



# ASSEGAI



**THE MAGAZINE OF THE  
RHODESIAN ARMY**

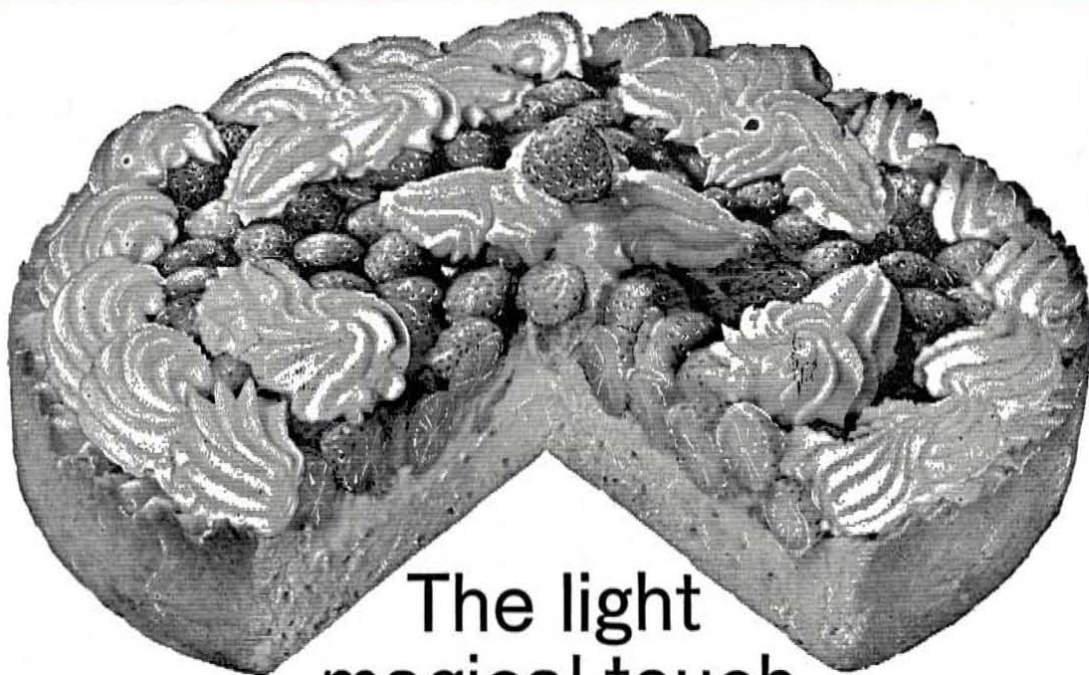


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N.A.T.O. AND S.A.L.T.

VOLUME THIRTEEN No. 2 — 15 JUNE 1973



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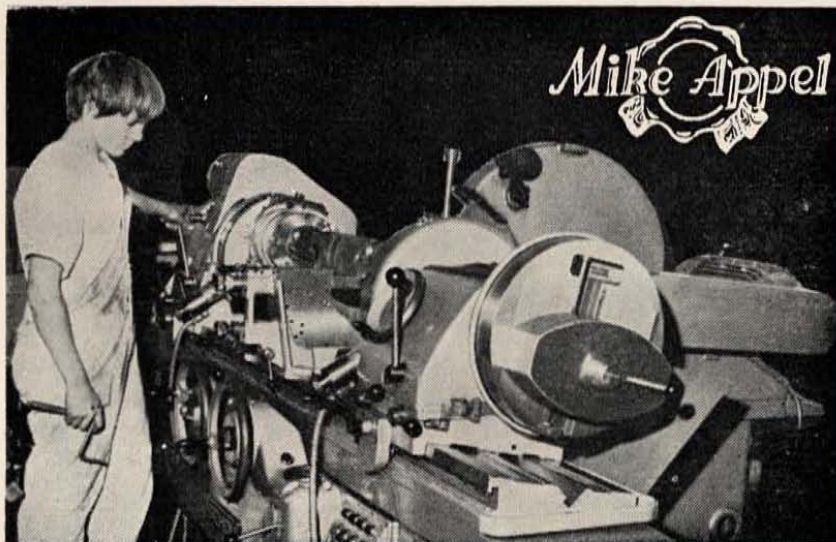
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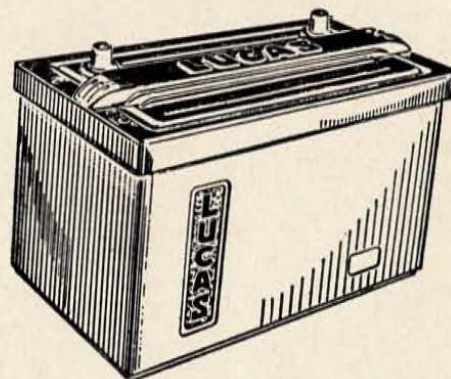
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# ASSEGAI

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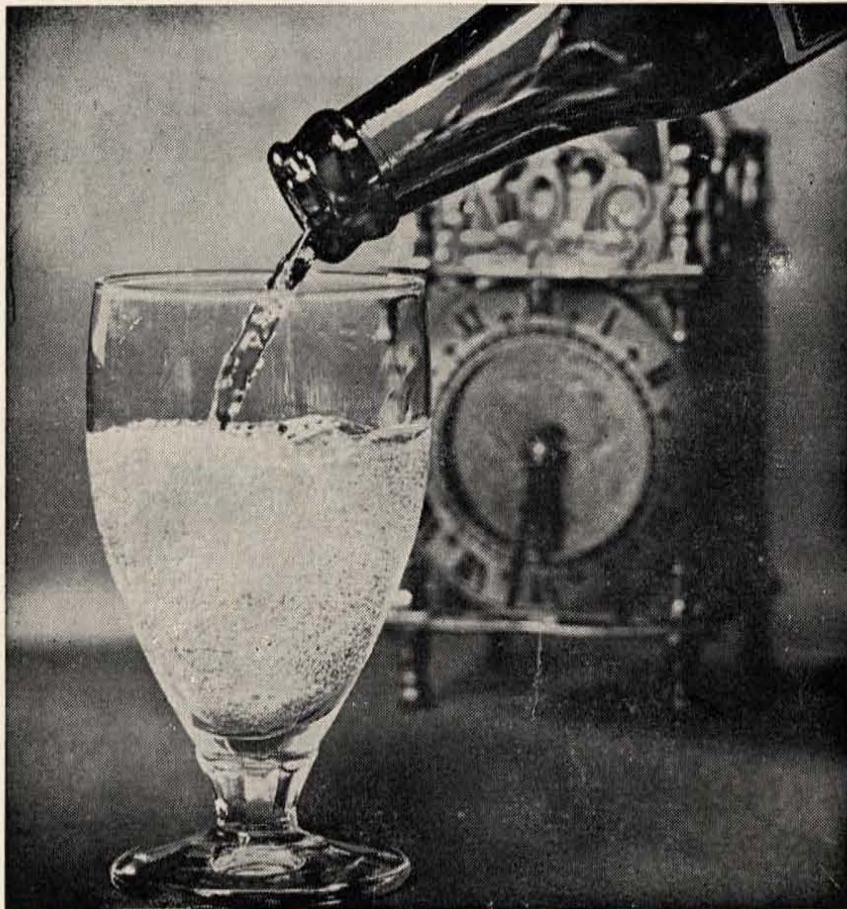
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# EDITORIAL

Small arms, weapons fired from the hand or shoulder, are, strangely, the evolutionary products, rather than the ancestors, of heavy ordnance. For the latter was known as early as the first quarter of the 14th century, whereas the fire-arm, small and light enough to be transported and operated by the individual soldier, does not appear until that period was drawing to its end.

The first of these were simple tubes of iron, their (closed) butt-ends prolonged into hollow sockets into which were driven wooden or metal billets held under the armpit, or rested on the ground, while the piece was being discharged. From this small beginning, over the centuries developed the rifled barrel and the rimmed, semi-rimmed and rimless central fire cartridges.

Dating to around 1900, efforts to develop semi-automatic rifles were seriously undertaken in many countries. In such a weapon, part of the energy of discharge is employed in carrying out the function of ejecting the fired case, inserting a new cartridge into the chamber and cocking the firing mechanism, relieving the operator of these duties and allowing him to devote all his faculties to aiming the weapon.

An article evaluating the Armalite AR18, probably the most advanced and sophisticated infantry weapon manufactured today, appears at page 20 in this issue.

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# DER BUNDESGRENZSCHUTZ: OVERLOOKED STRENGTH

By F. L. Grives

The post-World War II commentary on German rearmament and Western defence strategy has largely ignored the military implications of West Germany's first national armed force, the Federal Border Guard.

On 14th January, 1970, Federal Chancellor Willy Brandt submitted a government "Report on the State of the Nation to the Bundestag". Attached background material noted one of the most tragic and persistent problem areas of the post-World War II European politics:

"The demarcation line between the Federal Republic and the GDR extends 1 346 kilometres from Lubeck Bay to the Czechoslovakian border east of Hof. It splits Germany and in its perfection as a guard against the Federal Republic is without parallel in the world . . .

It has . . . torn asunder the economic, political and cultural fibres of the nation's life. At a time when in the rest of Europe travel restrictions are becoming more and more relaxed—even between states under the influence or belonging to either the East European or West European Blocs, and thus giving more and more free rein to the ebb and flow of political, economic, cultural and human contacts—barbed wire, mines and trenches run along a kilometre-wide dividing line between the two parts of Germany".

Whatever the potential future implications of Mr. Brandt's "Ostpolitik", the East-West German demarcation line has come to resemble a hermetically sealed "international border"—a dreary reminder of the Cold War. While the importance of this border has largely been eclipsed by news headlines from Berlin, the Middle East, South-east Asia and elsewhere, its history is no less significant.

The story of the border is one of infiltration of Communist agitators and other unauthorised persons into West Germany, of harassment (and outright kidnapping) of West German farmers by East German "police" units, and of the bullying of East German citizens living in the border area—including the occasional shooting of those caught trying to flee the "Worker's

Paradise." The demarcation line has also been part of the larger problems of German rearmament, East-West Cold War tensions and NATO-Warsaw Pact confrontations.

To help bring stability to the sensitive border area, the "Bundesgrenzschutz" (BGS), or Federal Border Guard, was created in West Germany on 16th March, 1951. Unfortunately, practically nothing is known about the "Bundesgrenzschutz" outside of the Germanies, and academic studies are virtually non-existent. This is particularly unfortunate, given the significance of the BGS not only for West German internal security, but also for its worth to NATO forces.

The "Bundesgrenzschutz" as a well-trained and equipped "police" force (they are not soldiers in spite of military-type organisation and light infantry weapons) under the control of the West German Ministry of the Interior (not Defence), has no formal tie with NATO, but does serve it indirectly. As former Interior Minister Dr. Gerhard Schroder noted in 1961:

"Border incidents on this sensitive boundary could quickly develop into a serious conflict if 'Bundeswehr' (the Federal armed forces of West Germany) or NATO forces became involved. Therefore, the "Bundesgrenzschutz" is responsible that incidents, that do not have the character of a military conflict, be taken care of through police means without the employment of military force".

Several items figured prominently in the decision to establish a national police force. First, there was the problem of internal security raised by Communist-inspired riots and demonstrations and general "Red agitation" in West German cities—not to mention large-scale infiltration of Communist agents across the border from East Germany or the harassment by East Germany of West Germans living in the border area.

Second, the rearming of East Germans and the creation of the core of an army under the guise of a "People's Police" alarmed both West Germany and the Western occupation powers. Finally, the invasion of the Republic of Korea

by Soviet-supported North Koreans, drew attention to the parallel situation with the divided Germans. International attention focussed particularly on the latter two points.

Chancellor Adenauer wrote in his "memoirs" that, by the end of June, 1950, he was pushing the High Commissioners hard for some decisions on West German police strength. He felt it was necessary to reinforce the "land" (state) police and to create auxiliary local police. "What I was aiming at", he wrote, "was the creation of a Federal Police Force".

In letters to the Secretary of State, Dean Acheson, British Foreign Secretary, Ernest Bevin and French Foreign Minister, Robert Schuman, Chancellor Adenauer had, in fact, already formally proposed "that a force of 25 000 men, equipped with light arms, be established as a central police for the West German Republic. Michael McDermott, a U.S. State Department Press Officer, linked the Adenauer proposal directly to the armed build-up in East Germany and noted that the police issue was entirely separate from the question of establishing a German Army.

The Adenauer proposal got little reaction from the Allies, and the Western Allied High Commission had, in effect, rejected it—just four days before the Communist attack on the Republic of Korea. On 3rd July, 1950, John McCloy, U.S. High Commissioner, suddenly announced that the occupation authorities were now willing to reconsider Bonn's request for a West German national police force.

The public call for a national police in Germany stimulated much discussion on "rearming the German" under any guise. The rearmament debate also revolved around strategic questions of Germany's possible role in helping to defend itself, as well as Western Europe. One British journalist, Jon Kimche, wrote that the defence of Germany was hopeless, and the creation of police forces for internal stability was an open invitation to trouble. He noted that the German General von Manteuffel, was currently speaking publicly for the need of 30 divisions and compared this to Major General Jodl's testimony at the Nuremberg trials that at least 300 divisions would be needed to defend Germany from the East.

Even 30 German divisions were unacceptable to the Allies, and the creation of police units, Kimche felt, was the first step in the direction of a full-scale German military machine. He drew a parallel to the German Governments in the 1920s that pleaded for permission to organise a "civic guard" that ultimately was manipulated, under claims of needing to meet various threats to civic security, into an army.

Alastair Buchan took issue with Kimche,

arguing that Germany must contribute something to Western defence. Why not have, he asked:

"... a strong gendarmerie, capable of maintaining civil order in the face of panic, keeping open the lines of communication, suppressing fifth column activities and relieving allied armies of numerous civil and administrative burdens?"

He felt this was a lesson from Korea.

The well-known British military expert, B. H. Liddell Hart, summed up both arguments. He quoted one of the former heads of the German General staff as saying:

*"European defence is a problem without solution. The English, Dutch and Americans are too few; the French and Italians unreliable. Only strong German forces—say, 40 divisions—could suffice to stop the Russians. But German rearmament is impossible on every ground—international, political, domestic."*

The most that might be feasible was some sort of gendarmerie strong enough to protect West Germany from invasion by East German "police" yet not strong enough to fight the Soviet Union.

Under pressure from world events and prodding from Adenauer, the Foreign Ministers of the United States, the United Kingdom and France met in New York in September, 1950, to face the issue of a German Army and a Federal police. At the conclusion of their talks on 18th September, 1950, they issued a statement on the question of rearming Germany. They agreed that re-creation of a German national army would not at present serve the best interests of either Germany or Europe, although proposals for German participation in an integrated force were being studied. On the matter of police forces, the statement which authorised a German police strength of 30 000 read:

*"As regards internal security, the Foreign Ministers recognise the necessity for insuring that the German authorities are enabled effectively to deal with possible subversive activities. To this end the Foreign Ministers have agreed to permit the establishment of mobile police formations organised on a 'Land' (state) basis, but with provisions which would enable the Federal Government to have adequate powers to make effective use of all or part of this force in order to fully meet the exigencies of the present situation. The High Commission and the Allied Forces in Germany will render such assistance as may be feasible in the rapid establishment of this force."*

The problem of trying to co-ordinate a decentralised police force organised on a "Land" basis proved serious however. A further problem was the fact that the "Lander" simply were not

financially able to support police forces beyond 10 000 men total (let alone the 30 000 that were allowed). Given this situation, combined with the fact that the most imminent threat was the East-West German border and the fact that Article 87 of the Basic Law provided for Federal frontier protection authorities, the Bonn Government eventually began negotiations with the "Lander" and the Allied High Commission that resulted finally in the law of 16th March, 1951, which created the "Bundesgrenzschutz."

The legacy of the Third Reich has justifiably caused some attention and concern for the structure and operation of the "Bundeswehr", West Germany's armed forces. Oddly, little attention has been focused on what was, in fact, West Germany's first Federal "armed force" and what is today a crack paramilitary force. Source materials are rather scarce. Consequently, the following is a modest attempt to describe the general nature of the "Bundesgrenzschutz" so as to familiarise Western military observers with this impressive organisation.

The basic mission of the BGS is written into the Federal Statute of 16th March, 1951, which created it. The BGS is charged, in particular, with protecting the Federal Republic against illegal border crossings, especially by means of passport control, and against internal disturbances within the frontier area to a depth of 30 kilometres that threaten the security of the border. Included in this responsibility is the deterrence of individual or organised penetration into West German territory, protection of citizens living in the border area from East zone harassment, and the control of border incidents so that they do not expand into more serious confrontation. The BGS co-operates both with Federal customs officials and "Land" police in matters of common interest.

Members of the BGS are police officials, not soldiers, and, upon leaving the "Bundesgrenzschutz", can continue their careers in other areas of public or private service. During "Bundestag" debate on establishing the BGS, the Social Democratic Party expressed concern over the possible mixing of military and police roles. The then Federal Minister of the Interior, Dr. Robert Lehr, gave assurances that the BGS would, indeed, be a police authority. Continuing events along the demarcation line separating the two Germanies called for prompt action and, in fact, a substantial majority supported the passage of the BGS statute.

The question of the "military" role of the Border Police came up again in 1965 when the "Bundestag" moved to clarify the status of BGS forces in case of armed attack into the territory of the Federal Republic. The then Federal Interior Minister, Herman Hoehler, commented:

*"As far as the hitherto existing mission of the BGS, nothing has changed, its units, through the newly-proclaimed law, do not become part of the "Bundeswehr"; its employed officials do not become soldiers. The BGS is and remains a police force, no matter when, where and for what purpose it is employed. There is no question of a purely military use of the BGS."*

The paramilitary structure of the BGS is based upon its special police assignment of border security. The mission of the BGS is clearly separate from the "Bundeswehr" in that it is concerned strictly with internal security.

The obvious possibility exists, however, that, in the event of attack, the "Bundesgrenzschutz" would quickly be drawn into "military" conflict. To protect these "policemen" in that eventuality so that they would not be shot as partisans or so that they might have rights as prisoners of war, the law creating the BGS was amended in 1965 to make their international legal status clear. In accordance with the Hague Rules of Land Warfare and the Geneva Conventions, the BGS Statute now clearly provides that, in the event of armed conflict, the BGS is to have a formal part of the defence of the Federal Republic. In this role, the BGS is to be considered as part of the armed forces of the Federal Republic.

In addition to stabilising the border area, the "Bundesgrenzschutz" has assumed missions similar to those associated in the United States with the National Guard and various civilian defence agencies. In the event of natural disaster or other public calamity, the Federal Border Guard (along with the alert police, the "Bundeswehr", the Red Cross and others) has been helped in such diverse situations as mountain rescues, floods and forest fires.

The Federal Border Guard, under the control of the Ministry of the Interior, is divided into two basic divisions: Border Guard Field Units (Grenzschutztruppe) and the Border Guard Individual Service (Grenzschutzeinzeldienst), similar to the U.S. Immigration and Naturalization Service. The Field Units represent a full motorised police force, armed along the lines of light infantry and organized into military-type units. They are served by ordnance and communication units, as well as by flight squadrons consisting of helicopters for observation and rescue work.

The over-all authorized strength of the BGS is 23 500. The current actual strength is around 20 000, of which about 1 000 are within the Individual Service. A BGS battalion has about 650 troops (Grenzjager) and consists of three rifle companies and a headquarters company. The headquarters company includes reconnaissance, special vehicle (e.g. armoured car), and

communications and emergency platoons, as well as the maintenance service. Armament includes police batons, pistols, sub-machine guns, fully automatic, rapid-fire rifles, machine guns, tear gas, hand grenades, anti-tank weapons and all-terrain lightly armoured cars.

The number of police officials in the "Bundesgrenzschutz" has risen and fallen over the years. The biggest impact was caused by the creation of the new German Army. In order to benefit from the experience of the Border Guard, and perhaps with the thought that the "Bundeswehr" would someday take over the mission of the BGS, a German law of May, 1956, authorised the Federal Minister of Defence to organise units for the Federal Army from Border Guard units. The transfer was on a voluntary basis, and whatever ultimate fate might have been considered for the BGS, its strength was still authorised to be continued at 20 000 men. The fact that the BGS has shown itself as an ideal vehicle for keeping NATO and Warsaw Pact military units separated (e.g. NATO units, with the exception of highly mobile reconnaissance units, such as U.S. armoured cavalry patrols, and various military intelligence services, are generally not even permitted within the border area) and also particularly well-suited for the "police-type" functions required along the Iron Curtain border area suggests the Border Guard will be kept in service for an indefinite period.

Illustrative of the need for police units is the experience of the BGS Coast Guard which is part of the Field Units. After the Soviet zone "People's Police" was bolstered with the creation of a "Sea Police" in 1950, it became clear that the Federal Republic could only protect its 3-mile limit along the Baltic Sea Coast with a similar force. In the spring of 1951, a BGC Coast Guard was created. The first vessel was not delivered until mid-1952, and, by the end of 1955, the Coast Guard had only about 25 boats total—including patrol boats, tugs and training boats (of which three were sailboats).

As the "Bundeswehr" was being created in 1956, the BGS Coast Guard was abolished and taken over by the new Federal Navy. By late 1964, however, it was re-created. Sole responsibility for policing West Germany's 370-kilometre-long Baltic Sea Coast had been entirely in the hands of eight unarmed customs boats that were kept busy by their own customs control mission and four unarmed water police boats from the "Land" of Schleswig-Holstein which could be called upon. Since its re-creation, the BGS Coast Guard patrols this area as part of the over-all "BGS" police mission. It has processed an impressive number of refugees from the East, some of whom owe their lives to dramatic sea rescues

by BGS patrol boats.

The Border Guard Individual Service was created in 1951 by the same statute that created the "Bundesgrenzschutz". The service, originally called the Passport Control Service (the name was changed to Border Guard Individual Service, in April, 1961), represented the amalgamation on a Federal basis of passport control that had previously been exercised by a variety of agencies (e.g. Allied military police, zonal authorities and Lander police). Acceptance into the Individual Service requires prior service in the Field Units.

The Individual Service consists of a headquarters (Direktion) in Koblenz and nine Border Guard agencies. The Federal Republic of Germany has some 6 000 kilometres of land and sea border, with 650 points of entry (91 at airports, 88 at harbour ports and 471 on land borders). The approximately 1 000 officials of the Individual Service man the most used 79 ports of entry, the remainder being covered by customs officials and "Lander" police.

The BGS Field Units, deployed largely along the Iron Curtain border (although a guard battalion, technical services, including helicopter service, and helicopter headquarters are located in the Bonn area), patrol the border between the official crossing points covered by the Individual Service.

The Individual Service is responsible for such items as the search for wanted persons, denial of entry to certain foreigners (those with improper papers or those declared "persona non grata"), transferal of expellees, and gathering intelligence through observation of proceedings that might relate to the security of the Federal Republic. In the conduct of their mission, the Individual Service units co-operate with many other agencies, in particular, with the criminal police, justice and customs authorities and foreign officials.

Officials of the Individual Service and Field Units wear a green uniform with dark green collar. A BGS shield — a white German eagle on a green background — is sewn on the left sleeve midway between shoulder and elbow. Rank, which follows former police as well as military lines, is indicated by shoulder straps bearing varying combinations of colours and pips. The Field Units also wear various types of field uniforms, for example, cold weather or camouflage. Foreign visitors are occasionally startled and stirred by memories upon seeing BGS Field Units wearing their steel helmets which are of the type formerly worn by the "Wehrmacht".

The BGS has one further mission in addition to those described above. It is responsible for various types of Government guard duty in

Bonn, the West German capital. The Field Units maintain a guard Battalion in Bonn. This unit, along with the Federal criminal police, is responsible for the security of the Villa Hammerschmidt, the residence of the Federal President, and of the Palais Schaumburg, the residence of the Federal Chancellor. This includes control of traffic in and out of the grounds and certain ceremonial functions. The Guard Battalion also posts guards at the Federal Ministry of the Interior and at the Foreign Office.

In its infancy, the "Bundesgrenzschutz" had some of the difficulties one might expect with a newly created force—especially in terms of adequate personnel and equipment to perform their assigned mission. A Reuters report on a September 1952 BGS three-day field exercise rounding up "terrorists" spoke of "failure" and noted: "*Former General Anton Grasser, who was in charge of the manoeuvres in a desolate area of Hesse, said at the final briefing that the force managed to protect villagers and highways from the simulated terrorists, but failed completely to wipe them out.*"

Officers involved in the exercise were quoted as saying that the BGS lacked numbers and suitable weapons for the mission.

Only two years later, after the conclusion of a similar exercise, an observer spoke of the Federal Border Guard as "*an exceptionally well-trained and efficient organisation*". He further pointed out: "*It demonstrated its prowess in manoeuvres November 26 to November 29 in Donauwoerth, Bavaria. Despite its armament, which is no heavier than machine guns and armoured cars, the frontier defence force proved to be a fast-moving, hard-hitting organisation*".

BGS officials are Federal law enforcement officers (Polizeivollzugsbeamte des Bundes) cast in the mould of civil servants rather than soldiers. Enlistment in the BGS, formerly for at least an eight-year period, was on a voluntary basis. The strength of the Border Guard has fluctuated over the years for a number of reasons (e.g. competition from the "Bundeswehr" and lack of knowledge about the BGS). This situation was helped through an amended Federal salary law providing for a two- and four-year enlistment and better pay for two-, four- and eight-year enlistees.

Also, paragraph 42 of the 18th January, 1969 Compulsory Military Service law provides for drafting young men into the BGS. Twenty-four months of service as an official in the "Bundesgrenzschutz" satisfies the military obligation. One can even ask to leave the BGS at any time, but, if this happens before 24 months of service and the official is in an appropriate military obligation category, he is open to "Bundeswehr"

service.

Border Guard officials consist mostly of Provisional Officials (Beamte auf Widerruf) who, at the end of their enlistment period, are guided into other careers or professions in Government service or private business. Men in this category can become Career Officials (Beamte auf Lebenszeit) if they meet certain prerequisites and pass specified examinations. They then have rights and duties similar to any Federal career civil servants (retirement and pension).

The two basic career options are officer or enlisted man and non commissioned officer. The former requires officer candidate training in the enlisted ranks. The latter provides options of later being transferred to officer candidate training (including making up the approximate equivalent of a high school diploma—"Abitur") or transferring into the Border Guard Individual Service. Promotions are based on seniority, prescribed training and a series of examinations.

All new police officials undergo approximately a year of basic training which includes weapon and equipment handling, marksmanship, criminal law, civics, and rights and duties of police officials. There is also further specialised training for specific duties within Field Units. These include driver training, as well as signal (radioman, telephone and teletype operator or repairman), ordnance, engineering and medic training. Particularly qualified BGS officials are placed in the helicopter service, music corps or the administrative service.

The mandatory instruction of the BGS Technical School is designed to provide general basic training to Provisional Police Officials that will prepare them for civilian jobs or further training when their enlistment is over. Training attempts to raise the basic education level of these men over a three and one-half-year programme (beginning with the first year of service) and covers such areas as citizenship, general economics, language cultivation, correspondence, technical arithmetic and typing.

This brief study has attempted to give some form to the "Bundesgrenzschutz" and call attention to its very important, but largely overlooked, role. Even Paul Lucke, a former Minister of the Interior, admitted that many citizens of the Federal Republic of Germany do not recognise the green uniform of the BGS.

The Federal Border Guard was created in an atmosphere of Cold War tensions and manoeuvring to fulfill the need for some sort of counterforce vis-a-vis the growing threat from the East. Further, there was a need for securing and stabilising the East-West German demarcation line against border incidents and infiltration.

Over the years, the "Bundesgrenzschutz" has proven itself a highly capable police force, able

to perform well its mission along one of the more sensitive borders in world affairs. It has also become an ideal vehicle for handling potentially explosive border incidents on a "police" basis and keeping the Cold War titans separated. Somewhat less grandiose, but no less significant, the BGS has won citizen support for its aid in civil emergency and disaster situations.

U.S. armoured cavalry, as well as intelligence and security personnel, who have worked with the BGS in the border area, are invariably impressed with the competent, professional performance of BGS units. In spite of their status under German law as police and civil servants, the discipline and esprit de corps of the "Bundesgrenzschutz" rivals that of the proudest military units elsewhere in the world.

The training and arming of the BGS reveal a paramilitary, mobile force prepared for reconnaissance, rescue, security and modest defence roles. Physical training is tough and demanding. Academic training is geared not only toward professional proficiency, but toward raising the general educational level of border policemen for future roles in civilian jobs or other types of Government service. Even given the nature of their armament and mission, there is much to indicate that the BGS would be highly dependable and effective in a military situation.

(Courtesy Military Review)



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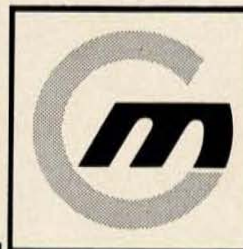
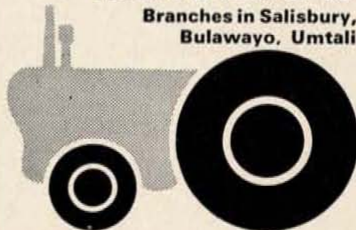
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### V.I.P. VISIT

On the 25th May, 1973 we had the pleasure of a visit from Major General Rawlings, who was accompanied by Brigadier Shaw. There was a reception for them in the WOs' and Sgts.' Mess, and afterwards lunch at the Officers' Mess. Not only is Major General Rawlings a popular figure with the officers and other ranks, but his visit always signals a time of feasting and rejoicing. Come again, sir!

Among other welcome visitors were Lt. Col. Hopkins on a morale boosting talk on pay. Naturally he left behind a buzz of discussion and high hopes. Other visitors from Salisbury included Major Busby and Major Fall — the gun slinging Padre from 3 Brigade. It is reported that later in the evening Padres Edgar, Bird and Fall held a conference in the Mess bar at Brady Barracks, and they fell to discussing the frailties of the flesh. "I must confess", said one, "that I am not without fault". "I have a quick Irish temper; and while on the golf course I don't jump up and down, or use profane language, but boy, when I spit, the grass bursts into flames!" "My weakness" said the second, "is alcoholic beverages." "Of course I don't often imbibe, but I must confess there are times when I am tempted beyond my strength." "Well, brethren," said Padre Fall, "my besetting sin is gossip — and man won't Norman and I have something to talk about when I get back to Salisbury!" This conversation is somewhat apocryphal.

### NEW ARRIVALS

Congratulations to Rfn. and Mrs. Rees on the birth of a bonnie son on the 11th May, 1973. Also to S/Sgt. and Mrs. Phillips who were blessed with a son on the 18th May, 1973, and Sgt. and Mrs. Korb for their little boy born on 19th May, 1973. The Army will never be short of men if its members can produce sons like this!

### PROMOTIONS

Still on the subject of congratulations, well done to John Hutton on getting his W.O.1. John is going to Brady as W.O.1 2RR with effect

from 1st June, 1973. Also to Cpl. Blackwell on his promotion to Sgt., and the other sixteen lads from C Coy. who have been promoted to Corporal. Good work.

### FAREWELL:

We regret we must say farewell to W.O.2 Douggie Balfe and Mrs. Balfe on their transfer to Gwelo. Douggie has been an institution in Llewelin for more years than he cares to remember — good luck to them both. I don't know what to say about W.O.2 Mike Longuet-Higgins. He has been posted to Kariba, but popped off to do his S.A.S. E.R.E. Course, and got back sooner than he expected sporting a broken leg. He was saying he needed a bit of leave to sort out his posting to Kariba, but surely Mike this is a drastic way to get it? Our sympathy goes to Mike for being forced out of the Rhodesian Rugby Selection against our overseas visitors. We hope you don't give Ann and your mother too many hardships during the time you are confined to the house. Capt. Leaver has allegedly departed on a spelling course — "S.D." to the uninitiated, yet at the Station Commanders Conference he is recorded as absent on leave. This is an anomaly which makes one suspect he has gone underground to avoid editing the Depot Diary this month, which he had promised to do. Farewell also to June Finnis who left for Lisbon on Thursday, 24th May, 1973, to join Bob who had preceded her to Europe. My spies tell me that when Bob left for Europe, June suggested to him that he ought to develop his cultural interests by visiting the Old Ruins in Athens — however Bob dug his heels in and decided he would rather visit the young ruins in Paris! In June's absence the QM Stores is understaffed, despite the return to duty of W.O.2 Mike McKinney from leave in South Africa. Marie Murdoch has gone sick — the prolonged spell of keeping Majors out of all the goodies in the QM store finally broke her down. Last time I saw her she was rushing around her office brandishing a deadly looking automatic pistol. I decided it was time to go. We all hope to see you back soon Marie, Mack the Knife is back in office and can cope with



the heavy arm stuff.

### BOWLING CLUB

Before leaving Marie Murdoch she told me that Llewellyn Barracks Bowling Club had entered two teams for the Salisbury Championships. Both covered themselves with glory by winning three matches each, no mean feat for a brand new club. These same two teams have now entered the Fourth League competition which commences in June in Bulawayo. We are hoping for great things from these enthusiastic players. At the moment our mower is out of order so we are rather handicapped in practice — there is a considerable five o'clock shadow on the green at present.

The bowling club, and indeed the whole camp, is sorry to say "farewell" to Don and Margaret Ferguson. Don is going as R.S.M. to Inkomo by the sea. They have a delightful villa, every room facing the sea if your eyesight is good enough. Don, of course, was instrumental in getting the Bowling Club going, and we take this opportunity of congratulating him and wishing them both "God speed and happy promotion." At the same time welcome to George Tarr and Jeff Heldsinger on their promotion and posting. God bless and help you.

### SUNDAY SCHOOL:

The Sunday School under Mrs. Billy Graham goes from strength to strength. Mrs. Nel is at present in hospital and we wish her a speedy recovery. The annual picnic will be with us soon, which reminds me of one of the children who had been most irregular in attendance and turned up on a rare occasion. Teacher said: "Well I'm glad to see you this morning, did you learn any thing interesting in class?" "Oh yes," said the honest lad, "I learned what day they are going to have the annual picnic!"

### SADDLE CLUB

**Apology.** First the writer must apologise for an enormous error in the last issue of Assegai. It was stated that Mrs. Bowman is taking our kids out for hacks. Mrs. Bowman is probably doing just that — but in Salisbury. Mrs. Stansfield takes our children out for rides and gives tuition. All the kids love her and she really has her work cut out to keep up with dozens of kids waiting for rides. My apologies to both ladies for this error.

### Obituary.

It is with deep regret that we record the death of Dave Rosedale. He was a great Gymkhana Armed rider and represented Rhodesia down South earlier this year. Lt. Le Roux and Ssgt. John Rhodes attended the funeral in Que Que to say Llewellyn's farewell to this great

supporter of our sport. We send our condolences to his family and team mates.

### Essexvale Pony Camp.

A total of 40 young children camped out for the weekend at Essexvale on 5th/6th May and took part in games, a Best Horse and Rider Competition, jumping school and hacks. The most popular event was a "Mini" cross country course that even our most novice riders had a go at. We also held a mounted fancy dress competition, and of course the inevitable braai. One child fell in the horse trough and a couple took tumbles, but fortunately no harm was done. A very exhausted Jill and John Rhodes drove the kids back on Sunday night and judging by the singing and shouts of "we want to go back" we feel sure that the weekend was a great success.

### GOLF CLUB:

The Golf Championships were held on 28th/29th of April, 1973, at which time, of course, the best golfers were on Easter leave. The weather prior to the Championships was "typical Llewellyn" blowy, guti, and cold. However, on Saturday the weather broke and we had really excellent weather for the Championships.

Results: A Division: Winner, Capt. Andre Naylor  
Runner-up: Lt. Minx Hill  
B Division: Winner: Major Bonzo Atkinson  
Runner-up: Major Chris Horn  
C Division: Winner: Capt. Eddie Lewis  
Runner-up: W.O.2 Bill Armstrong  
D Division: Winner, W.O.2 Robbie Murray  
Runner-up: Ssgt. Ted Donachie  
Ladies: Winner: Mrs. Angela Long  
Runner-up: Mrs. Anne Atkinson

Mrs. Mary Walker, wife of the Acting Commanding Officer, presented the prizes. Brig. and Mrs. J. Shaw were among the distinguished guests present. Cups were then filled by the winners and passed around. The evening was rounded off with an excellent supper and dancing.

At the AGM Ssgt. Lewis Nel was unanimously voted in as Club Captain for the ensuing year. Lt. Minx Hill was appointed Vice Captain. Lt. Piet Le Roux has now left us to take over the Saddle Club, we wish him and the Saddle Club all the best.

The Padre who doesn't play on Sunday mornings was asked if he considered it a sin to play golf on Sundays and is reputed to have made this reply: "Perhaps not the way you play

golf, but it certainly would be a sin the way I am playing at present."

### Golfing Hint

"Lifting the elbow is the cause of erratic drives and wild swings. This is particularly true when the elbow lifting starts in the Club House."

### Warning

Minx Hill publishes a warning to beware of Al Capone Malone who plays off 24 and returns a net 69. What is Derek Maaske doing about this public enemy No. 1?

### RUGBY:

Our Presidents side, and our Under 20 team are still going strong. This is quite remarkable for so many of the members are out in the bush. The same team seldom turns out twice in succession. How long we can keep going is any man's guess, but with the dedication and keenness of the "Old Guard" and particularly of Ken Leviton and Bill Booyse (our Postmaster and present Captain of the Presidents Cup side) we hope for better days.

### CRICKET

Dave Muil tells me that like the Rugby Club, they are so disrupted they may have to pull out of league matches. To date they have won fifty per cent of their matches, which under the circumstances is greatly to their credit.

### MEDICAL TRAINING SCHOOL

Congratulations to the Medical Training School who on a recent exercise provided the Army with a new medicine called "McGrath's Broth". It is compounded out of ration packs with an unknown additive to keep the troops on the jump. I have heard it authoritatively stated that once it is patented it is doubtful if Cascara will ever be on issue again. Dr. McGrath will undoubtedly attain great status over his new scientific discovery.

### The Wrong Password

Cpl. Te Braake, who has a charming lisp, was almost a casualty when in the bush with the School. He couldn't quite manage the password and did his best with "Liqwace Allsowts". I understand that the higher authorities are composing a special password for Cpl. "Tee Bwaake" all for himself.

Course Med./6/32 has now been completed, and thirteen brand new medical assistants have been turned loose on the unsuspecting Army. This course is of the very highest standard.

### ROUND THE COMPANIES:

#### "C" COY.

C Coy. are anxious. When will Maj. Ian Stansfield fit a cow catcher to his Land-Rover? Does he need a sight test? Or did he really

believe an innocent cow was a terrorist in disguise? Intake 129 is one of the best intakes in the companies' history, which goes to prove that necessity makes the best soldiers!

#### "B" COY.

B Coy. are having a hard time. They are worked to death preparing for the Guard of Honour at the Opening of Parliament, and then they have to train, and then they have to play rugby . . . no wonder they say they have a B awful time. But it is a great honour to mount the guard at the Opening of Parliament.

#### "A" COY.

Intake 130. By the time these notes are published the company will have returned from its Classic War Exercise . . . digging trenches in rock hard ground and doing platoon attacks into unsealable "gommos". A soldier's lot is not a happy one — not for this lot anyhow. This is best illustrated by the following comment from the trainees themselves. "A large part of our training is called 'Classical War' which when put that way sounds extremely civilized. However in reality it consists of hurling one's body at a thorn bush, then rolling across it to ensure that you collect your fair share of razor pointed thorns." Who would be a trainee?

### OVERHEARD

In the M.T. Section. "Robbie" who will be nameless, assures me that many a tight nut has been loosened by a small wench!

Smug Bug (from the same course)

"No" said the centipede crossing her legs, "No, no a hundred times no". Did you know that a centipede had a hundred legs?

### Workshops

An aircraft dived low over the hanger when Capt. Malone was outside talking to John the African helper. "Well John don't you think that Boss is clever, flying around like that?" John: "Yes Sah, he is very clever, but he is not as clever as the Boss who puts the sardines into the tin without opening it. That Boss is too clever."

Overheard in the Golf Club on Sunday morning. Jock was late in arriving at the Club and when asked why he was late, he was heard to say: "It was really a toss-up whether I should go out to Golf or go to Church. Indeed I had to toss-up fifteen times. That's what kept me late."

From Dr. Ian Scott:  
There was a young man with a hernia,  
Who said to his doctor Goldernia,  
When improving my middle,  
Be sure you don't fiddle,  
With matters that do not concernia.

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# THE ESSENCE OF INFANTRY AND THE INDIRECT DEFENCE

by *H. E. Mayer Jr*

Sun Tzu said that, "he who knows the art of the direct and the indirect approach will be victorious". In "Strategy", the late Sir Basil Liddell Hart stressed the advantages of the indirect over the direct approach in large-scale offensive operations. On a smaller scale, the indirect approach becomes possible in defence by exploiting the potential of machine gun fire. This article discusses some aspects of the tactical role of machine guns in the indirect defence.

The machine gun holds a prominent position among weapons that altered the course of military history and modified the art of war. In World War I the machine gun eliminated cavalry from the battlefield, forced Infantry into trenches and, in consequence, sired the tank.

Liddell Hart said that machine guns were "the concentrated essence of Infantry", and his knowledge of machine guns rested on direct experience. Although Hart was an eminent military historian and an internationally recognized authority on military theory, he began as the executive officer of a rifle company in an assault battalion in the Battle of the Somme in 1916. That experience impressed him with the deadliness of defensive machine gun fire, and it stimulated his study of alternative methods of combat. However, some have apparently forgotten that machine guns caused a basic change in modern warfare, the result being that the potential of machine gun fire is sometimes overlooked.

The distinguishing and most important characteristic of the machine gun is its ability to produce final protective lines. Bullets from a stable machine gun fired at a cyclic rate of 600 rounds per minute follow each other on a grazing trajectory that forms the final protective line at intervals of one-tenth of a second. In order to cross the final protective line without being hit, a running man must cross in the space that separates two successive bullets. And that is not easy to do. In fact, the chance is better than fifty-fifty that the man will be hit. For example, if an attacking skirmish line must cross four final protective lines, then more than 90 per

cent of the attackers will be casualties. This is obviously disastrous for a unit attacking through a co-ordinated defence.

The indirect defence is an integrated system of final protective lines and long range enfilade fires. It is based on three rules of action on which the combined effect improves the defence and the safety of the machine gunners. The rules are simple. First, protect machine guns with machine guns. Second, emplace machine guns so they cannot be hit from the front. Third, conceal everything.

The first rule makes machine guns interdependent and guarantees interlocked defensive fires. It also means that a machine gunner fires to protect others—not himself. The second rule protects the machine gunner from frontal fires and prevents his firing to the front. Since the gunner cannot fire to the front, he relies on riflemen, supporting weapons, and other machine guns for close defence. The first and second rules contain the essence of the indirect defence.

The third rule keeps the gun's position disguised. Nothing disrupts an assault more than accurate machine gun fire from concealed guns. Therefore, the enemy, with deception and force, will strenuously try to locate and smash all defensive machine guns before the assault begins. Therefore, good concealment and strong cover are mandatory. After firing commences, the guns must still remain concealed to the maximum extent possible. As an example, the ammunition should not include tracers. But, in addition to well planned fires, good concealment, and strong cover, the indirect defence itself thwarts the enemy's ability to locate and destroy the machine guns because the enemy's organizational structure and method of attack are not designed to cope with it.

The system of command, control and communication for assault units is designed to facilitate forward movement within an assigned zone of advance. Each assault unit is responsible for overcoming resistance within its zone of advance. But the indirect defence denies the attacker the advantage his organizational

structure should provide, because each assault unit is stopped by automatic weapons located outside its zone of advance. At the same time, automatic weapons located inside the zone of advance do not become targets in close defence of their own positions. The attackers, as a result, find themselves in an awkward situation. It is as though they attack in the wrong direction, for they don't attack the positions that cut them down. As the attack stalls, small groups may attempt lateral moves to build bases of fire to silence the enfilading machine guns. But methods of control in the attack are not developed enough to execute turning movements safely in front of the FEBA. Besides, the enemy has a dilemma. If he turns, which way should it be? Enfilade fires hit his unit from both flanks.

Those lateral movements can be stopped by defensive automatic rifles. Further, if assault units commence firing across sectors of adjacent units, they run the risk of killing their own men in neighbouring units. To maximize control and minimize confusion, the attacker is constrained to fire to his front—which is exactly what the indirect defence desires. With lateral movement stopped by automatic rifles and forward movement stopped by machine guns, men in the stalled attack wait in dead space for mortars and artillery to drive them either forward into machine gun fire or backward to their line of departure. To do his job better, the attacker needs no change in organizational structure, he needs only a change in approach. It is the indirect approach that leads to success as Sun Tzu and Liddell Hart have said.

The preceding paragraphs have dealt with action on the forward edge of the battle area, the hard crust of defence, and have ignored the roles of tanks and aircraft. Although armour enthusiasts would point out that the defence sketched here could be easily crushed by tanks, it is equally true that anti-tank defences can stop armour dead in its tracks. Moreover, the principle of the indirect defence can be used against tanks. Anti-tank weapons with a cyclic rate of fire of 30 rounds per minute would do the same thing to tanks that machine gun fire does to men. Further, when tanks cannot penetrate a defence, Infantry are called upon to open a way for them—which brings us back to the situation described in this article.

The essence of Infantry combined with the indirect defence can stop an assault dead in its tracks. What more can be asked of a good defence? The essence of Infantry, as defined by Liddell Hart, is almost one century old. The basic idea behind the indirect defence is about 23 centuries old and dates from Sun Tzu. It seems that the art of defence, like wine, improves with age.

(Courtesy Infantry)

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# THE ARMALITE IN AFRICA

By Lt. D. A. Scott-Donelan,  
Rhodesian Army

Recently the writer was able to obtain an Armalite A.R. 18 which is probably the most advanced and sophisticated infantry rifle manufactured today. The acquisition of this weapon provided a unique opportunity to test it under local conditions and to determine whether or not it would be suitable for Rhodesian needs.

The weapon is a lightweight gas operated rifle, providing full automatic or semi-automatic fire, using a 20 or 30 round magazine. The barrel is air cooled and is provided with a flash suppressor which also doubles as a grenade launcher. Not much different from the F.N. you may say, but it also fits a bipod as well as a wicked looking bayonet.

It is chambered for the 5,56 mm (.223) cartridge and has a folding butt made of glass reinforced nylon which is destruction proof. An interesting feature of this weapon is that it has a four positional change lever which includes "bursts of three", i.e. each time the trigger is squeezed three rounds are fired. It has an effective range of 500 yards, but it excels in close range combat situations where its short length, lack of recoil and high rate of fire make it a formidable weapon in trained hands. A sub-machine gun version is also available.

The A.R. 18 was designed by the Armalite Corporation as a second generation 5,56 mm weapon to supercede the M.16 which is the standard infantry rifle issued to the American Army today.

The basic considerations in the design of the A.R. 18 were fourfold; to obtain maximum performance in adverse battle conditions; utmost simplicity to reduce training costs and time; the reduction of maintenance costs and lastly, to

reduce production costs lower than any other rifle in its class.

Mass production of the Armalite is possible for less than half the cost of other modern combat rifles due to the extensive use of sheet metal pressings and automatically produced lathe parts, permitting a minimum of close tolerances and precision fittings. These factors make the Armalite an ideal combat rifle for production in countries with limited production facilities.

## THE CARTRIDGE:

In the late fifties, General William Lyman requested the Armalite Corporation to develop a lightweight round to replace the 7,62 NATO cartridge which is obsolete. Thus the .223 was born, providing a ballistic performance of 3 250 feet per second and a muzzle energy rating of 1 300 foot lbs. at 100 yds. Armalite also simultaneously developed a lightweight rifle designated the A.R. 15 which weighed only 6,3 lbs. The superbly accurate cartridge fired in this weapon easily met the basic U.S. Ordnance Board's requirement of penetrating a steel helmet at 500 yards. This rifle, slightly modified, became the M.16 and was manufactured in large quantities for the American Air Force and subsequently the Army.

The 5,56 mm bullet weighs 55 grains, compared to 122 of the Communist 7,62 intermediate and 150 grains of the 7,62 NATO round. This individual weight per cartridge proves interesting when projected into per man combat requirements.

50 rounds of 5,56 weigh 1 lb. 4 ozs., 50 rounds of 7,62 (inter), 2 lb. 2 ozs.; 50 rounds

of 7,62 (NATO) weigh 2 lb. 13 ozs.

### PERFORMANCE:

Lacking sophisticated testing apparatus and limited in ammunition, the tests conducted were basically simple and concerned mainly accuracy and destructiveness.

#### 1. Accuracy.

The first accuracy tests with the A.R. 18 were 5 shot groups at 100 yards. An Army Warrant Officer and a Senior Officer in the Air Force, both admittedly excellent shots, shot groups of under two inches at their first attempt

#### 2. Destructiveness.

During this test the F.N., the A.K. 47 and the A.R. 18 each penetrated 10 telephone Directories bound together at 50 yards. The F.N. went on to penetrate 16, the A.K. 47, 12, and the tiny 55 grain Armalite round stopped at 11, but only because the round jack-knifed. Firing at a water filled half gallon can, the F.N. and the A.K. merely penetrated the tin both sides, leaving the tin on the stand, but the faster and lighter 5,56 blew the tin to pieces. The third test was carried out on one litre plastic bottles. The hydrostatic shock produced by the



*The Armalite and the F.N. shown alongside for comparison purposes.*

which was better than either had done before, using their own weapons. The second accuracy test recorded 10 out of 10 hits in a nine-inch group, fired at 200 yards standing. All firers were most impressed with the accuracy and ease of handling of the Armalite.

5,56 bullet is enormous, tearing the bottle to shreds.

#### THE SOLDIER:

To what extent does the A.R. 18 compare to the F.N. and the A.K. as far as the ordinary

soldier is concerned? The following chart will provide some interesting data for comparison.

	A.R. 18	A.K. 47	F.N.
Weight Loaded (20 rounds)	7,7 lbs.	11,3 lbs. (30 rounds)	11,5 lbs.
Effective Range	500 yds.	200-400 yds.	600 yds.
Length Over-all	38,5in.	34,25in.	43in.
Length Folded	28,75in.	25,39in.	34in.

The most striking difference between the three weapons is the great contrast in weight. Each of the three weapons under discussion, complete with 200 rounds and four magazines weigh:

A.R. 18, 15,00 lbs.; A.K. 47, 18,04 lbs.; F.N. 23,02 lbs.

the sights on the target and pull a full 20-round burst with a high degree of accuracy. This capability could be the deciding factor between success and failure in jungle warfare conditions.

Prolonged fire with the F.N. causes gas problems, but due to its unique gas piston design where the piston is stationary and the sleeve moves, the A.R. 18 is totally free of the possibility of gas stoppages. The makers claim that the gas system only needs cleaning after 1 000 rounds have been fired.

Field stripping of the A.R. 18 is simplicity itself, a round being the only tool required, as opposed to the combination tools of the F.N. and the complicated kits for the A.K.

There are some faults with the A.R. 18 that were noticed during trials, but they were rela-



*Ten telephone directories easily penetrated by the Armalite round.*

Taking that 200 rounds per man is the combat issue for the F.N. and the A.K., the weight differential of the rifle and ammunition allow the A.R. 18 equipped soldier to carry 500 rounds against the A.K. carrier and 600 against the F.N. This great difference in ammunition scales per weapon could be the telling factor in a small unit engagement.

It is generally accepted that it is impossible to fire the F.N. rifle at full auto from the shoulder due to the tremendous recoil and even an experienced shooter finds difficulty firing the A.K. on full auto due to the short crooked stock. Not so with the Armalite. Its total lack of recoil and "straight line" design enable the firer to hold

tively minor. It was felt that the design of the cocking handle was awkward and tended to catch in vegetation, and the positioning of the magazine release catch was such that it was possible to inadvertently depress it and lose the magazine.

It is the opinion of all who fired the Armalite that it is a light weapon, accurate and comfortable to fire. It has been tested thoroughly throughout the world under the severest conditions and is recognized by many authorities as being superior to any weapon in its class. The time will come when our military authorities will have to consider re-arming with the 5,56 mm in keeping with world trends, and surely the A.R. 18 must rank as the obvious choice.



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## COMMUNICATION AND TACTICS WING.

The Officer postings are out and the OC has discovered that he will have to get used to wall to wall rugs and scatter cushions for mattresses due to the small houses on offer in the "Big City".

We have an ES assistant instructors' course in the wing at present. It is proving to be a very high-spirited course, and the students are enjoying themselves. They are working hard and are finding out that training and instruction require much thought and preparation. Students "Own Choice" subjects have varied from "how to cook pancakes" to the gentle art of "knitting".

The African ORL course is moving into its final weeks. All they have ahead are their final exercises and revision before trade testing. We wish them the best of luck and may they have interesting and enjoyable careers in the Corps.

The African Keyboard course started with all students failing the assessment test. This had the desired effect and the students have worked hard.

Sgt. Mutizwa is due to rejoin us after a long course at Gwelo.

## NATIONAL SERVICE WING:

Intake 129 has now departed, but two lucky ones have remained at the Wing where they are going to be employed as assistant instructors for the duration of their ENS training. They are L/cpls. Clack and Visagie and they are very keen to get stuck into Intake 131 which joins us on 18th June. The policy has now been accepted that we shall have two assistant instructors from every third intake and this should solve the shortage of regular staff very nicely.

Unfortunately the OC, Capt. Clarke, is posted to 5 Sig. Sqn. early in July. His party piece is the Maori Haka (war dance), which is enough to make anyone go on the dry — perhaps it could be used as a secret weapon. We shall be sorry to lose him and take this oppor-

tunity of wishing Mrs. Clarke and himself all the best in the future.

## TECHNICAL WING:

The 18th May saw the departure of Course Sigs./22(3). Fortunately trade tests results were out prior to their departure, which meant some of the "Fundis" could look forward to putting this "know-how" to work in their respective workshops. Others stayed behind to master the finer points to soldiering — (the soldering will come later).

Lt. Harris has taken this golden opportunity to squeeze in a couple of weeks' leave. After the "thousand griefs and untold sorrows" encountered over the last nine months, we are completely convinced that it can only be "well deserved".

Course Sigs./55(2) commenced on the 21st and we would like to take this opportunity to welcome Cpl. Tarusenga, Smn. Kisito and Smn. Patrick to the School. As this is an ES upgrading course, we would like to take this opportunity in wishing them the best of luck and do hope that the knowledge gained will enable them to "tackle any charging engine in the country".

## ROYAL SIGNALS (THE FIRST TWENTY YEARS CONTINUED):

Although the weather was hot, Royal Signals personnel in India generally kept good health and this was attributed to the amount of individual training that was carried out. However, occasionally a man would die of some natural disease or heat-stroke and a full military funeral would always take place with all the pomp and ceremony including the band with muffled drums, firing party, gun carriage, escort, trumpeters and mourners. It was the custom when a mounted officer died for his charger to take pride of place with the deceased's boots reversed in the stirrups. Although the troops enjoyed funerals, they hated compulsory church parades

when they had to be togged up in their best stiffly-starched uniforms.

Lieutenant (later Brigadier) L. C. C. Harrison won the first Royal Signals MC during the Burma Rebellion of 1930-32. The first DSOs were won in Waziristan in 1936-39 by Lt. Colonel (later Major-General Sir Ronald) Penny and Lieutenant-Colonel (later Major-General) C. H. H. Vulliamy.

The normal tour of duty in India was five years that could be extended in certain circumstances to six. Soldiers were allowed no home leave during the tour, but once the tour was completed and he volunteered for a further tour, he was allowed eight months furlough in Great Britain. For money reasons, a number did do more than one tour.

British signalmen were mainly used on frontier operations, but there were other places where they were to be found. In 1922, there was friction between the Turks and Greeks and 2nd Division Signals formed part of an expeditionary force to Chenak on the Asia Minor side of the Dardenelles. In 1935, 1st Divisional Signals provided communications for the International Supervisory Staff for the SAAR Plebiscite and in the following year were serving in Palestine, where they remained on active service until 1939.

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# N. A. T. O. and S. A. L. T.

By A. J. Barker

Phase I of the strategic arms limitation talks (S.A.L.T.) was concluded last May, when President Nixon for the U.S.A. and Mr. Brezhnev for the Soviet Union signed a nuclear arms limitation agreement. By a formal treaty, each nation will limit itself to two anti-ballistic missile systems (A.B.M.)—one defending the national capital, and the other protecting an offensive missile base. In an "executive agreement" both countries have also opted to freeze the numbers of land-based ballistic missiles (I.C.B.M.s) at their present level, and to limit the numbers of missile-carrying submarines to those in existence or under construction.

On present estimates this gives the U.S. 1 054 land-based missiles compared with about 1 600 for the Russians, and a Soviet edge in Polaris-type submarines of 42 to 41. (The numerical Russian advantage in submarines is misleading, however, since the U.S. could deliver 5 700 nuclear warheads to the Soviet Union's 2 500). No mention is made in either document of the 550 American "tactical" fighter bombers in Europe, or the 700 medium-range Soviet missiles targeted on Western Europe. Nor has any limitation been put on the number or yield of the warheads fixed to the permitted number of missiles, or on refinement such as improved guidance systems.

The negotiations which preceded the signing of this deal took two and a half years, during which the Russians deployed about 50 per cent more I.C.B.M.s and increased the size of their submarine missile force. Neither the treaty nor the executive agreement includes any clause reversing the numerical advantage they have attained. Furthermore as the ". . . modernization and replacement of strategic offensive ballistic missiles and launchers . . ." is permitted by Article IV, the Russians must be expected to improve the position qualitatively in the months ahead.

Concern about these facts is neither unreasonable nor unjustified. Before the deal can be condemned on this basis, however, two other facts need to be taken into consideration:

First: On purely technical grounds, numbers of missiles do not give an accurate picture of the U.S.-U.S.S.R. strategic balance. Numbers of independently targeted warheads are a better

indication of nuclear strength than numbers of missiles, since it is the warhead which does the damage, not the missile, and the United States is believed to be well ahead of the Soviet Union in the development of multiple-warhead independently targeted missiles (M.I.R.V.s). Some Russian missiles are known to have multiple warheads, but as these are not independently aimed they are a lot less dangerous. At the same time it is as well to remember that it is only a matter of time before the Russians achieve the level of technology required for the production of M.I.R.V.s.

Second: The size of both sides' strategic nuclear force has now reached the point at which it is not clear whether marginal differences in numbers of warheads or missiles are of critical importance. In the 1950s, when neither side had what is now called "strategic sufficiency," the maintenance of a superior nuclear arsenal was vital to the Americans. Since then, however, the strength of both the U.S. and the U.S.S.R. has increased to a point where one can destroy the other no matter who strikes first. Because there is an instinctive tendency to focus on the clear and simple measure of relative strengths — the number of missiles each side possesses and the megatonnage they can deliver — such considerations tend to be forgotten. The fact remains that both sides will continue to retain the ability to pulverize the other no matter what technological advances are made. Thus the concentration of resources on the stockpiling of more nuclear weapons than are needed tends to obscure the more crucial problems which do not revolve around the relative size of U.S. and Soviet strategic forces.

The situation which existed in Europe before 1914 may be considered analogous. Germany, France and Russia were then competing in a similar way to the U.S. and U.S.S.R. today. Each of the three European countries kept the size of its rival's army under close and anxious scrutiny, and if the size of one increased the other followed suit with a costly parallel increase. Yet, on the brink of war in July, 1914, the critical military factor was not that France's standing army was larger than that of Germany, that Germany's reserves of manpower were greater than those of France, or that Russia's army was bigger than either of the other two. The key issue turned out to be the fact that all three countries' mobilization plans were tied to split-second schedules, with each believing that success would go to whoever mobilized first. In consequence all three felt compelled to anticipate the other, and to mobilize before the resources of diplomacy had been exhausted.

Nor was the numerical balance between the three armies decisive in the fighting that ensued. German and Russian victories in August, 1914,

and the defeats at the Marne and Tannenberg later in the summer owed more to the initial deployments of the armies, to the quality of the weapons, and to the failure of supply services than to any differences in the over-all strengths of the countries concerned. Leaders on both sides might have managed to keep the peace, and, failing that, to avert defeat, if they had worried more about the mobilization and technical problems and less about numerical superiority. As in 1914, the modern equivalents of these problems do not have much to do with today's dramatic measure of strength: the numerical missile balance between the United States and the Soviet Union, so they get relatively short shrift in the press and in public debate.

What kind of weapons should be deployed to maintain the existing deterrence equilibrium is the first of these problems. Up to now the certainty of retaliation and the fact that there has been no reliable defence against such retaliation has effectively deterred any would be aggressor from launching a nuclear attack. But this situation is altered if the Russians can deploy enough missiles to destroy the U.S. land-based missiles, develop effective anti-submarine techniques enabling them to sink the American missile submarines, or deploy enough A.B.M.s to effectively blunt a reprisal attack. (In such circumstances the idea of striking first is relatively more attractive than riding out an attack and retaliating — if "attractive" is the proper word with which to distinguish 30 million dead from 100 million). Technological developments during the last decade have thus increased the risk of nuclear war. The danger depends more on the types of weapons available to both sides than on their numbers, and it cannot be averted by simply expanding the scale of strategic forces.

Judging by the S.A.L.T. negotiations, both the U.S. and the U.S.S.R. have concluded that the best way of insuring against a reprisal not being blunted by A.B.M.s is an agreement controlling the scope of A.B.M. defences. The treaty which the two super-powers have signed, represents a compromise between the Soviet view that each country should defend only its capital, and that the U.S., which sought to protect its second-strike capability. In practical terms, both countries will be allowed to install two A.B.M. complexes, totalling 200 missiles.

But the mere defence of a single protected missile base is not enough insurance. Much has been written about the specific characteristics of the relevant weapons systems and it is not proposed to produce more words. It is sufficient to say that a missile force which is "mirved" might well be capable of overwhelming an adversary's retaliatory force by mere strength of numbers. In the long run, one bizarre outcome of

the development and deployment of M.I.R.V.s may well be to force both sides to rely wholly on aircraft and submarines for deterrence, since land-based missiles are unlikely to be able to survive, even if they are ringed with A.B.M.s. Meantime, the U.S. are accelerating the development of an improved missile submarine (U.I.M.S.), pressing ahead with a new manned bomber, and hardening all U.S. missile sites. The cost is likely to be astronomical, and questions are already being asked as to whether it makes sense. Apart from arguments about the level of defence spending, the technical judgements are being criticized. Should the U.L.M.S. development go ahead now or hold back until a Soviet anti-submarine threat emerges more clearly, so that the next generation of U.S. missile submarines can be geared more directly to the threat? Is the kind of manned bomber envisaged as a successor to the B-52 the right one, or would a different and less expensive aircraft fill the bill? Is the hardening of missile sites sufficiently effective? Indeed, are land-based missiles needed as well as bombers?

These then are some of the problems behind the S.A.L.T. agreements. So far they have been considered only in a super-power setting. But Europe is the third most important power centre in the world, and N.A.T.O. represents its security interests. How, then, does the American-Soviet nuclear-arms package affect N.A.T.O.?

In sum the N.A.T.O. picture is not a happy one. Together, Western Europe and the U.S. have a power potential which greatly overshadows that of the U.S.S.R. and Eastern Europe. But the figures quoted in the context of the S.A.L.T. agreements will serve to show that the Russians have been working hard to achieve strategic parity with the whole Atlantic Alliance. What they have achieved so far is nothing short of spectacular. Besides expanding their strategic nuclear force, they have built up a powerful modern navy which is extremely active in the Mediterranean, South Atlantic and Indian Oceans. All the evidence indicates that this is another expansionist trend — one more means of projecting Soviet military power overseas. On land, where 64 Warsaw Pact divisions face 24 N.A.T.O. divisions, the Russians have concentrated on the development and issue of better equipment rather than increasing their superiority of 2 to 1 in manpower. A new medium tank is on the production line, more T-62 tanks and more artillery have been put into service, new amphibious armoured personnel carriers and new mobile launchers have been introduced. It may be that the ideological disputes and border clashes with China have made the idea of a detente with the U.S. seem welcome. But Soviet forces along the Chinese

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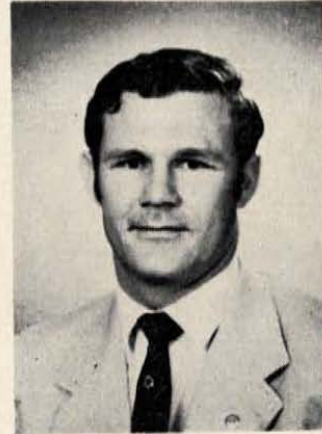
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border have been reinforced without any weakening of the forces in Europe, and the line-up opposite N.A.T.O. has not been affected.

Without N.A.T.O. most or all of Western Europe would undoubtedly have been lost to Communism before Stalin's death called a temporary halt to Soviet expansion, N.A.T.O. has always had to work on a shoestring, yet it now faces both the challenge of a new strategic concept and the likelihood of a cut-back in the strength of the American manpower contribution. To have a fighting chance of holding the line in Europe against a "conventional" attack, the N.A.T.O. Supreme Commander needs double the number of troops now available to him. There is nothing new in this, it is a deficiency which has been reiterated time and time again. The story behind it is one of strategic miscalculations and political and economic muddling which started with a U.S. decision to rely for defence almost exclusively on nuclear weapons. Coupled with the misleading Communist "peace offensive" during the lull in Soviet aggressiveness after Stalin's death, this decision paralysed the original drive for an initial N.A.T.O. force of 50 divisions in 1952, rising to a strength of 96 divisions by the end of 1954. However, the naive theory of an internal Communist collapse, coupled with the theory that conventional forces would be replaced by atom bombs, dulled the sense of urgency in the N.A.T.O. build-up and resulted in a revision of the manpower targets. Other factors — such as France's war in Algeria, misgivings about West German re-militarization, and economic difficulties stemming from a general reluctance to make material sacrifices for collective security — left even the revised contingents far beyond practical reach. The result has been a continuing weakness in conventional N.A.T.O. forces.

The arithmetic of the relative strengths of N.A.T.O. and Warsaw Pact forces line-up is obvious. It represents a menace with which the 24 N.A.T.O. divisions (26 if two French divisions are included) can hardly be expected to cope without the use of nuclear weapons. Yet, without any consideration of the effect of the S.A.L.T. talks on American thinking, the U.S. and the major Western European nations have always had different strategic concepts in regard to the use of nuclear firepower in Western Europe.

In simplified form, these differences are shown in Table 1. In essence, the European countries are more concerned with deterrence than defence, and they distrust the U.S. concept of a flexible response. As an effort to get Europe to build up its conventional forces it has not been particularly successful, and few people believe any President of the United States can

be relied upon to authorize the employment of nuclear weapons on a European battlefield, knowing that this will inevitably lead to a nuclear exchange in which American cities will be destroyed and millions of American citizens will be killed and maimed. In the climate of Soviet-American relations engendered by the S.A.L.T. agreements, the American nuclear strategy for Europe has lost any validity it ever had.

TABLE 1

United States	Britain
<b>Flexible Response</b>	<b>Pause</b>
Prolonged conventional defence before using tactical nuclear weapons.	Selective use of nuclear weapons to demonstrate resolve.
France	West Germany
<b>Nuclear Retaliation</b>	<b>Forward Defence</b>
Defence based wholly on strategic deterrence.	Almost immediate use of nuclear weapons.

What then of the future? It has been said that the milestone of the past decade was the realization by the big nuclear powers of the futility of wars as the instrument of foreign policy. It would, however, be naive to expect that reason and amity will replace threats and blackmail in big power dealings. Communism is still bent on destroying its opponents; Krushchev's "we will bury you" still stands. Only the methods for implementing the plans to destroy the free world are changing. First, it appears that the defensive shield of the West is to be smashed. Not by war, but by a high-pressure campaign for disarmament while the armed might of the Soviet empire is being built up and consolidated. The European Security Conference proposed by the Warsaw Pact countries can be seen as part of this campaign. Second: And this is likely to be the most imminent threat — an all-out economic offensive designed to capture world markets can be expected. Whether "peaceful competition" can succeed, however, will depend on the ability of the free countries to recognize the danger, stop their economic rivalry, and pool and co-ordinate their resources in time to nip the Communist trade offensive in the bud.

Finally, the Communists are hoping that greed and hate — their faithful allies — will get the better of our common sense. They will forment strikes and try to turn them into "class war". In recent months there has been ample evidence of such tactics.

In this context the improvement in the international climate that was acclaimed after President Nixon's visit to Moscow loses much of its promising lustre.

(Courtesy Army Quarterly)

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# INFANTRY OF THE SEVENTIES

by Col. R. H. Siegrist, U.S. Army

Infantry, the nucleus of the fighting strength of the Army, is also the focal point of the Army's combat power. To improve Infantry's capability and the combat-effectiveness contribution this important branch makes to the combined-arms team, great effort has been expended over the years, and continues to be expended to meet the challenges of the future.

As Infantry views and prepares for the years ahead, it is building new concepts and organizational structures, and selecting those material options which will extend its current capability and provide a basis for overcoming identified weaknesses. In the 1970s Infantry stands on the threshold of enormous potential increases in its fighting capability. These possible gains are forecast in new concepts and emerging doctrine, new organizational structures, and the application of advancing and expanding technology to meet Infantry's specific needs, as well as better testing and training methods. One area which serves as a basis for placing progress in perspective is the development of equipment designed to meet the special requirements of modern Infantry.

Today, technology is literally exploding and much can, and is being done to develop the kind of equipment Infantry seeks. However, in the decade ahead, Infantry must table its requirements in the face of increasing budgetary constraints, and this means reduced assets. With less manpower, smaller units, and a shrinking budget, Infantry will be expected to do more with less in the face of ever-increasing mission requirements. On the other hand, the Army and all Infantrymen must guard against reductions that would draw down Infantry's firepower and mobility and thus its combat power. Austerity forces the return to lean-and-mean units. Infantry seeks to achieve a part of this goal by careful selection of equipment options from among the many that are available. There is

no room for mistakes. Infantry must seek and obtain only those items which directly increase capability without staggering cost and manpower implications. The most reasonable approach may be to accept something less than the maximum potential offered by a piece of equipment in favour of lower cost, higher density, simplicity, and reduced maintenance and training burdens.

An assessment of the threat and a review of our current ability provides a valid point of departure for answering the what and why of Infantry development. Infantry's greatest material needs have, for many years, been in the areas of intelligence, firepower and mobility. While great strides have been made, a comparison of current capabilities with the projected threat would highlight many areas of marginal capability and others that need continued improvement.

Infantrymen recognize the weakness in detecting the enemy, to locate with pinpoint accuracy his units and weapons, and to correctly assess his intentions. This capability gap has existed within Infantry units over many TOE revisions and has not been closed adequately by the contributions of external intelligence support.

## INTELLIGENCE

### The Capability Gap

- \* Surveillance and Detection
- \* Position Location and Navigation
- \* Target Acquisition

### Infantry Needs

- \* Day/Night All-Weather Foliage Penetration Surveillance Devices
- \* Day/Night, All-Weather Accurate Target Acquisition Devices.
- \* Reliable, Accurate, Lightweight Position Location and Navigation Equipment.

## SURVEILLANCE:

While there has been increasing improvement through the exploitation of technology, intelligence remains a key area for improvement.

There are, however, continuing equipment developments designed for Infantry which hold the promise of providing a better ability to find the enemy, to acquire targets with precision, and to accurately locate positions and navigate over rough terrain. The current inventory of night vision equipment — the image-intensification systems which amplify natural light or artificial illumination — have provided a passive night surveillance and target acquisition item of particular value. However, the burdens associated with those individual and crew-served night vision sights and the medium-range night observation device have been rather significant in terms of bulk, weight, and cost. Continued research in the field of image-intensification technology offers the potential for a new generation of starlight scopes with greater capability at reduced size, lighter weight, and less cost.

Thermal imagery is one of those exploding technologies with the potential for vastly improving surveillance. This technology can now provide small, light, hand held equipment which will operate efficiently in most weather conditions, penetrate light foliage or camouflage, and assist in detection of buried mines and boobytraps. The handheld thermal viewer is an important product of this technology and will provide Infantry squads and platoons with a lightweight device to improve their surveillance, detection, and target acquisition tasks.

In the past Infantry has relied upon the man-portable, short-range ground surveillance radar, AN/PPS-5, for rapid identification and accurate target location. Although this radar met Infantry's performance requirements, but bulk and weight of the system was a significant burden for small Infantry units. Now in engineering development, the very short range radar (approximately 3 700 metres) AN/PPS-15, will provide the rifle company with a more portable surveillance and detection means at a weight of less than 25 pounds. To complement the capabilities of this new radar, lightweight equipment is under development to provide the rifle platoon an organic early-warning capability. This device, a seismic and magnetic sensor system, will weigh less than 13 pounds and will add significantly to the platoon's capability for self-protection in a defensive posture.

To provide small unit leaders, mortar observers, and scouts with the ability to accurately range to targets and thereby increase first-round hit/kill probabilities, a four-pound, hand-held laser rangefinder will be fielded. This development will provide Infantrymen with a reliable and highly accurate solution to the age-old problem of range determination. However, accurate rangefinding is only one of the problems associated with intelligence and target

acquisition; the other is that of accurate position location.

#### NAVIGATION:

The Infantry has lived continually with the problems of determining precise locations and accurately navigating in difficult terrain. To a great extent, this talent is still dependent on individual skills, the magnetic compass, and the map. Errors are frequent and often mistakes are made in locating and fixing both enemy and friendly ground units. Similar location and positioning problems exist for vehicles and Army aircraft operating with Infantry. Development of the positioning and navigation system (PANS) has been designed to take advantage of Long Range Navigation (LORAN) technology and involves time interval and measurement of radio signals from known locations and the display of this data in eight-digit map co-ordinates. This development offers the potential for Army aircraft, vehicles and Infantrymen to accurately navigate and determine their locations. The potential of this development could make a sizeable contribution to the effectiveness of small Infantry units, fire team through company.

#### ANTI-ARMOUR:

Since America's entry into World War II, great studies have been made in Infantry fire-power systems, and the future holds promise of further increases. Despite those advances, much improvement is still needed and can be achieved in anti-armour weapons systems, indirect fire capability and direct fire weapons.

#### FIREPOWER

##### The Capability Gap

- \* Anti-armour Weapons Systems
- \* Lightweight, Mobile Mortar System
- \* Sustained Automatic Fire at Squad/Fire Team Level

##### Infantry Needs

- \* Anti-armour/Assault Weapons with Day/Night Sighting Systems
- \* Aerial Anti-armour Systems
- \* Lightweight Company Mortar
- \* Squad Automatic Weapons

The Infantryman of today is equipped with organic anti-armour/assault weapons of lighter weight, greater accuracy, and a higher kill potential or lethality than in earlier days. The light anti-armour/assault weapon (LAW) has satisfied the short-range role for the last 12 years. This weapon has reliability and lethality shortcomings, but product-improvement programmes will be able to achieve greater accuracy, some range increase, a more lethal warhead and a better sighting system. The Infantryman needs a better LAW to accomplish the task of short-range tank-killing. (Anti-armour doctrine stresses the engagement of enemy tanks at maximum ranges; the medium and heavy

anti-armour systems are designed for this task). The concept that the LAW, as a piece of ammunition, demands minimum training and can convert any Infantryman into a short-range tank killer is valid. The LAW fulfills the Infantryman's need for an emergency-type anti-armour weapon available when enemy armour penetrates the long and medium range capabilities of Heavy Anti-tank Weapon (HAW) and Medium Anti-tank Weapon (MAW) and closes on small Infantry units. Efforts to develop a new, short-range anti-armour weapon have been costly, and as a consequence product-improvement on the LAW has been delayed. The Infantryman needs an improved short-range anti-armour system, but not a new crew-served weapon competing with the medium-range system for Infantry spaces and dollars.

The XM47 Dragon missile system, which has recently completed expanded service testing, provides the Infantryman with a reliable man-portable, medium-range anti-armour weapon. This system, together with the long-range accuracy and lethality of TOW will provide the Infantry battalion and company with an anti-armour punch never before achieved. To complement these systems and provide a full capability, current efforts are directed toward the development of night sights for both TOW and Dragon. The thermal night sight used with the Dragon on missile system has demonstrated its capability for passive operation in total darkness and provides a limited penetration of fog, light foliage, and camouflage. Recent developments have extended the range of the thermal night sight to that of the TOW and Dragon systems under certain conditions. Test firings have proven the Dragon thermal night sight to be compatible with TOW, and the commonality of one sight for both systems offers the potential for significant dollar savings.

To complement its ground anti-armour systems, Infantry is evaluating the proposition of a large number of unsophisticated, reliable, relatively inexpensive aerial anti-armour systems to be employed in aerial anti-armour units at the Infantry battalion level. This concept would provide the battalion and brigade the anti-armour punch necessary to defeat the most serious armour threat without detracting from the offensive capability of supporting tank units. To achieve this goal, a product-improvement of the OH-6 helicopter with two TOW systems and a stabilized sighting system is being considered as a possibility. This approach would provide a true battalion anti-armour aerial system of proven capability — one which would live in the battalion forward area, be maintained further to the rear, and provide responsiveness and total effectiveness under a single ground

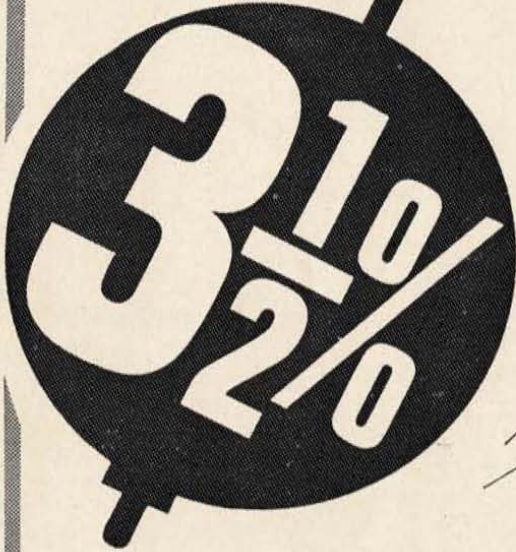
commander. This type of system could be organic to aerial sections of the battalion anti-tank platoon and be employed routinely with committed companies. The battalion anti-armour aerial system could be a day/limited visibility hunter-killer with the primary mission of aerial anti-tank support, but with the added capabilities of defeating all thin-skinned armour vehicles. In addition, these vehicles could perform limited reconnaissance, adjust mortar fire and position tank-killer teams (Dragon and TOW) in forward areas. Limited testing at Fort Bragg by the 82nd Airborne Division in the summer of 1971 suggested the value of this concept. Attack helicopter testing in Germany within the last two years has reinforced the survivability and exchange ratio of this approach for defeating the most serious tank/mechanized threat.

### **MORTARS:**


In the near future, Infantrymen must decide upon the type of mortars required in the decade ahead. Of equal importance will be the decision of where to locate these mortars, that is, do Infantry battalions have a valid requirement for mortars both at company and battalion level, or should mortars be organic to only one or other? A part of this broad consideration also involves the development of the lightweight company mortar and the production of lighter and more lethal ammunition to facilitate the mobility of Infantry operating in difficult terrain. Current efforts are directed toward development of a 60mm mortar with range and lethality close to that of the present 81mm mortar at about one-third of the weight. Parallel fuse developments are seeking a safe, reliable, low-cost, multi-purpose fuse to provide, in a single fuse, the full range of options now available in a variety of fifteen different fuse types. Recent studies and emerging results of a computer simulation seem to indicate that the most combat cost effective approach is to provide mortars at both company and battalion level. This would take the form of a combination of the new 60mm lightweight company mortar and a product improved 81mm mortar at battalion. This mix of mortar systems should be most effective when used to engage the bulk of Infantry targets inside 5 000 metres while relying upon direct support artillery to engage targets beyond that range.

The question of the future role of the 4.2-inch mortar is under study and remains to be answered. However, it is apparent that the 4.2-inch mortar is a candidate for elimination if the new 60mm mortar and product-improved 81mm mortar at company/battalion level demonstrate an increased indirect fire capability. Obviously, achieved, although some limited retention of the

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achieved, although some limited retention of the 4.2-inch mortar to fire special munitions would probably be less costly than a new development for the 81mm mortar.

#### **SQUAD MACHINE GUN:**

The Infantry Rifle Unit Study IRUS-75, an exhaustive study of squad and platoon organisation utilising both field experimentation and computer simulation, recognized the need for an effective one-man, lightweight, squad automatic weapon capable of delivering a heavy volume of accurate, sustained automatic fire. Experience from Vietnam demonstrated the effectiveness of the M60 machine-gun. Although the M60 is an excellent support weapon, it did not prove to be the optimum machine-gun for the rifle squad/fire team role because of weight and size. The development of the lightweight squad automatic weapon, about half the weight of the M60 with only a slight maximum effective range decrease is well under way. Within a couple of years, the prospects appear excellent for achieving the capabilities afforded by this weapons system.

With the development of the squad automatic weapon, the future of the M60 machine-gun becomes an issue. Infantry Team evaluation of Infantry's automatic fire requirements have concluded there is a need for this capability at the squad level and within the company, but the impact of this conclusion on the future of the M60 machine-gun is uncertain.

Ultimately, the best solution may be to retain the M60 machine-gun at the company level (probably a 4- or 6-gun section within the weapons platoon to fulfil the direct support role) and rely on the squad automatic weapon to provide the sustained automatic fire required at the squad/fire team level.

#### **MOBILITY:**

The most significant weakness facing Infantry in achieving better battlefield mobility is an inability to fight mounted. The M113 armoured personnel carrier was a good vehicle in its time, however, new firepower systems, advancing technology, and the doctrinal demands of a fighting vehicle for Infantry long ago rendered the M113 obsolete. Mechanized Infantry requires a fighting vehicle that provides the options of simultaneously conducting combat against a lightly defended objective, keeping pace with the tank and maintaining the momentum of the attack. The M113 is not a fighting vehicle. Its mobility is no longer adequate, it is a poor swimmer, and it is extremely vulnerable to modern weapons. For many years the design of an advanced Infantry combat vehicle has been under consideration. Recently the FMC Corporation at San Jose, California, was awarded

the contract to initiate the Mechanised Infantry Combat Vehicle (MICV) production programme

This vehicle will provide a significant increase in capability and will enable Infantry to fully execute its mechanised doctrine. The vehicle, at about 19 tons, will be slightly larger than the 13-ton M113, and will accommodate 12 combat-loaded Infantrymen, including the driver, gunner and commander. The commander will be located to the rear and above the driver in a separate station, providing good forward visibility. The gunner for the primary armament is to be located in a separate station near the centre of the vehicle.

For close-in protection of the vehicle while mounted, the squad will have six firing ports to the sides and rear; they will also be able to fight from the open hatch position. A full width ramp will permit rapid exit and re-entry of the dismounted fighting team. The engine and transmission will be located forward with the bulk of the fuel carried at the left rear. This arrangement will provide for optimum weight distribution for land mobility and amphibious trim, permitting maximum space for the squad and its equipment. The MICV suspension system, consisting of titanium torsion bars and steel tube design, will incorporate unique concepts to increase performance while reducing weight, noise, and vibration. Increased ballistic protection will include a special combination of aluminium and steel armour for minimum weight. The dual-feed automatic cannon and the 7.62mm secondary weapon will be mounted in a one-man, fully enclosed weapon station equipped with an electro-hydraulic power stabilised drive and an integrated day/night fire control/observation system.

Present development efforts for the MICV are on schedule and funded. When this vastly improved fighting vehicle becomes available in the late 1970s, Infantry's mechanised capability will be greatly increased with a true mounted combat capability.

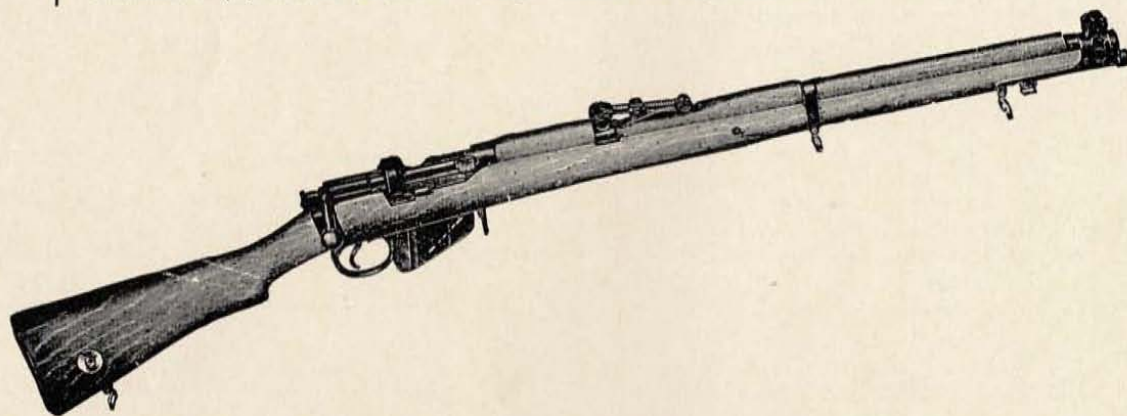
Infantry has followed prototype development and military potential testing of the XR311 dune-buggy vehicle, a development which appears to fill the need for a highly mobile, multi-purpose, wheeled, tactical vehicle capable of employment in reconnaissance, anti-armour operations, and command and control roles. The M151 (jeep) and M274 (Mule) vehicles utilised in these roles are deficient in off-road mobility, acceleration, agility, and load-carrying capability. These disadvantages greatly decrease unit effectiveness against a highly mobile force. Development of a forward area security, command and control, anti-armour, and reconnaissance (FASCAR) vehicle, using the basic technology which produced the XR311 combat vehicle

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prototype, would significantly increase off-road mobility for performing a variety of Infantry tasks. The vehicle required will have the advantages of a lower silhouette and a greater load-carrying capacity and would provide a more stable and effective firing platform for a variety of weapon systems. This programme is presently in the concept stage and required operational capability (ROC) documentation is under review.

#### ROTARY WING AIRCRAFT:

Looking toward airmobility in the future as a tried and proven concept, Infantry requirements for a better aerial squad carrier have been identified. The utility tactical transport aircraft system (UTTAS) is programmed to eventually replace the UH1 transport aircraft. UTTAS development is further supported by recognising that the UH1 by 1980 will have passed its 21st year of optional service and the majority of the fleet will be at least 15 years old. The UH1 will be significantly behind the state-of-the-art in basic design and will have long reached its maximum growth potential at the end of the 1970s. In order to retain the current level of airmobility and meet the postulated threat of the 1980s, the Infantry will rely upon development of a utility transport helicopter that can carry a rifle squad with vastly improved lift capability, reliability and speed under conditions which will require more exacting standards of total performance than the UH1. Such an aircraft will be the twin-engine, single-rotor UTTAS that can transport a rifle squad with 99 per cent reliability over 95 per cent of the Earth's surface. This aerial vehicle will be less vulnerable and its battle damage repair capability will be vastly superior to the UH1. All the improvements afforded by the UTTAS will be achieved with only a minimum increase in size and will give Infantry an airmobile capability second to none.

#### CONCLUSION.

Infantry has recognised the impact of present and future resource constraints and is attempting to formulate and blend its requirements within this austere framework. Advancing technology offers the opportunity for significant advances, but always at sizeable resource commitments. A special problem for Infantry is its relatively high density requirements that must be balanced against competing demands from other branches. To this end Infantry is working to select only those developments which are absolutely necessary and which can be realized in the quantities required and still fall within manpower and dollar restrictions.

(Courtesy: Infantry)



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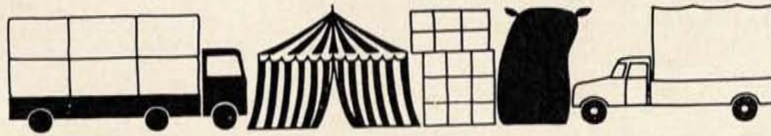
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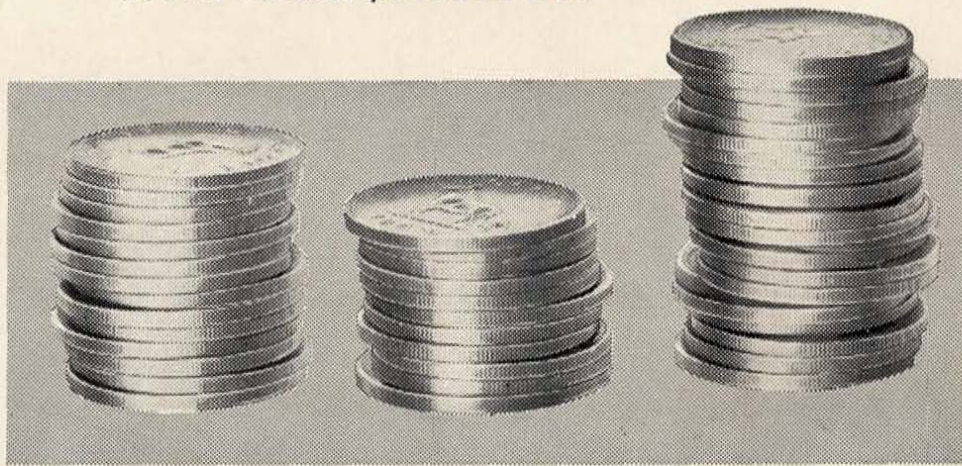


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