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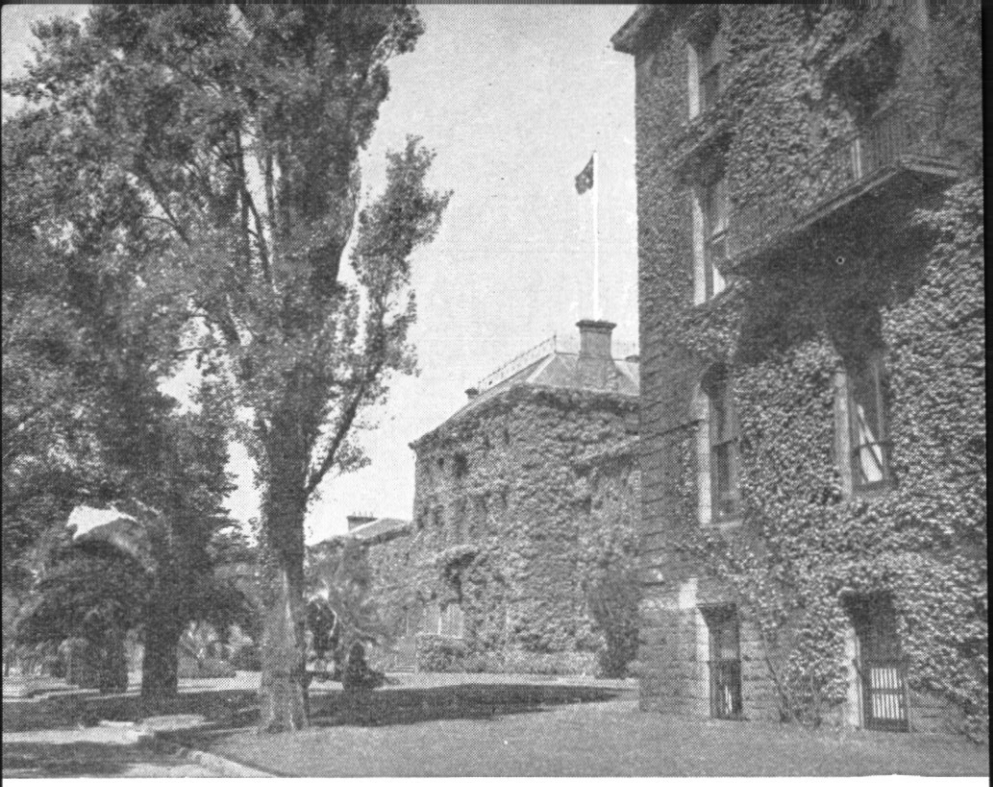

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AUSTRALIAN ARMY JOURNAL

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SOLDIER, SCIENTIST or SOCIALITE

Major-General S. F. Legge,
Master-General of the Ordnance.

THE author of "Revolution in the Military Profession" (A.A.J. No. 61, June, 1954) claims that the Army is out of date and out of sympathy with the modern scientific age. It is suggested that army leaders dream of the horse and the waggon with nostalgic tears in their rheumy old eyes and dismiss such trifles as the atomic bomb with a testy "It wouldn't have done for the Dook, me boy."

Meanwhile, a sprinkling of young officers who are capable of distinguishing between chain mail and chain reactions batter ineffectually with their slide rules against the complacent adherents to tradition.

It is claimed that the army has therefore lost the respect of the nation, and with it its social prestige, and claim to adequate monetary reward, and that the only remedy is for officers to become scientists, redeeming the lost status of "officer and gentleman" with the more modern title of "officer and scientist."

This shocking indictment calls for refutation, not so much because the accusation may cause choleric resentment in the elderly, as because the proposed remedy is superficially attractive though in fact impractical. It smacks of the popular parrot cry of "push-button warfare" so attractive to those who are unwilling to spend money on armed services of conventional patterns, and therefore it is potentially dangerous to the safety of the nation.

The point of view adopted by our accuser is too limited in outlook; it reminds us of the small girl at the zoo who did not like the elephant—he was too big to see. Too close an approach to the dull and uninteresting epidermis obscured the noble proportions of the beast. It behoves us, therefore, to stand a little further off where we can see the full stature of the subject, its relationship to its environment, and perhaps

trace something of its progress through the years.

First let us take a look at the familiar words "officer and gentleman." In a sense they are similar to the words "chicken and egg." Which came first, the chicken or the egg, the officer or the gentleman?

When our Western civilization emerged from the dark ages it consisted of a mass of struggling groups ruled by men who seized power and held it by the strength and skill of their sword-arms. From this welter of strife the more powerful carved out kingdoms, the less successful had to be content with dukedoms and lesser estates, and the weakest were eliminated. The growth of kingly powers tended to stabilize the positions of their adherent knights, and succession to title by right of birth became less and less subject to challenge by force of arms. In this way our hereditary aristocracy was established. Founded by men whose main occupation was war, whose recreations were jousting and warlike sports, it was not only their right, it was their bounden duty to train, and lead their retainers in the king's wars.

The term "gentleman" was adopted by this privileged class to distinguish its members from the common folk. It was a sign of social standing rather than a guarantee of possession of special romantic knightly qualities. This title, initially applied to the descendants of the early knights, was jealously guarded down the centuries, aspirants to the title were not easily admitted to the charmed circle, while crudities such as indulgence in trade earned swift expulsion.

From the Stuart days, when the regular army first appeared, right down to the days of Victoria, officers were automatically drawn from the "gentleman" class. Exceptions were so rare as to be negligible. The only qualifications required of an officer were the standing of a gentleman and sufficient money to purchase a commission.

The expression "officer and gentleman" originally signified the fact that only a member of the gentleman class could be accepted as an officer. Social prestige attached to the "gentleman," not the "officer."

It was not until the Victorian era that special qualities and professional training came to be demanded of the regular officer, public opinion having at long last sickened of the criminal incompetence of senior officers whose only claims to command were noble blood and a long purse.

World War I initiated a drastic social change. The supply of "gentleman" officers was unequal to the demand, and large numbers had to be drawn from humbler classes. World War II and the levelling-down processes of modern democracy have increased this drift from privilege, though its relics are still to be observed in the acknowledged superior social status of officers of such regiments as the Guards. Of course, in countries like Australia, where claimants to social superiority have always had a hard battle, the existence of the hereditary class of gentlemen has never received full acknowledgment.

If there has been a decline in the social prestige of the military officer it is because his commission is no longer a guarantee of social rank. Even a very cursory survey of mili-

tary history is enough to show that professional standards are today very much higher than in the days of purchased commissions.

Questions of social prestige are of little consequence in this country, where in theory and in fact the highest positions can be attained from the humblest beginnings. The soldier will always be accorded on official occasions the position to which his rank entitles him. In the private world every man will tend to find his own niche; whether his standard be wealth or learning, or something else, he must make his own way. The Queen's commission entitles him to command in Her Majesty's Army and gives him no right of entree to any private section of society.

It is a great mistake to imagine that social prestige, whatever this may mean, will bring in its train increased emoluments. Rewards are still mainly a matter of supply and demand, and public demand tends to favour the entertainer rather than the benefactor. It would be very surprising to learn that scientists as a class are better paid than military officers, or that they enjoy a greater measure of social prestige.

It remains now to examine the suggestion that the modern officer should be also a scientist, or, even if I gauge the matter aright, primarily a scientist.

The tremendous spread and scope of the modern press has provided pulpits from which armchair strategists, self-styled scientists, columnists and cranks of all kinds pour forth such masses of words that the critical faculties of readers become clogged with sheer quantity. In the background, like the grim scenery of tragedy, stand the atomic bombs, the guided missiles, the phials and cultures of dreadful disease; their very appearance is filled with such menace as to invite panic and inhibit rational thought.

We must not let ourselves be so overawed as to be incapable of a logical approach to the problems of modern warfare; the changes that have taken place in the last 50 years are changes of degree, not of kind. War is now waged with all the resources of the nation and against all the resources. Civilians, farms, factories, all play their part in the struggle and all are targets for the enemy. It is the task of the armed forces to destroy the enemy and prevent him destroying us. It is the particular task of the army to destroy the land forces of the enemy and to occupy his territory. It has yet to be proved that the scientist alone, with modern implements of mass destruction, can bring to subjection a courageous nation; and if both sides have these weapons and they are used until the power to make them is destroyed, will not the survivors crawl from their shelters and continue the struggle with more primitive weapons?

On the other hand, it is possible that the threat of such widespread destruction may well prevent the use of these modern weapons by either side and future battles could be fought with less potent arms. What of Korea, Indo-China and Malaya?

All this is not to suggest that science has no place in military affairs; the problem is to discover the right place. We must not forget that the scientist existed before the atomic bomb. The sciences of metallurgy, chemistry, ballistics and others have led us from Brown Bess

to the Bofors, but Waterloo was not won by the Royal Society nor Normandy by Einstein.

Before we can examine the question of whether the professional soldier should also be a scientist we must be clear as to the precise meaning of the terms we are to use.

For the sake of brevity and clarity in our argument we propose to put our scientists and others into well defined compartments while admitting that in fact the mental achievement or activities of any one man are not so strictly bounded.

First, a pure scientist concerns himself with discovering fundamental facts, without regard for the practical results of such discoveries.

The technologist surveys the fundamental facts of science and selects and arranges suitable facts to produce some desired practical result of direct interest to some aspect of our living.

The industrialist selects, from the achievements of the technologist, processes which he can apply in his factories to the manufacture of quantities of end products of value to the public.

The user may or may not require a special skill to get full value from the end product, but even where considerable knowledge and skill is needed very seldom will it be quite the same type as produced the basic idea and the practical article.

The operator of a television set needs no scientific knowledge, and the highly skilled doctor using radioactive isotopes does not need to be a nuclear physicist.

No one will deny that the armed services must keep themselves abreast of the developments that are taking place in the worlds of science and technology so that they may possess themselves of weapons of the greatest possible effect and avoid being surprised by an aggressor using a novel form of attack.

The problem is how are the armed services to keep themselves in the forefront, and it has been suggested that they will succeed if they become scientists.

This somewhat naive suggestion neglects to take into account the mass of scientific and technological knowledge that has been and is being accumulated, a mass so great that even the finest brains are incapable of holding it all or of even reading about it. This is one of the major problems of today, the need for a clearing house of knowledge so that discoveries in one field which may have impacts on other fields may become known to the widest circle.

In what field of science or technology is the professional soldier to dabble? Can he be of real use if he merely dabbles? Can he properly qualify himself as a soldier and still in the scientific field be more than a mere dabbler?

What is the proper role of the professional soldier in the community? It is to learn how best to use against an enemy such resources as his government will provide, to study how best to counter the probable and possible moves of an enemy, and to advise his government of the resources he will need for success.

Despite statements to the contrary, the principles of war are immutable and are quite unaffected by the advent of so-called revolutionary weapons. They are, simply, attack

the enemy in his most vulnerable place and protect your own vitals. These are known instinctively to every man, indeed to every living thing. Those other statements that appear in many textbooks disguised as principles are merely considerations which follow, and which have greater or less import as the circumstances may dictate.

The simple soldierly virtues of courage, fortitude and loyalty are not the peculiar possession of the regular forces though they are an essential part of the professional soldier's make-up. The deployment of an army on the field of modern war is an immense *tour de force* of organization made more difficult by the efforts of the enemy to frustrate it. It covers, in addition to strategical and tactical concepts and the training of troops in the use of their equipments, almost every phase of activity known to a Western community, and it may have to be effected in areas remote from civilization.

The major share in such a task must of necessity in the early stages of war fall to the professional officer. To fit himself to fulfil his task, a lifetime of study is surely not excessive.

If we are not to have soldier scientists, and I believe it not to be possible to combine satisfactory attainments in both fields in the one individual, how are we to make use of scientific developments?

The answer lies in co-operation between the soldier, the scientist, the technologist and the industrialist, each in his own sphere.

The soldier, as a result of observing the shortcomings of his own equipments, and studying what he can find out about a potential enemy's equipment, makes known to the scientist what he wants to be able to do. The scientist suggests the application of certain fundamental principles, the technologist experiments along the lines suggested so as to get a practical answer to the problem, simple enough to be operated by the ordinary man, the industrialist surveys his capacity to produce the new equipment in the quantity required, the soldier tries out the new equipment under field conditions and trains troops to use it effectively.

The Battle for Britain serves as an excellent example of this type of co-operation. The RAF needed some form of warning device to enable them to get their fighters in the air in time to meet the Luftwaffe. The National Physics Laboratory produced the answer in the form of Watson-Watt's primitive radar designed to track thunder storms. After research had been carried out, a satisfactory form of equipment was produced in quantity and men trained in their use. This warning system, combined with Hurricanes and Spitfires, designed by the technologist and produced in quantity by the industrialist, gave us the equipment needed for the defeat of the German Air Force. But, and a very big but indeed, all this would have been of no avail had it not been for the trained skill, courage and endurance of the fighter pilots, the ground organization at the airfields and the radar stations which carried on under intensive bombing attacks, and the skill of Fighter Command in directing the battle.

This example from the RAF is quoted for its simplicity; similar

examples could be quoted for the Navy and Army.

It would be quite wrong to suppose that nothing is being done in the army to cope with the new problems resulting from the introduction of weapons of mass destruction. Scientific advisers and staffs exist to keep us in touch with new developments and to find answers to our problems. Examination has been made and is still being made of means of overcoming the threat of atomic weapons to concentration of troops or stores, and a good deal has been published on the effects of atomic explosions and how these may be minimized.

It would also be quite wrong to suppose that any army of the Western powers is entirely satisfied with its equipment, but it must be remembered that because of the very great cost of modern equipment, and the continuous advances that are being made in improved performance, it is next to impossible to hold always adequate stocks of the latest type and at the same time avoid endangering the country's economy by diverting too much of its income to purchase of warlike equipment.

The problems that face the Army in Australia today are not primarily those of social prestige and pay, though the latter is of more than passing interest. They are concerned with the security of our national existence.

The average Australian has never had much respect for claims to superior social status. Limited prestige attaches to official positions, some to wealth, more to prowess in sport, all is ephemeral. The Army today probably enjoys as much prestige as it has ever had.

The pay of the average officer must not be compared with that of an individual who is in a position to influence his own earnings. It would be surprising to learn of any person paid from Treasury funds who felt that he was in receipt of emoluments commensurate with his value to the community, and judging from recent comment in the press it appears that scientists are no more lavishly rewarded.

The problem facing all regular army officers is how best to contribute towards his country's preparedness for war. The resources made available to us are inadequate. We know it, the Government knows it, but the Government has its own problems of finance and expects us to do the best we can. We have not the resources to create atomic weapons, nor can we emulate the United Kingdom or America in elaborate research work on novel types of weapons, although we can help to some degree. Our major tasks are to train the regular army and assist the CMF officers to train their troops in the exercise of soldierly qualities and the effective use of such equipments as we have. We can try to forecast the conditions under which we may have to fight in another war and prepare our plans for it. We can, with the aid of our scientists, technologists and industrial leaders, review our capacity for the production of equipment. We can train ourselves to exercise command or administrative functions so that in war our forces can take the field lacking neither leadership nor administrative support through any fault of ours.

There is a place for the soldier with some scientific knowledge as

a link between the soldier and the scientist, but if we attempt to train all officers as scientists we will inevitably fall between two stools. It is neither necessary nor practicable.

I suggest that just as the study of any one branch of science is a lifetime job for any man, so the study of tactical employment and maintenance of troops in the field is also a lifetime study.

The battle of Plataea is an example of how a first-rate strategic plan can be ruined through a tactical error. On the morning of the battle Mardonius had his enemy beaten. He had only to continue his harassing tactics to see the scattered Greek forces drift back through the passes and dissolve into fragments. But through over-eagerness to ensure their destruction he allowed his men to be trapped into a hand-to-hand encounter with superior troops, and he lost everything. Desperate courage won the stakes against superior generalship. By sheer hard fighting, the hoplites retrieved the strategic blunders of their commanders. War, it must be remembered, is not like a game of chess where you can beat your opponent by skilful moves alone. In war you must fight your adversary and destroy him. Skilful moves may enable you to fight him at an advantage. But if in spite of this you do not destroy him, if on the contrary he destroys you, then all your skilful moves go for nothing.

—Arthur Birnie in "The Art of War."

THE SOVIET SOLDIER and HIS LOYALTIES

Translated and condensed by the Military Review, U.S.A, from an article in "Die Deutche Soldatenzeitung," West Germany.

"EACH American soldier has a truck; ten English soldiers have a truck between them; the German infantryman carries a pack; but Ivan carries a small sack with bread and turnips with him, and lives a week on them."

This, in substance, was the saying among the soldiers in the last war, and it was not particularly exaggerated. Since then, the picture has changed but little. At most, differences are now more clearly defined: differences, that is, in the equipment of the Soviet elite units—of certain armoured units and, above all, of the elite combat troops of the Ministry of State Security forces (MGB), the former People's Commissariat for Internal Affairs (NKVD) — and of the line units for the massed frontal attacks of the "Ivans." How do they live? What do they have? What do they think?

Sixteen Hour Day.

"Ivan" has very little to move him to laughter. It begins with a post card: "Citizen Ivan Ivanovich Ivanosky will report at 0600 of such and such a date, at the office of the Draft Board. One suit of clean underwear and a spoon to eat with will be brought along." Every year, 750,000 Soviet citizens receive a similar card.

The uniform they give him is extremely shabby—but Ivan does not notice this so much, as he hardly knows, or is accustomed, to anything better. He receives two pairs of baggy knee breeches — one pair black, of a coarse wool mixture for the winter; the other of greenish, cotton khaki. In addition, there are two Soviet blouses — again one heavy, and one for summer wear. If Ivan should ever be promoted, then, of course, his uniform will, by degrees, become much better looking. Around his feet he wraps strips of cloth—stockings or socks are available for officers only. And then the crowning piece: broad, heavy boots of rough black leather, the toes of which are flattened out by much wearing. The more creases these shoes have the prouder Ivan is, for the accordion effect is regarded as especially smart.

Thus, Ivan begins his 24 months

of prescribed military service—which often enough becomes 48 or 60 months, without his being able to do anything about it. At 0530 comes reveille! This is followed by morning calisthenics, the daily obligatory shave, breakfast—a large plate of *kasha* (thick barley gruel), six thick slices of black Russian bread, and unsweetened tea. Then he cleans his spoon by wiping it on the arm of his uniform, sticks it in his boot, and training begins.

From 0700 to 1100 there is field training: especially difficult training in the field, often with the use of live ammunition, even in small exercises—and quite frequently men are wounded. At the present time, technical training with weapons occupies an especially important place. Ivan must be able to handle and take care of all of the most important types of weapons, vehicles, and equipment.

The midday meal is, day in and day out, the same monotonous overly greasy food that is rich in starch and deficient in albumen.

The afternoon goes by like the morning: outside duties, political instruction, the cleaning and mending hour, and care of weapons. At 1800, there is an equally frugal evening meal. In the evening there is often *lishnoe vremia* (free time). During this period, Ivan may write letters or, once a week, go to the soldiers' theatre. He may also, together with others in the large room in which, as a rule, as many as 60 men are quartered, amuse himself singing ballads and *kastushki*—lively four-line choruses. But often the evening is devoted to "indirect training"—a voluntary engagement in additional political schooling, discussions, work, and military training.

Sundays are service-free. In the Soviet Union there are—barring the interference of the political leaders—passes to be had to the neighbouring cities. In occupied countries, however, this is not so—for Ivan might soak up some anti-Soviet ideas. Strong beer is not obtainable in open sale—only in the officers' messes—and he cannot afford vodka, for he receives only 30 roubles pay a month and out of this he must pay for his sewing kit, his cleaning materials, and other items of necessity.

At 2300 the day has run its course, a day which, as a rule, comprises 12 hours of training but which, many times, may be extended to 16 hours, especially when the political commissars or the commanders of the unit are overly zealous or seeking promotion.

Disciplinary Punishment.

If the training is weighing heavily upon Ivan, the highly refined disciplinary punishment meted out finishes the job, for it is based on the ancient principle of "divide, then dominate!" Amount and severity of punishment are regulated by a form of sliding scale, based on service grade, and thus are largely a matter of arbitrary choice. As a private, for example, Ivan is given, for the same offence, a more severe punishment than if he were a non-commissioned officer. And the regimental commander metes out more severe punishment for the same offence than does the company commander—which Ivan's simple mind feels to be a crying injustice, although for centuries it has been drilled to see, not only absolute power, but absolute justice in all in authority. But, *Nichevo!*—What can one do!

And then he shrugs his shoulders when, for example, his comrade, Maxim Maximovich, is sent to a Siberian Prison Camp for 10 years because he told something or other, of little consequence, to a Soviet civilian about his unit. Or like the time when his sergeant major lost his service pistol, and was given four years for it; when an unexcused absence of a short period—about two hours' overstay on a pass—brings 10 years; or, also, when unintentional failure to salute—which after 1918 had been done away with as typifying the hated Czarist military oppression — drew five days of punishment with the labour service.

A large number of Ivans desert. Of the many thousands of deserters who have come to Germany and Austria in recent years the majority named this disciplinary punishment as the reason for their flight.

The Soviet Officer Corps.

If anything shows that the Soviet society bears the most marked class characteristics conceivable, it is the composition and standard of living of the officer corps of the Soviet Army. Along with the higher "Party Intelligence" and "Corps of Experts," who, today, are firmly established, the officer corps is the third supporting pillar of the Soviet community, and this community rewards it lavishly. This does not apply to reserve officers, and it is only with the rank of colonel and above that the career officers are accorded special recognition. In the lower grades the officer may, for example, wear a black lambskin cap, but even the regular Army captain keeps aloof from the world about him to a degree that is unknown in other countries.

The advantages begin with the pay and include the Czarist uniforms, glistening with gold, that have been re-introduced, on down to the countless orders with which Stalin was accustomed to adorn deserving and highly approved marshals and generals. These orders often possess a high intrinsic value—for example, the Order of Lenin of the highest class gives the holder 30,000 marks. And the advantages may be considered to find their culmination, in a material way, in the enormously reduced prices of the *gostorgof* (the officers' stores, which are stocked, in an echeloned manner, with goods in accordance with the service grade of those authorized to buy there); and in a non-material way, with the rigorously enforced order that the Soviet subordinates, today, instead of simple *Da!* (Yes!) must say *Tak tochno!* (Yes indeed, most obediently!); and in place of the Russian *Nyet* (No) they must say, instead, *Nikak nyet!* (No, by no means!) in reply to orders—and this in a country where the population, otherwise, is becoming more and more careless in its speech!

The Battle for Power.

It is entirely clear that future development will depend on how the Soviet Army conducts itself. But who is the Red Army? Who leads it? Number 1 man, at the present moment, is Marshal Nikolai Bulganin. He was Stalin's right hand man. For several years he commanded all the forces west of the Soviet border. But he is a member of the Soviet secret police (GPU). He started in the military officers' corps of the NKVD, not in the Army.

The man to whom everyone looks has allowed himself to be pushed

into the background. He is the former Czarist officer, Marshal of the Soviet Union, Alexander Vasilevsky. At 54 years he is still young, and in a non-Bolshevist country could have a future.

One of the most outstanding men, possessing a "military mind," is the man who, in the minds of the people, won the war for the Soviet Union—Marshal Georgii Zhukov, the conqueror of Berlin. If the Soviet Union should become a military state empire, then he will come to the front. One man who will serve everyone, and whom all will need, is the present chief of the General Staff, Marshal Vasilii Sokolovsky—young, elegant, courteous, but determined, and of a high intelligence. He is the man in the Army who best knows the leading military men of the West, and their ways of thinking.

If one looks for action on the part of the Army it will come quickest from an impetuous, fearfully active and rather impatient man, who is well known in Germany—Lieutenant General Vasilii Zhukov, the real conqueror of Stalingrad. He is said to be the leader of an emphatically national, radical, younger officers' corps, which is tired of the many misunderstandings in the country.

All other marshals and ranking generals of the Soviet Army are, in contrast with these, colourless and of no consequence.

Attitude of Officers.

How does the Soviet officer corps feel about the present situation? It is safe to assume that these men are satisfied with their present positions, and that they will fight to retain them at any cost. There is no group, however, which does not have its own ideas and desires, and which may some day try to put these into effect.

To think militarily is to think strategically. To think strategically means, above all, to be ready on time for any conceivable development. It is a sound assumption that the West will fight a preventive war. Therefore, plans are surely prepared for this eventuality by the strategic planners. In addition, these strategic planners, most likely, have prepared their own personal plans.

Among the questions facing the planners are these:

1. Should the attack be launched against the external threats first, and then, after these have been eliminated, carry out the necessary purges within the country?

2. Should they wait for the attack, give ground, draw the adversary into the depths of the vast Soviet expanse, and count on time, on politically attritional fatigue, and the as-good-as-certain, crude political mistakes of the enemy's occupational policies?

3. Should they wait for the greatest surprise of all—a change over to the side of the West?

4. Should they defend the Motherland to the bitter end in spite of everything? Or should they, by means of sabotage, hasten the fall of the regime, with all of its defects?

The Soldier's Course.

And whom will Ivan follow? What is the meaning of the artful double talk of the policies of the one in power; the rumours which circulate of secret opposition on the part of this or that general, this or that clique? Actually there is little to

all this. The *Muzhik* will march forward or backward just as he is ordered.

If, however, one day there is no longer anyone there to order—will he, then, raise his hands and wave the *propusk* (pass) dropped from the airplane, guaranteeing him good treatment and prisoner's rations?

Perhaps even before this he will stand, grinning in the ditch, along the highway, with hands in the air, full of confidence in what the West may already have promised him by loud speaker or radio. It is to be hoped that the same mistakes will not be made then, that we Germans made after 1942. It is to be hoped that the warning will be heard which an old Russian scientist, a German diplomat, gave to the Americans years ago:

"It is to be hoped that the United States will not repeat, if they eventually have to fight the Soviet Union, the mistake of unconditional surrender. Fight always only against the Soviets—never against Russia and the Russians."

The principles of the art of war shine in history like the sun on the horizon; woe to the blind who cannot see them.

—*Grouard.*

THE WEST *versus* THE REST

Major G. M. F. Wood,
Australian Intelligence Corps.

"Force is powerless to organize anything. There are only two powers in the world; the sword and the spirit. In the long run, the sword is always defeated by the spirit."

—Napoleon.

IT is quite evident that the spirit in the form of ideas and ideals has proved the real motive force in the world, and in any encounter between divergent ways of life the society with the superior ideals or the superior practice of those ideals is likely to emerge the victor.

These spiritual or idealistic forces are fairly well summed up in the one word religion, if we take it in its wider sense to mean, not only man in communion with his God or gods but man in his attitude to ideals, ethics and codes of conduct.

Thus to the confirmed Marxist his dialectical materialism is his religion even if this expressly denies a personal god.

Two Camps.

The major nations of the world are today divided into two camps; it is not yet clear if there is to be a third camp or force. The two opposing camps are, of course, the West and the Soviets.

The West.

The West embraces most of what used to be called Christendom and includes all of Western Europe, the United Kingdom, the Americas, South Africa and Australasia.

It also covers some countries outside the Christian orbit, such as Turkey. It may eventually include other countries who have not yet finally decided their allegiance, such as Japan, Pakistan and Israel.

The Soviets.

This term encloses all the countries inside the Iron Curtain; Russia, China and their satellites.

A Third Force.

The bargaining power of a Third Force must appear most attractive to the retarded peoples of the world.

India aspires to lead such a force, composed of Asiatic peoples, but her

own political and social evolution will need to be carried much further before she can ever hope to organize such a group. There is, however, a body or assembly of peoples who may one day constitute a third force, if they can overcome their present disunity. These are the Islamic countries, whose present inclination is generally towards the West.

Religion.

It is remarkable that these three forces, the West, the Soviet and Islam, have a common spiritual or idealogical tap root in Judaism; if they are not all true branches, then they are what the gardener calls "sports" from the tree of this ancient Hebrew faith.

The great religions of the world have all arisen in a crescent around the southern margin of the land mass of Asia. Christianity, Judaism, Islam, Buddhism, Hinduism, Taoism, Confucianism and others of less importance have all arisen or have evolved in this area.

No western nation has cradled a true religion. There is no doubt that the clash of the West upon the East has influenced the three highest—Judaism, Christianity and Islam; and of these three, Christianity was most subject to Graeco-Roman influences.

Judaism.

Judaism, "the idea and challenge of the one and only God," is a unique and striking example of continuous religious development.

Christianity.

Christianity, a development or fulfilment of Judaism, was accepted by the Gentiles but generally repudiated by the Jews, who retained their ancient Hebrew faith. The centres of Christianity, a religion born on the desert verges of Palestine, moved westward and in the process changed somewhat to fit its new environment.

Intolerance and militarism were emphasized as befitting the character of the western peoples, who adopted Christianity so thoroughly that its principles and ethics, if not its practices, are deeply embedded in their way of life.

Islam.

The other great monotheistic religion is Islam. Mohammed, its prophet, who lived in the sixth century (570-632 A.D.) had many contacts with both Christianity and Judaism. In fact his earliest religious overtures were made to the somewhat debased Jewish and Christian communities at Medina and elsewhere.

He regarded Jesus as a kind of prophet like himself and he thought that the Christians themselves "were off the beam."

Mohammed directed his early prayers and aspirations towards Jerusalem, the holy city of the Christians and the Jews. When he failed to convert these people to his way of thinking he broke off all relations with them and decided to make his own birthplace the holy city of his new religion. He therefore decreed that all Moslem prayers would in future be directed towards Mecca.

Islam is a Christian heresy, its holy book the Koran is a mixture of Judaism, Christianity and Mohammed's own intuitive "openings" or revelations of a religion, suitable for the desert dweller.

Islam began its life as a programme of militant reform, a revolt against the contemporary practice

of Christianity, which at that time was at a low ebb. Its success in its early days shows the powerful nature of a reforming heresy when the orthodox religion attacked is unwilling to cleanse or reform itself from within.

Its adherents number some 220 million and its practice is widespread along either side of the tropic of Cancer from Morocco in the West through Africa, the Middle East, far up into Central Russia, Asia, India, and as far east as the Philippines and Indonesia.

In the colder western communities Islam has never been very successful, and its militant forces were defeated at Tours, in west-central France, a hundred years after the death of the prophet.

Gifted personalities and drastic revivals have cleansed Christianity from time to time. Islam has been less fortunate in this respect and it may be that its great days are passed, for it appears less able to survive the modern spirit of freedom and criticism.

Communism.

Communism is the second great Christian heresy, which also arose as a result of dissatisfaction with the contemporary practice of Christianity. It arose at a time of great social and economic change, when science first began to question the literal truth of statements and beliefs long held sacred by Christians.

In 1816 Malthus completed the final edition of his celebrated "Essay on Population." In 1859 Darwin published his "Origin of Species." During the same year Carl Marx produced his "Criticism of Political Economy," which he later expanded into "Das Kapital."

In a preface to his earlier work Marx acknowledged his debt to Darwin, and it is clear that he attempted to rationalise certain of Darwin's biological findings into his own social theories.

Marx, a German Jew and a bitter anti-Christian, lived in poor circumstances in London; he naturally felt the impact and exclusiveness of the English class system, then at about its peak.

He saw a professedly Christianised western society condoning grievous inequalities in social strata and in the distribution of worldly goods, and he pronounced the whole system wrong. This is a characteristic argument of the heretic, who argues that if part is wrong then the whole is wrong.

Marxism professes to be a co-ordinated socialised system permitting man to perfect himself by economic change. This goes far beyond the biological concepts of Darwinism and implies that Marxists believe that acquired characteristics are inherited.

This is why there was such a great fanfare when a Russian agronomist called Lysenko said he could do this in the plant world. By change of environment and other factors he claimed to be able to change wheat into barley, to alter the growing and harvesting cycles and, in short, to change species and types.

Put in a simple form, it means that if a non-musical couple learn the piano arduously and diligently (in other words, they are not born with but acquire a musical characteristic) then their children will inherit a more musical tendency than would otherwise be the case.

Western scientists say that this is not so and the laws of heredity laid down by the Czecho-slovakian monk Mendel in 1866 still hold good. They call Lysenko a charlatan.

Some recent happenings in Russia indicate that not all Soviet scientists are in agreement with Lysenko.

Lysenko's claims, if proven, are of extreme importance as, if they apply to plants, they should apply to human beings also. This would mean that Marxism, at last, would have a scientific basis for portion of its dogma.

The conception of rigid classes on which Marxism is based has largely disappeared in the western world generally, and especially in the democratic offshoots of the United Kingdom, the U.S.A., Canada, Australia and New Zealand. The major failing now appears to be an inclination to level down rather than level up.

These new peoples appear determined to avoid what they felt to be errors in the older social system. It is notable that this change is occurring in the West, especially amongst the English-speaking countries, by the normal British method, that is, by evolution, as opposed to revolution.

In 1917, when the revolutionary Russian regime sought a new and radical system of society, Communism must have seemed a creed made to order. It was adopted with fanaticism and enthusiasm. This was the first time Russia had borrowed a creed from the West, as Russia was Christianised from the Eastern, not the Western, branch of the early Christian Church.

So Christianity is faced with its second major challenge. The first, that of Islam, was overcome in the seventeenth century. Communism is a far greater danger because, as we have said, it is a western invention, a mirror of the West's uneasy social and spiritual conscience and its dissatisfaction with many of the things that are.

It is, therefore, ready-made to illuminate the flaws in the Western world, for it was evolved to overcome those very inequalities and shortcomings that Christianity had failed, over the centuries, to transform.

The Communists have challenged the West on two planes—the technological and the spiritual.

Technology.

Since the days of Peter the Great the Russians have tried to keep abreast, or indeed to surpass, the West in this field, but have failed to do so.

When Russia might think that she was catching up on the long haul, the West always produced something new out of her technological bag of tricks; the last major one, of course, being atomic power.

This striving for technological equality is behind all the claims the Russians have made of being the first to invent the steam engine, the internal combustion engine, wireless, electricity, photography and so on.

The Soviets say that the repressive and reactionary measures of the Czars were responsible for these early discoveries not having come to light before. Statements of this kind are the natural reactions of a talented but retarded people seeking to justify themselves technologically.

In the West the almost frantic technological activity continues unabated, and some authorities claim that this represents a debasement of Western spiritual power down to the lower level.

It appears certain that, on this plane, the Soviet will always trail behind the West.

Ideology.

On the ideological or spiritual plane Marxism has had, initially at least, far greater success.

From about 1920 up until World War II, Communism made slow but steady progress westwards, its ideology appealing to many classes of society ranging from the misfits and the disaffected through the idealists.

The great depression boosted it along considerably, but it fed mainly below the surface, being an infiltration rather than a frontal attack.

Stalin.

The war was the great and fateful opportunity. In many of his writings Stalin called war "the midwife of revolution." He expected a crop of revolutions to come during or as an immediate aftermath of the second World War and he fully believed that the major part of the world would be Communised before his death. There is no doubt that he died a disappointed man.

In any event, he did a passable job of work, for this was the scoreboard at the time of his death:—

The following countries had toppled into the Soviet embrace: China, North Korea, Manchuria, Bulgaria, Estonia, Latvia, Lithuania, East Prussia, Poland, East Germany, Albania, Hungary and finally Czecho-slovakia.

Some countries were tottering—Indo-China, Italy. Some were uneasy—France, Indonesia.

On the debit side, one country had reversed actual if not theoretical direction—Jugo-Slavia; and one or two could be accused of looking regretfully over their shoulder westward—Eastern Germany and Albania, and Stalin's successors have recently relaxed pressure on these two.

By the time all this had happened the rainbow aura of the early United Nations days was fading. The West sat by and watched country after country disappearing behind the curtain. Finally, when democratic Czecho-slovakia disappeared in February, 1948, the West became alarmed into defensive action.

The Marshall Plan and finally NATO and associated agreements came painfully into being.

The Marshall Plan was designed for economic rehabilitation—to fill bellies. NATO was military—to put a rifle in the hand of the full-bellied.

There was no comprehensive Western plan in the spiritual or ideological sphere. Despite this failure, the signs are not wanting that Russia is losing the ideological battle with the West in the West. This altered climate of affairs is behind the present French unwillingness to ratify the European Defence Community.

There is no guarantee of course that we will not awaken one morning to find that Italy, France, Japan or Iran has passed behind the curtain of no-return.

There is no doubt, however, that the West is regaining confidence and

a feeling of being on firmer ground.

We have emphasised the importance of spiritual or ideological forces and we have said that the West has neither put forward any new ideology nor has there been any general spiritual revival or reaction. How, then, has the West triumphed?

We say that the West has survived rather than triumphed, and this is because of her technological strength and vigour and because she has been able to draw on an inheritance of Christian spiritual capital, and these have proved stronger than the heresy of Communism.

It may therefore be that in the Christianised countries Communism is on the way to becoming a spent and dated force with the West inoculated against any repetition of the heresy.

The East.

Assuming that the West has "been saved" from Communism, what is the position in the East. We must not forget that it was Lenin who said in effect that the road to world Communism "lies through Peking and Delhi."

What success has the West had in forcing its ideas and practices on the Orient, for there is no doubt that since the sixteenth century the West has been the arch-aggressor in the East.

Japan accepted Western technology and commerce, and partly because of her success in this sphere a militarism was nurtured which led to the downfall of the nation in the last war.

China absorbed Western political ideas which simply permitted corruption to operate on a greater scale. This became so large that it was a major factor in the fall of China to Communism, which promised a wholesale reform within the country. Communism can show that for a time it can hold down corruption. Whether or not it will give rise to corruption on a vaster scale is yet to be seen.

India, subject to Western domination for centuries, has had little time to recover from the effects of partition and establish her own pattern of life. The influences of Gandhi have done much to stop the advance of Western technology, which is only now moving into the country.

So far we have discussed only the things that operate on the surface of life, technology, politics and commerce.

We have stated our belief that ideals and religion are the real springs of life and have already commented on the Moslem creed.

The other major Eastern religions are Hinduism—Buddhism and Confucianism. All these religions are basically more tolerant, more fatalistic and less fanatical and dynamic than the branches of the Judaistic faith—Christianity and Islam. They are more specifically ways of life than religions as we understand them and they tend towards nationalism.

For a long period Christianity has sought to convert the East.

From about the year 636 A.D. Nestorian Christians began to penetrate into China.

The Mongols probably brought some Christianity with them when they overrode China because some of their leaders had already been converted. In both India and Japan

there are evidences of very ancient Christian settlements.

It was not until late in the sixteenth century, however, that a determined attempt was made to Christianise Eastern countries. The national reaction to this was in most cases violent. In Japan, for instance, Westerners were refused admittance, and the reopening of relations was accomplished only at the point of Western guns.

I think it can be said with truth that Christianity has made no widespread impression on the East, and that contact with the West has generally brought suffering, disillusion and a breakdown of the national complex.

The Eastern nations have shown that they can readily absorb Western technology and commerce and even the outward semblance of our political institutions, but the central core or spiritual element of Western life appears to escape them.

What is the reason?

Is it that the various sects of the Christian Church have tried to present to the East their own variant of the Christian faith using parochial Western forms of ritual, ethics and dogma? Should they in fact have stripped it of these incidental Western usages and presented it as a common world religion, retaining its spiritual basis and teachings but integrated into the culture of country, or is the Christian faith basically unsuited to the Oriental character?

We can simply say here that sectarian Christianity has not prospered in the East.

What, then, can the West offer to the East as a spiritual counter-claim to the ideology of Communism?

At present our help is limited to philanthropic schemes such as the Colombo Plan and regional military agreements. In other words, the dry bread of technology or militarism of the NATO type.

We affirm that this is not enough. Communism, thwarted in the West, has for many years been pressing its claims in the East.

It professes to offer these material advantages:

An example of how to obtain strength to stand up against the arch-aggressor, the West, as Russia has done.

A programme of complete collectivization and mechanization aimed at the common good.

A levelling of the existing inequality between the rich minority and the poverty-stricken majority.

All these things may prove extremely attractive to nations for whom a Colombo Plan only permits the existence of more mouths to be fed. Further, they are bound to a logical fanatical system that transports them to the realm of a synthetic religion or ideology.

Communism may prove satisfactory for an indefinite period of time, for we must remember that Russians who are aged 36 or less have known no other creed and apparently find it sufficient.

What, then, is our final summary?

West.

We have stated that we contend that the West has survived the challenge of Communism and has emerged superior. This is certainly more than she deserves, as her great energies over the last two centuries

have been absorbed not in spiritual but in technological advances.

East.

There is a spiritual vacuum in Western efforts to prevent the conversion of the East to the heresy of Communism.

In Christianity the West has a tremendous asset which has so far been unused, misused or abused, a common world religion which seeks to transform mankind.

If Christianity or some other spiritual force cannot be set free by the West, then it appears likely that as Eastern population and other pressures increase, country after country will fall by default into the arms of Communism.

We shall then have arrived with a vengeance at the title of our talk—"The West Versus the Rest"—to which we might add—the West Beware.

References.

Encyclopaedia Britannica.

"The World and the West," A. J. Toynbee.

"Comparative Religion," A. C. Bouquet.

Back of every significant achievement in Ordnance there is the story of a long and tedious process of trial and error—of building, testing and modifying — in an effort to determine whether a new item of equipment or a new weapon will successfully meet the established need. And during this long and tedious process we are always governed by the dominant consideration as to whether the item we come up with can be produced in sufficient quantity—and economically.

Major-General Elbert L. Ford.

BOOK REVIEWS

STRATEGY — THE INDIRECT APPROACH, by B. H. Liddell Hart (Faber and Faber Limited, 24 Russell Square, London).

LIKE many another thinker and prophet, Captain B. H. Liddell Hart has received more honour, and certainly more serious attention, from the stranger than from his own people. But, unlike most prophets, he has lived to see his predictions come to pass, to see his teachings accepted by the foreigner to the discomfiture of his own country and her allies. Indeed, in the whole history of warfare it would be hard to find a teacher whose theories so influenced the strategy and tactics of the armies which very nearly brought to ruin his own countrymen who had refused to listen to him. For the most successful leaders of the German Army in World War II —Guderian, Manteuffel, Rommel— have all acknowledged that from his writings they learned the strategy and the tactics which gave them so many brilliant victories in the first stages of the war. Is it too much to hope that now at last his countrymen will listen to him?

Let us make no mistake about the reasons for the state of the world today, the reasons why we walk in fear of war waged with the H bomb and other nuclear weapons. Maybe we would still be face to face with that possibility, but had our political and military leaders in World War II paid more heed to the lessons of history we might at least be in a much better strategical position. In confusing ends and means those leaders produced a victory as barren as any to be found in the whole story of mankind, a victory which gave us neither triumph nor security.

In his latest book Captain Liddell Hart has not produced a new nostrum for the solution of our present difficulties. His doctrine of the "indirect approach" was first published in 1929 under the title of "The Decisive Wars of History," and in 1941 a revised edition appeared as "The Strategy of Indirect Approach." The latest volume summarizes the author's researches and conclusions of his earlier works, brought up to date with a close study of the strategy of World War II and a review of the possibilities of the situation today.

Liddell Hart approaches military history as a scientist with a view to finding out if any constant factors can be discovered from a careful analysis of a great number of cases. From this study he concludes that, with the possible exception of very rare and unusual cases, the strategy of indirect approach, *at all levels*, produces, and in the nature of things

is bound to produce, better results than the strategy which seeks success by direct assault And by success Liddell Hart does not mean military victory only; he means a successful and satisfactory peace.

In addition to a scientific study of many wars from the days of ancient Greece to the recent conflict between Israel and the Arab States, the book contains chapters on the theory of strategy, the relationships between strategy and grand strategy, between the national object and the military aim.

In putting forward his ideas, Captain Liddell Hart is neither dogmatic nor obscure. On the contrary, he marshals the evidence and presents it to you in lucid and attractive prose.

"Strategy—the Indirect Approach" is a book which could be studied with profit by the political and military leaders of the West. It should certainly be studied by all soldiers who aspire to a professional horizon of respectable dimensions.

—*E.G.K.*

THE WAR IN KOREA, by Major R. C. W. Thomas, OBE (Gale and Polden Limited, Aldershot, England).

In a recent speech to the Congress of the United States the 79-years-old President of South Korea, Dr. Syngman Rhee, struck a note of gratitude when he said: "You saved a helpless country from destruction, and in that moment the torch of true collective security burned brightly as it never had before."

How South Korea was saved from aggression, and his suggestions for the future, are covered by Major Thomas in his description of the campaign in Korea in 1950-53.

The first campaign undertaken by the United Nations is still fresh in our minds. Much has been written about individual battles and acts of heroism, but here is a simple little book which describes the war as a whole.

The author relates how world opinion supported the Republic of South Korea when it was suddenly invaded by the North Korean People's Army, and the United Nations voted to send immediate military aid to assist in repelling the invaders. For the first time the United Nations pledged itself to defend the freedom of the individual state by the arms of the free world.

The ebb and flow of the campaign is clearly described, while General McArthur's dismissal and Syngman Rhee's obstructive tactics are briefly covered.

Although the author fails to paint any colour into the campaign, his discussion of the special lessons of Korea is of great interest at the present time. For instance, there is the ever-present problem of maintaining morale in a force drawn from many nations, fighting far from home under difficult conditions for what might seem to very many of the troops to be an abstract principle of no direct interest to them.

The problems of fighting in sub-Arctic conditions are discussed, and the conclusion reached that, with suitable training, clothing and equipment, fighting efficiency need not be impaired.

Major Thomas stresses the importance of the Principles of War,

and shows that despite the new weapons and modern techniques employed in Korea, the well-known principles proved to be correct.

This little book is recommended to the reader in search of a brief introduction to the Korean War.

—*J.G.S.*

WHITE COOLIES, by Betty Jeffrey (Angus and Robertson, Sydney, Melbourne and London).

Since this book has been on sale for some months, it may seem a little late to review it. But a good book is always worth talking about, and "White Coolies" is something more than just a good book. It is the epic story of the Australian Army nurses made prisoners of the Japanese in their sweep down through Malaya and Indonesia, a story which should become part of our national heritage.

Sister Jeffrey served with the 2/10th Australian General Hospital in Malaya and, with other sisters of the unit, she was evacuated from Singapore in the *Vyner Brooke* just before the island fell into the hands of the enemy. The ship was bombed and sunk, and after three days in the water she scrambled ashore in a mangrove creek on the coast of Sumatra. A few days later she and her companion were picked up by the Japanese and taken to the coolie jail in Muntok, where other survivors were already imprisoned.

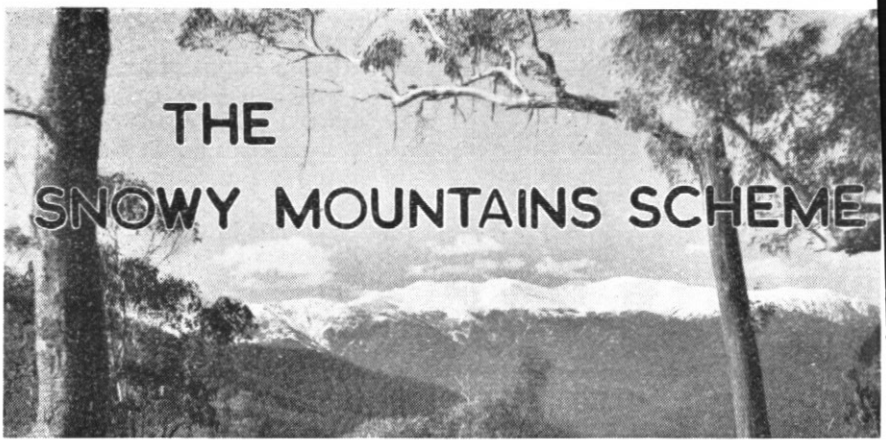
Sister Jeffrey's story is really the diary which she managed to keep throughout her long imprisonment. Its quiet, matter-of-fact language unfolds a tale of Japanese brutality, often expressed in the infliction of ingenious indignities and the violation of elementary decencies. The Japanese did not stop at trying to force these nurses to become their "girl friends," nor at making them clean out filthy sewers and do back-breaking labour in the blazing heat.

The nurses met the torments of their captors with quiet courage and a sense of humour which sustained them through three years of captivity. Living under appalling conditions, half naked, always desperately hungry and often ill, their spirit remained unbroken to the end. They tended their sick and buried their dead. Day after day, month after month, they forced their weakening bodies to the laborious effort required to just keep alive, and to help each other with kindness and thoughtfulness.

Since Sister Jeffrey's story is a diary there is a certain amount of repetition. This adds to the strength of the story rather than detracts from it, for life for those women was an endless repetition of suffering and indignity. The method of presentation, too, gives the reader a vivid impression of gradually failing physical strength and unbreakable spiritual endurance. Betty Jeffrey indulges in no heroics and no recriminations. The epic quality of her story lies in what she leaves unsaid.

"White Coolies" should certainly be read by the Australian Army as well as by the Australian public. For the soldier the story has a special interest, for it is a part, and an important part too, of the Army's proud tradition of service.

—*E.G.K.*



(Contributed by the Snowy Mountains Hydro-Electric Authority)

PART II

WORK on the Snowy Mountains Scheme began in August, 1949. Today, with its first hydro-electric project nearing completion and a further large group of engineering works in the hands of the contractors, the Authority is well on its way to fulfilling its present objectives of power production by the end of the year and the first diversion of water inland by 1959.

In 1949 there were no detailed maps of the Snowy Mountains. There were only two roads, one of them a narrow winding road to the summit of Mt. Kosciusko and the other leading through Kiandra, the ghost town of gold rush days. There was no accommodation for the hundreds of men who would soon be pouring into Cooma, the small railhead town chosen as the Authority's headquarters.

To add to the difficulties of its enormous task, the Authority was created at a time when there was an acute shortage of engineers and skilled and unskilled workmen as well as building materials and machinery. To avoid having too much effect on existing organizations, men were recruited in Great Britain, New Zealand and Europe and work began immediately on the Authority's first objective, the early production of power to relieve the shortages in N.S.W. and the A.C.T.

Pioneering work and intensive investigations began in the valley of the Upper Snowy River, where the Guthega Project, a relatively simple and accessible hydro-electric project, had been chosen to provide the first power from the Snowy River. The Authority spared no efforts to get this project under way and by September, 1951, a contract for its design and construction was let to Selmer Pty. Ltd., a firm of

Guthega Dam of the Snowy River.

Munyang Power Station. Penstock and

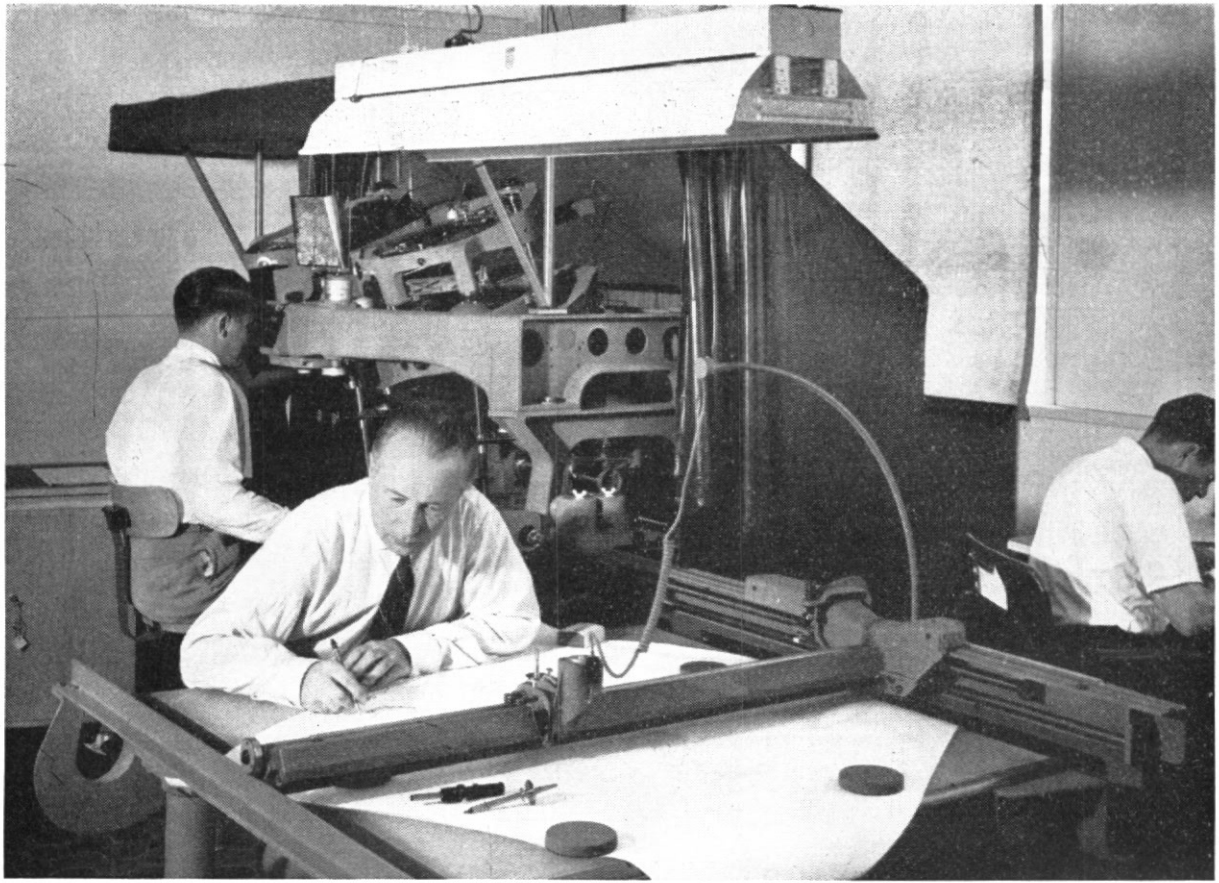
Norwegian contracting engineers. The timing of the preliminary work was such that the first vehicle to travel along the full length of the newly constructed Snowy Valley Road was the bus bringing in the first group of contractor's men, recently flown to Australia from Norway.

Today, nearly three years later, the contract is nearing completion. The 100-foot mass concrete dam at Guthega has almost reached its finished height. Excavation of the three-mile tunnel leading from the Guthega storage to Munyang, further downstream, was finished at the beginning of May this year. Weak sections of the tunnel are now being concrete-lined, while construction of the gate houses and the surge tank is proceeding at the inlet and outlet portals. At Munyang, where the tunnel emerges from the hillside high above the power station, the last sections of the steel pipeline are being placed into position. The welded joints of this pipeline, which will carry water from the tunnel to the turbo-generators in the power house below, are all subjected to tests with modern gamma-ray equipment. In the power house itself, erected by the contractor, the installation of two turbo-generators is well advanced. These generators, which are supplied under contract by the English Electric Company, are transported from Cooma on a giant road train capable of carrying loads up to 120 tons in weight. They are then lowered into position by a crane fitted in the power station roof. The design of the project allows for a third turbo-generator to be added when the other developments higher up the Snowy River are completed. Outside the power station in the switchyard, members of the Authority's forces are installing the transformers and switchgear. By the end of this year 600,000 kW. of electricity, sufficient to light thousands of Australian homes, will run from this switchyard through power lines carried by steel transmission towers which already link Munyang with the N.S.W. grid.

High on the ridges overlooking the Snowy River the laying of nearly 20 miles of reinforced concrete pipes, or aqueducts, for the Guthega Project, is well under way. These aqueducts will increase the quantity of water in the Guthega catchment by collecting the run-off which normally drains into the Snowy River downstream of the Guthega Dam. At the present rate of progress it is estimated that the aqueduct construction will be more than half completed by the end of this year.

While the Guthega project has been progressing towards its goal of harnessing the Snowy River, the centre of investigation and pioneering work has moved to the northern section of the Scheme, the diversion of the Eucumbene River into the Murrumbidgee via the Murrumbidgee's tributary, the Tumut. At the same time investigations have been going on all through the Snowy Mountains area to test every detail of the Scheme and to ensure that the Snowy River is turned inland to give the maximum economic amount of water for irrigation and power for industry.

As a result, over half of the 5500 square miles to be surveyed has now been mapped, mostly from aerial photographs. Other, more detailed survey work has been carried out for each of the projects scheduled for early construction. For survey work in particularly moun-



The Wilde A7 Mechanical Pl

ainous country the Authority uses three-dimensional photo theodolite amera. From the photographs taken y this equipment, as well as from erial photographs, maps are plotted ery quickly and accurately with a Swiss mechanical plotter, Wilde A7.

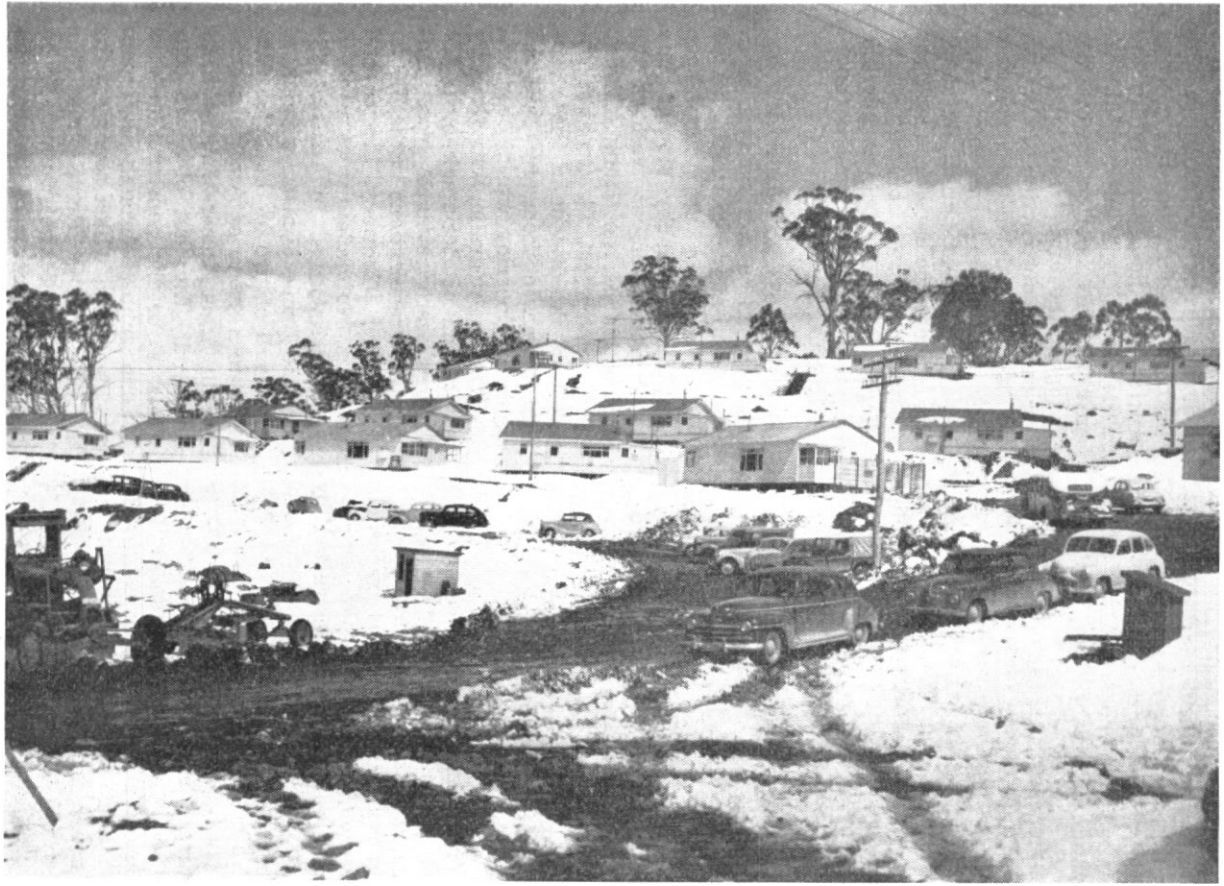
Other necessary data is provided by the Authority's team of hydrographers, who at present operate 74 stream gauging stations to measure and record the flow of rivers and creeks. To supplement this data, meteorological observations, including snow surveys, are carried on throughout the year.

At the same time a general geological survey of the mountains is being made by the Authority's Scientific Services Division with diamond drillers, providing rock cores for detailed investigation of each proposed construction site. The Scientific Services Division is also constantly employed with the solution of the many problems which arise during the design and the construction of each project.

In the field over 90 miles of heavy duty roads have already been constructed, as well as more than a hundred miles of access tracks. In addition, many miles of existing roads have been reconstructed by the Department of Main Roads and the Snowy River Shire. Many camps have been built, including two large townships, Island Bend and Cabramurra, where families are accommodated in comfortable houses prefabricated in Cooma and transported to their destinations during the summer months. In Cooma itself over 600 houses have been built to house the engineering, scientific, technical and administrative personnel required at headquarters.

Meanwhile, beside the Eucumbene River, work has begun on the Adaminaby Dam, one of the largest earth and rock fill dams in the world. This dam is being constructed for the Authority by the Public Works Department of N.S.W. Latest progress reports state that the driving of the tunnel to divert the river during construction of the dam has been completed and concrete lining is about to commence. Outside, on the river banks, the steep sides of the gorge have been stripped of vegetation, and construction of the upstream coffer dam to turn the river through the diversion tunnel has been commenced.

By July, 1953, the Authority was in a position to call tenders for a large group of works which include the diversion of the Eucumbene from the Adaminaby storage into the Tumut River, as well as the construction of the Tumut River's first power project, T1. Great assistance with the designs of these projects, which in themselves are the largest engineering works ever undertaken in Australia, was given by the Bureau of Reclamation, U.S.A. Tenders were received from construction organizations in the U.S.A., Scandinavia, Germany, France and Australia. No tenders were received from British firms. In April of this year the Prime Minister announced the award of two of the three contracts to a group of American contracting firms, Kaiser-Walsh-Perini-Raymond. The first of these contracts is for the construction of a 14-mile tunnel through the main dividing range which separates the the Eucumbene River from the headwaters of the Tumut River. The second consists of the construction of a high concrete dam across the Tumut River at Tumut Pond to control the flow of water as it leaves



Cabramurra, the highest village in Australia

he Eucumbene-Tumut tunnel. This ontract also includes a short tunnel eading from the Tumut Pond stor- ge area to the site of the huge nderground power station known s T1. The vertical shaft connecting he end of this tunnel with the T1 ower station and the construction f the power station itself makes p the third contract which was warded to a group of six French ontracting firms, Compagnie Indus- rielle de Traveaux, Entreprise Fou- gerolle pour Travaux Publics, Societe Generale D'Entreprises, Etudes et Entreprises, l'Entreprises Industrielle, Societe Nationale de Traveaux Publics.

Both these contractors have already begun to collect men and machinery. Camps built by the Authority await them, power supplies have been laid on, roads and access tracks lead to camps and construction sites. Everything has been prepared to ensure that by 1959 the Eucumbene will be turned inland, providing 320,000 kW. of electricity as it passes down the Tumut River to the irrigation areas of the Murrumbidgee Valley.

With a section of its force detailed to supervise the execution of this work, the Authority has gone on to investigate and prepare the projects of the future, namely, the diversion of the Tooma River to Tumut Pond and the construction of T2, the second underground power station on the Tumut River. Surveyors have moved in for detailed surveys, diamond drillers have set up their rigs to pull rock cores from tunnel lines and power station sites, and hydrographers continue the persistent compilation of data on the flow of mountain water, the raw material of the Snowy Scheme.

By the end of 1961 these works, now in the investigation stage, will step up the Scheme's output to 500,000 acre feet of additional water for irrigation in the Murrumbidgee Valley each year and a power capacity of 660,000 kW. from three of the Scheme's 17 power stations.

The mighty task of turning the Snowy River inland is gathering pace.

Mess Etiquette

Major-General R. G. Pollard, DSO,
Quartermaster-General.

IN Officers' Messes of each of the three Armed Services, customs, procedures and unwritten laws govern the conduct of officers. These are commonly known as "Mess Etiquette."

In the past, the practice of this etiquette has been largely responsible for the high standard of manners and behaviour observed in the Army, and also been a contributing factor to the high standard of discipline attained. In view of this and the fact that it is the aim of all officers to ensure the maintenance of those high standards, the purpose of this article is to record the more important customs and procedures observed in Australian Army officers' messes. Although there may be some controversy on certain observances, the customs and procedures described herein are irrefutable from the Australian Army point of view. Therefore, they may be regarded as a sound guide for Army officers, particularly those newly appointed, both in Australia and when on attachment to the British Army.

It is probably fair to say that most controversies arise from the fact that although the etiquette practised by each Service is similar, they are not identical. Further, even customs common to all Services are not always uniformly observed. This state of affairs is the natural outcome of each of the Services originally adopting the basic etiquette of their corresponding United Kingdom Service.

Although the Australian Army mess etiquette is based on that of the British Army, this does not justify the adoption of any of the special points of etiquette peculiar to a particular British Army Corps or Regiment to which the Australian counterpart may be affiliated. The reason is obvious, for these special customs and privileges are founded on regimental traditions and privileges, built up and conferred over the centuries. Consequently, there are marked differences even between Regiments of the British Army, whereas there is little sound reason, if any, for material divergencies in mess customs and procedures within the Australian Army.

It is proposed, therefore, to cover in this article those points of mess etiquette that have been generally accepted throughout the Australian Army. The subject will be dealt with in two parts:

Part I: General.

Part II: Dinners, Mess Dinners and Guest Nights.

Part I—General.

The Officers' Mess.

The Officers' Mess plays a vital art in the life of a Regiment and in Army life generally. In it, officers of all ranks meet on an equal social footing. Although it is the home of all officers of the Regiment, it is more particularly the home of resident members.

Owing to the special conditions appertaining to Army life, as distinct from civil life, certain rules are observed for the actual conduct of a Mess. These rules vary somewhat in different Australian Army Messes, although all are based on a Military Board pamphlet entitled: "Rules for Officers' and Sergeants' Messes," which is available to all officers. It is not proposed to deal further with this aspect, apart from mentioning that all officers are required, immediately on joining a Mess, to make themselves fully conversant with the rules governing that particular Mess.

Dress.

The orders of dress to be worn on official or formal occasions are always laid down. These are adhered to strictly whether it be uniform, dinner suit or lounge suit.

In addition, there are certain unwritten laws. For example, officers do not go into supper in the clothes in which they have been playing sport; a combination of uniform and plain clothes is not worn either in or out of doors.

As the turn-out and bearing of its members are indicative of the efficiency of the Regiment, officers are required to set the example by being properly and decently dressed at all times, both in uniform and when in plain clothes.

Hats, caps, greatcoats, Sam Brownes and waist belts (other than cloth belts) are always left in the cloakroom or hall. The only exception to this rule applies to the Duty Officer, who wears his waistbelt in the Mess. This practice originated in the days of the Sam Browne, when it was customary for the Orderly (or Duty) Officer to wear his Sam Browne at all times as a means of identification.

Mode of Address.

The formality of the parade ground is not taken into the Mess. Nevertheless, although formality is reduced to a minimum, due respect and deference is always shown to senior officers.

It is not possible to lay down hard and fast rules regarding mode of address within the Mess, as it differs between messes, but the following may be taken as sound, guiding principles.

In the Mess, officers usually address those of equal or junior rank by surname or christian name, omitting rank. In most Australian messes it is normal to use christian names. This practice is usually encouraged and sometimes extended to include those one rank higher, as it helps to develop the family spirit within the Mess.

Senior officers are addressed by rank and name or as "Sir," but never by rank alone. The use of rank alone is an American rather than a British practice.

It is not usual for rank to be added when addressing officers only

one rank senior. In fact, in some messes, all officers, other than the Commanding Officer, are addressed by their surnames or christian names, as appropriate. The Commanding Officer, however, is always addressed as "sir."

Mess servants are addressed, in the case of NCO's, by their rank, and in the case of private soldiers as "Steward."

Conduct.

By his conduct, an officer can bring credit or, more readily, discredit to himself, his Regiment and the Service to which he has the honour to belong. All officers, therefore, are in duty bound to learn and conform to Mess customs, to participate fully in mess activities and to uphold the tone of the Mess, which reflects the tone of the Regiment.

Modesty in junior officers is far more becoming than over-assertiveness.

Courtesy is expected and observed at all times.

When the Commanding Officer or any officer of equal or senior rank to him, or a visitor, enters the Mess, all present stand up. Normally, the Commanding Officer forestalls this movement by some phrase such as: "Good evening, gentlemen. Please don't move!"

Officers always say good morning to their seniors on first meeting in the morning. Also, in entering the ante-room before dinner, they bid good evening to the Commanding Officer or senior officer present.

Complaints are made not to the Mess Staff but to the Mess Secretary, who is empowered to and takes all necessary action.

Notes are not written nor are letters or telegrams opened and read a the Mess table, except with the per mission of the President or of neigh bouring officers depending o whether the meal is formal or in formal.

"Fines."

The infliction of "fines" on mem bers for minor irregularities o breaches of Mess etiquette is highl improper. Similarly, fines, whethe in money or wine, are not levied o such occasions as marriage or pro motion.

Punctuality.

Punctuality is a must, regardless of whether the occasion is official social, sporting or a meal. Nothing disorganises a Mess more than the slovenly habit of unpunctuality.

Conversation.

"Shop," i.e., details of daily routine, discipline, drill, etc., is not a suitable subject for general discussion within the Mess.

Subjects of professional interest and of a general service nature, such as military history and current affairs, are not classified as "shop." The discussion of such subjects is encouraged.

Officers are not rebuked in the Mess for past misdeeds. Therefore, a member's conduct within the Mess should be such as to preclude any necessity for it. It is not normal for an officer to be reprimanded in the Mess.

Women are not discussed in the Mess, and ladies' names are never mentioned at the mess table. Bad language and risque stories are not permitted.

Controversial and personal subjects, such as religion and politics, are not discussed. Criticism or discussion of senior officers, fellow

fficers or members of their families also highly undesirable.

Smoking.

The old custom of not smoking in he ante-room during the last half-our before dinner is not always dhered to now. The observance of his custom is desirable only when he dining-room adjoins the ante-oom.

At breakfast, smoking does not ake place until all have finished heir meal.

At lunch and supper, smoking is permitted in some Messes but not in others. Newcomers or visitors to a Mess, therefore, are advised to ascertain the local practice.

The custom regarding smoking at formal meals is covered later under the heading "Dinners, Mess Dinners and Guest Nights."

Meals.

Breakfast, lunch and supper (as distinct from dinner) are always informal meals. The hours between which they are served are laid down either in the Mess Rules or on the Notice Board. These times are scrupulously observed.

For these meals, officers sit anywhere at the table, except in the seats reserved for the President and Vice-President. Sometimes, however, the Commanding Officer also has a preference for a particular seat.

The President sits at the head and the Vice-President at the foot of the table. At dinner, it is usual for the Commanding Officer to seat himself between one-third to half of the way down the table on the left of the President.

Dinner is a formal meal for which officers assemble in the ante-room at least ten minutes before the time laid down.

At informal meals, i.e., except at Dinner, Mess Dinners and on Guest Nights, officers are served with each course when ready. They may leave the table when they have finished, without asking permission of the President. At dinner, officers do not leave the table without permission, until after the port has been passed around once. At Mess Dinners, officers await the passing of the port for the second time.

Officers arriving late for a formal meal tender their apologies to the President and request his permission to take their seats.

Dining President and Dining Vice-President.

In order to give experience to all officers of the Mess, the Mess President appoints a Dining President and a Dining Vice-President for a specific period. A roster is maintained for this purpose. In small messes, a Dining Vice-President is not necessarily appointed other than for Mess Dinners and Guest Nights.

The Dining President has nothing to do with the management of the Mess, but takes the seat at the head of the table and assumes the duties of the Mess President at table.

At dinner, the Dining President enters the dining-room first and is the last to leave the table. The Dining Vice-President is the last to enter the dining-room and, except for the Dining President, last to leave.

The procedure adopted for Mess Dinners and on Guest Nights will be dealt with later.

Drinks.

The general practice is for liquor not to be served in the Mess before 11 a.m. or in the ante-room during formal meals. It should never be served in bedrooms or in the bar. Additional restrictions may be imposed at the discretion of the Commanding Officer.

Nowadays, there is a chit system in practically all Messes. Officers sign or hand in chits for all purchases as made.

In some Messes, owing to staffing difficulties, there is an "after hours locker." Generally speaking, however, it is found that these cause more trouble than they are worth.

In recent times, unfortunately, there has been a relaxation of the "no shouting" rule. While this rule was strictly applied an officer never felt obliged to have a drink on the grounds of sociability. Everyone ordered and paid for his own drinks. He did not then ask others present to drink with him and he should not feel obliged to do so now. This rule is still strictly enforced in at least certain British Regiments. There are, of course, certain occasions, such as special celebrations in connection with promotion, birthdays, etc., when all present normally join in. These, however, are not permitted to develop into "drinking bouts," nor is any member obliged to provide drinks to mark any such occasion.

Where "shouting" is permitted, it is carefully controlled. Normally "parties" are restricted to a maximum of four officers.

The same general principle applies on Guest Nights. Members pay for themselves and their private guests. Official guests are always a charge against the Mess. However, ther are no hard and fast rules in th regard. Very often, the cost of pr dinner drinks and the port, an sometimes the other drinks serve during dinner, are pooled and born equally by all members present. I is normal, however, for officers to b responsible personally for thei after-dinner drinks and for those o their guests; although it is not ex ceptional for one or two rounds o after-dinner drinks to be provided a a charge against the Mess, especiall if all present are joining in the same game or entertainment.

It is not normal for officers to press drinks on others, especially on junio officers or guests. To do so is most reprehensible.

Hospitality.

Members may introduce guests to the Mess at any time. It is the duty of all members to make welcome any guests, regardless of whether or not they are known to individual members personally.

Should a guest arrive before the member who invited him, the guest is greeted and entertained by those present and efforts made to locate the member concerned. Under no circumstances is a guest neglected or ignored.

Bearing in mind that the Mess is the home of all members, guests are carefully chosen and restricted to those who are above criticism and acceptable to the Mess as a whole.

A member always introduces his personal guests to the Mess President and Commanding Officer, if present, and to the other members of the Mess.

It is a custom of long standing that Warrant and Non-Commissioned Officers and soldiers are not invited

o the Mess, except that, as ex-ained later in Part II, Loyal Toast Australian Army, the Bandmaster, gardless of his rank, may be in-ed into the Mess.

Visitors.

All members of a Mess ensure that sitors feel they are most welcome. embers receive a visitor by stand-g when he enters the ante-room. isitors are asked to sign the isitors' Book, introduced to the ficers present, given a seat and fered refreshments. In a large ess, in order to avoid embarrass-ent, visitors are not introduced to o many at a time. Initially, intro-uctions are usually restricted to the ess President and Commanding fficer, if present, and to three or our other members.

It is normal for the Mess Presi-ent to receive all official callers on he Mess. In the event of the Mess President not being present, the enior officer present receives the isitor and, if possible, notifies the Mess President.

Should no officer be present, the Mess Sergeant or Steward notifies the Mess President or Secretary.

Mess Entertainments.

In order that members may be afforded the opportunity of return-ing hospitality, it is customary for Messes to hold functions for this purpose. Usually such entertain-ments, other than Guest Nights, take the form of a dance, cocktail party, garden party or a Ladies' Night.

These functions are arranged by the Mess Committee, after they have been approved by the Commanding Officer. As these are Mess functions, all members are equal hosts to all guests; therefore, all participate. However, should the financial position of any member preclude his participation, Commanding Officers give the member their special countenance and protection. It is the duty of every member to ensure that each guest is adequately looked after and that none is neglected. Members with a personal guest or guests are not relieved of this responsibility. Normally, all guests are received on arrival by the Commanding Officer and the Mess President who, in the case of a mixed party, are accompanied by their wives.

Should a guest arrive after the reception of guests has ended, he or she is introduced to the Commanding Officer and Mess President immediately on arrival.

Wherever possible, a ladies' room, or annexe, with a separate entrance, is provided. Except in a Mess having male and female members, the general rule is that ladies are not invited into the Mess proper other than on occasions at which the attendance of ladies has been approved.

Although it may be convenient at some mess dances or balls to arrange parties by tables, members are still expected to move around, mix and dance with guests outside their own particular party. As it is inexcusable to leave a lady guest unattended, a member introduces or hands over his partner of the moment to another member or male guest before leaving her. For this reason, a well-arranged dance or ball always has a surplus of men, whose main duty it is to see that there are no ladies sitting unattended.

The reintroduction of programmes at Mess balls would do much to obviate many of the more prevalent breaches of etiquette.

Gambling.

Gambling is prohibited. Authorised card games, such as bridge, are played only for low stakes. In this regard, a member is never required to play for a stake higher than that nominated by him. Money is not passed between members. Winnings and losses are entered in the Mess Card Book and credited or debited, as applicable, in the monthly Mess accounts of the members concerne

Dogs and other pets are ne allowed in a Mess.

Closing of Mess.

The last officer to leave the M at night ensures that action is tak in accord with Mess Rules, e radiators and lights are switched and fires left in a safe condition

(To be continued)

Personnel—that is jargon for officers and men.

—*Winston Churchill.*

Give and Take

Captain J. H. A. Young, MC,
School of Infantry.

THE art of living is sometimes said to be dependent upon the ability to give and take. In the material sense the words have rather definite meanings. If an officer gives an precis upon a certain subject to a fellow officer, he, the giver, has ten less in his stock, and the taker has ten more in his.

In a figurative or psychological sense, however, the terms describe a transaction in which the decrease or the increase resulting from a give and take transaction either is non-existent or has no relation to the total stores possessed before and after.

Some random examples in this sphere are the divergent terms, "loyalty," "the measles," and "credit." One may give without stint of loyalty without diminishing the supply originally possessed. Indeed it may feed upon itself and grow by what it feeds upon. During childhood, playmates may be given the measles and the original donors still have them left in undiminished quantity. Obviously there is more in the concept of giving and taking than addition and subtraction.

The chartered accountant indulges in the giving and accepting of "credit" with great caution. Credits involve debits. A credit on one set of books may be a debit on another set of books. Too liberal a disbursement of credit may precede bankruptcy proceedings.

But in the field of human relations it is far different. A credit on the taker's books may well be a credit on the giver's books. In the English language the word "credit" has been undergoing changes in meaning for some time; new situations have arisen to give it a change in meaning. But some of the old meaning has been carried over into the new situation.

It is to my credit if I invent newer and better ways of doing things, devise simpler and more efficient methods. If my record shows many such creditable items, my chances for recognition and promotion (?) are enhanced. Therefore, I become jealous of anyone who is attaining greater credit with my superior officers. I am alert to claim credit wherever possible, and develop the mistaken notion that if I "give credit" to another I am in some way debiting my own account by a like amount, or at the least failing to add to its credit. A junior officer or NCO makes a suggestion which I instantly recognise as excellent. I wonder why I never thought of it myself. I know it will be welcomed

by my superior officers. It is a very creditable suggestion. To put it forward will reflect credit upon me. It is expecting a good deal of me to ask me to give up this chance to add another item to my credit side with this unit. Why should I build up another's reputation when I have the chance to increase my own? I will send it on as my own idea and add to my prestige, as I have every right to do since I am responsible for all that goes on under my supervision. The psychology of justification is as interesting as it is insidious.

And it is just at this point that the old meaning of the word insinuates itself into the picture. Under its influence action may be taken as though credit in this sense has to do with something that is of definite and fixed amount and limited quantity. What somebody else gets I must of necessity lose or fail to get.

Ignorance of AMR & O is no excuse in military law. It is equally true in regard to the law that governs the gaining and the giving of credit. The law of assigning credit, moreover, is unique. It states that the more we attempt to pass credit on to others the more adheres to ourselves. The more earnestly one tries to impress upon one's superior officers that the credit for a new idea belongs wholly and entirely to some subordinate officer or NCO, the greater is the portion of it which will adhere to one's own record. Loyalty or the measles can be given without reducing the original supply, but at least one has to have them before they can be given away. Credit is unique in that it can be obtained where none previously existed by the simple process of trying to give it to someone else. This is one of the few things in life that we can hand over to someone else without having it in stock; and yet in the end we may have as much for our own as we gave away.

Under all these circumstances it is very difficult to understand why anyone should steal credit from another. Yet in many sections of service and civilian life the crime of stealing credit causes deep dissatisfaction and disgruntlement. An officer or NCO who has had the experience of putting forward a good idea, which was turned down as something valueless, only to have it brought forward some weeks later as the idea of the supervising officer who rejected it is not likely to bring forward too many good ideas in that unit in the future. Credit can be stolen, but the person who grabs the credit tends to dry up the stream at its source. The tendency in the future will be that this particular supervising officer will have to depend upon his own ability to produce ideas. His subordinates will hold on to their ideas because his ignorance of human behaviour will force them.

Actually, while credit can be passed on to those below you and I, the process of passing credit generates its double, which remains with us. Progressive units and sub-units see that credit is placed where it belongs, with the giver and the taker.

There is only one excuse for the bad habit of credit-grabbing — IGNORANCE.

Note.—Full credit for the inspiration for this article must go without stint to Albert Walton, of Delaware, U.S.A.

RED AIR POWER

THE Soviet air forces, according to the estimate of General Guenther, Supreme Commander of the Allied Powers in Europe, consist of about 20,000 aircraft. (There is no separate Air Force as such.) Most of these, about four-fifths, are tactical and are attached to the various groups of Soviet armies. The tactical aircraft are grouped into Air Armies of about 3,000 machines and placed under command to the ground forces' commander.

The small proportion of planes not included in the Air Armies are, with the exception of the Naval Air Arm, under the direct disposal of the Ministry of Defence. These are in six groups, namely, the Long Range Air Force, the Anti-Aircraft Defence, the Civil Air Fleet, the Airborne Troops Allotment, the Arctic Air Force and the MVD Air Force.

The Naval Air Arm is entirely land-based and is divided into four groups, one of which is under command to each of the four fleet Admirals—Baltic, White Sea, Black Sea and Far East. Its function would be to provide fighter cover for the fleet, whose role is envisaged as that of extending the flank of the ground forces.

The Long Range Air Force, consisting of a few hundred strategic and medium bombers, is based on Europe and the Far East. Its function is purely offensive and it is capable of delivering bombs on targets in any part of the United States.

In the Anti-Aircraft Defence are all the fastest and most modern of the Soviet high-altitude interceptors. They are located in three main areas —the Moscow and Leningrad neighbourhoods and the oil region of the Caucasus.

The Civil Air Fleet in time of war would be taken from its normal commercial function to provide transport of men and materials for the armies, air forces and airborne forces and for communication over the great distances of the Union.

The Airborne Troops Allotment consists of specially designed troop carriers, paratroop carriers, or of civil planes adapted for either role.

The Arctic Air Force supplements the radar defence screen in the north and consists of reconnaissance and interceptor aircraft based along the Arctic coast but mainly concentrated at the eastern and western extremities.

The MVD or Security Forces have their own small air force of light transports for communication.

Soviet Theory.

Russian staff schools, while devoting some attention to strategic bombing and fighter battle, stress mainly co-operation with the ground forces and with naval forces as an extension of the land war. The war, they say, will be won on the ground. Hence the bulk of the aircraft is of a type suited to support and pro-

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—From "Irish Defence Journal."

tection of the armies—fighter bombers, ground attack, and fighter defence machines. The command and co-ordination are designed along much the same lines as in our own artillery practice. With the Russians, air power is considered an extension of the ground artillery. Air units are composed, organised and trained to find and attack enemy tanks, battery positions, reserves and supplies, and to impede enemy movement on roads. Some units of fighter aircraft are trained to protect their own troops from similar attack and from observation, and as a secondary role to join in the ground attack when possible.

For two reasons the opposite theory, traceable to Douhet, that war can be practically decided by air power, gained little favour with the Russians. First, their vast manpower resources give them a great advantage over their smaller neighbours, and casualties are of small importance to a people who place material above human values. Secondly, Russian air theory originated with the German teachers who built up the Soviet Air Force in its early years. The Germans themselves, engaged in rebuilding their great land power, were little impressed by the Douhet theory, and confined their air strength to tactical bombardment and reconnaissance roles. A strong strategic bomber force or even a great fighter defence command had no place in their creed of air power. The German participation in the development of the Soviet Air Force was not entirely for the benefit of the Russians; it was by training with Russian and other forces in the years after the First World War that they escaped the restrictions of the Versailles treaty. After some years spent on such "missions" abroad the German officers returned to build Hitler's Luftwaffe and test th theories against their former R sian pupils in Spain.

It is only of late years that t Russian Ministry of Defence has b gun to develop the strategic air a tack, and to design and opera long-range bombers. The same true of the fighter defence agai enemy strategic bombing. The dea of Stalin, who was insistent on t old theory, and the development nuclear bombs have hastened the developments. Germans are aga prominent in the development Russian air power, but this tim wholly on the technical side.

Models.

Russian planes may be considere under the headings of fighter fighter-bombers, strategic bombe and transports. The principa fighters in general service are th single-seater jets, MiG-15, LA-1 and YaK-15.

The MiG as seen and encountered in Korea has a speed of 670 m.p.h. but operates efficiently in one function only, that is, as an interceptor at very high altitude in reasonably clear weather. It is reported, however, that an all-weather version is being developed. The MiG-15 is in service generally and has been allotted to the satellite countries, Poland, Czechoslovakia and North Korea. This machine has been in squadron service since 1949.

The LA-17 is a similar machine of a few feet larger span and length; it can be recognised by its high wing (the MiG-15 is mid-wing). Its maximum speed is about 640 m.p.h.

Unlike the foregoing, which have swept-back wings, the YaK-15 has perpendicular tapered wings; it has

engine unit under the fuselage, reas the others have the engines oard.

new fighter stated to be faster n the MiG-15 has been reported ce 1951. It appears to be very ilar to the Focke-Wulf-Ta-183 has the engine slung below the elage. Reports have also been re-ved of a twin-jet night fighter chine, with the engine slung from wings. Of these two aircraft fur-r information must be awaited. th, if available, are of the type ich would be retained for the hter defence of cities and impor-t industrial installations and uld hardly be seen among the ces on the frontiers.

The standard piston-engined hters in service are the IL-10 two-ater close support and reconnais-nce and the LA-9 and LA-11 gle-seat fighters.

The standard attack bomber at-ched to the ground forces is the U-2, similar to the old American -26. A high-altitude reconnais-nce plane of the same design is e TU-6.

Two types of twin-jet light bomb-s are in service, though not yet large numbers, the TU-10 and the -28. They are similar in appear-nce and performance, and have een likened to the British *Can-erra*. Both these machines are in ervice in Germany and in the Far ast.

The Long Range Air Force is mostly composed of TU-4's, which is the Soviet copy of the four-engine *Superfortress* (B-29). This machine has been used to experiment in lift-ing and initially transporting the MiG-15. The fighter could thus con-serve fuel and disengage at high altitude to beat off enemy fighters.

Pictures of what are described as new Soviet bombers appeared re-cently in the American press. They are identified by the magazine "Aviation Week" as the Il-38 and the TU-200. The latter, powered by six turbo-propeller engines on swept-back wings, resembles the American B-36 and has a top speed of 465 m.p.h. The other is similar but smaller; it has four engines and a top speed of 490 m.p.h. Both can operate up to 50,000 feet and are cap-able of making the round trip from Russia to the U.S. and back. Planes of these types were reported in 1952 by Mr. Finletter, U.S. Secretary for Air, and General Vandenberg, Chief of Air Staff.

The principal Soviet transport aircraft are the TU-70, a transport version of the TU-4 (B-29), the IL-18 (C-54), and the military version of the IL-12, standard medium-range airliner.

Production.

Russian aircraft production origi-nates with three agencies co-oper-ating under the Ministry of Aircraft Production. These three agencies are the Aircraft Design Agency, the Aircraft Engine Agency and the Metallurgical Agency. Construction is distributed among 360 factories, of which 85 produce airframes and 30 engines only. The remainder are for assembly and testing and for the production and fitting of accessories and electrical and electronic devices. Overall production of military air-craft is estimated to be numerically 1½ times the combined production of U.S. and British factories. From one-third to half the total Russian output comes from a group of fac-tories east of the Urals. Production of the MiG-15 alone is estimated at 450 per month.

Manpower.

The estimated strength of the air forces is over 500,000 flying and ground personnel. The service of non-commissioned officers and men, which starts at 19 years of age, is three years. Good men may have this period extended indefinitely. On completion of Regular service all are placed on the reserve until 50 years of age. Reserve training entails from one to three months' service annually. The popularity of flying, gliding and parachute jumping among the young civilian population ensures that suitable material for air units will not be in short supply.

Dispositions.

The Air Armies mentioned earlier, which comprise about 80 per cent. of the air forces as a whole, belong to two main groups, those of the Far East and those attached to the Central Asia and European armies.

The Far East force, about one-sixth of the Air Armies, is quite self-contained; it has its own factories and supply system, and situated near its fields are the Strategic, Naval and Arctic air forces already mentioned.

The European and Asiatic air armies are attached, in groups of t armies (that is about 2000 planes), each of the remaining five grou army groups, namely, those of t Baltic, Central Europe, Balka Caucasus and Central Asia. T bulk of the Strategic Air Force believed to be located in N Siberia, the corner of the U.S.S. which is nearest to the Americ continent.

The basic air unit is the regime of 30 to 35 machines according function, whether fighter, grou attack or bombardment. In wa time, intermediate formations, su as air divisions or air corps, a called into being for specific task but the number of regiments in eac would vary according to the natu and importance of the operation.

Besides the forces in Soviet hom territory there is a formation i Germany, called the 24th Air Army operating from some 18 airfields i Germany and Poland. There ar also regiments or groups in Austri and the Balkan countries.

Finally, the satellite countrie have air forces directed by Russia officers and equipped with Russia jet and other machines.