examines the legal aspects of the plea of superior orders, and shows that it has a very insecure foundation in modern international law. He makes it clear that since 1921 international law has held that a subordinate who carries out an order well knowing it to be unlawful lays himself open to subsequent trial and punishment. The trials and punishments of the war criminals were not without precedent, and were not merely summary acts of revenge. The proceedings derived from established principles of law, and were in every sense of the term, acts of justice.

Lord Russell points out that in the past British Manuals of Military Law have not been sufficiently explicit or accurate on the question of the plea of superior orders. Perhaps when the next revision of our own manual is undertaken, it might

be as well to make sure that the position is explicitly and plainly stated.

— E.G.K.

THE CONDUCT OF WAR 1789-1961. A Study of the Impact of the French, Industrial, and Russian Revolutions on War and Its Conduct. By Major General J. F. C. Fuller. 352 Pages (Rutgers University Press, New Brunswick, N.J., 1961. \$6.00).

Reviewed in the MILITARY REVIEW, Command and General Staff College, Fort Leavenworth, Kansas, USA by Lieutenant Colonel W. N. Martasin.

The first, the grandest, the most decisive act of judgment which the Statesman and General exercises is rightly to understand the war in which he engages, not to take it for something, to wish to make of it something, which by the nature of its relations, it is impossible for it to be.

The theme of General Fuller's latest book is, in essence, contained in this quotation by Clausewitz. Although the book traces the changes in the purpose and conduct of war from the Thirty Years' War to the present cold war, it stresses the underlying importance of the relationship of war and policy which Clausewitz expounded 130 years ago. In this book the conduct of war is viewed, not from the "military angle" but from "the pressure of political, economic and social developments upon it".

General Fuller quotes liberally from Clausewitz, Marshal Foch, Lenin, and Hitler, acknowledging

that this may be somewhat tedious reading. However, only from the actual words of these writers can the reader get a true grasp of General Fuller's message. Statesmen, military analysts, and historians have paraphrased — and misinterpreted — many of these writers. Fuller leaves it to the reader to evaluate the quotations in the light of history and the current world situation.

Perhaps the two most important chapters are those on the "Theories of Clausewitz" and "Soviet Revolutionary Warfare". A comparison of these chapters reveals the extent to which the early Bolsheviks adopted Clausewitz — and have used his theories in applying war as an "instrument of policy".

According to Fuller, Allied leaders of the two World Wars would not have blundered as they did if they had heeded the words of Clausewitz in this regard. Fuller is not kind to these Allied statesmen and attributes the present state of instability and threat of annihilation to their actions and attitudes before, during, and after both wars.

Fuller sees peace as the ultimate aim in war and decries the "unconditional surrender", extermination, and total destruction which served as national objectives in World War II.

He claims that the basic difference between the democracies and Soviet Russia is their respective outlooks on peace.

To the one peace begins when war ends, to the other it is a continuation of war by every means short of actual fighting. To the one international differences in peacetime are settled by argument, to the other they are accentuated by it.

Fuller claims that Khrushchev has already declared war on the democratic nations by his affirmation in November 1960 that the Soviets will outproduce the United Kingdom, Western Germany and the United States by 1970. This is "economic warfare on military lines, the aim of which is a revolutionary one, and in which trade represents armed force".

This is an excellent study of modern warfare and a new classic in military literature.
