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ARMED FORCES

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June 1992

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- A Military Code of conduct
- SADF: New Structures?
- HIV and AIDS

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CONTENTS:

Editorial	5
NATO moves to fill Military and Political vacuum	9
SAAF Trainer Saga	10
SADF Workshop rebuild project	13
A Bigger Gun for the Rooikat	15
Denel: a new Defence Corporation	20
HIV and AIDS	22
Water systems Tested	25
A Military code of conduct	26
SADF Forces Structures for the Future	27
SA Naval Memorial Service	36

MONTHLY FEATURES:

SITREP	7
Barcom Competition	33

The recent court appearances of members of the South African Defence Force on allegations of corruption and theft, and other investigations may be in progress, is something the SADF could well have done without, especially in the existing climate. In recent months, sentences imposed by the courts for theft have been, in the opinion of many, too light to act as deterrents.

By comparison, two sentences imposed by US Military Courts illustrate their attitude: on the 17 July 1991, Specialist (NCO) Albert Sombolay was convicted of espionage and sentenced to 34 years in a military

delegates from African and other defence organisations, has created a great deal of interest. And *Armed Forces Journal* is presently engaged in investigating the possibility of holding such a seminar. A suitable venue in a neighbouring state has been identified, which could accommodate slightly more than 200 delegates, and negotiations are continuing.

Strong indications of support for the idea have been received from the local industry. Further information should be available for publication for our next issue.

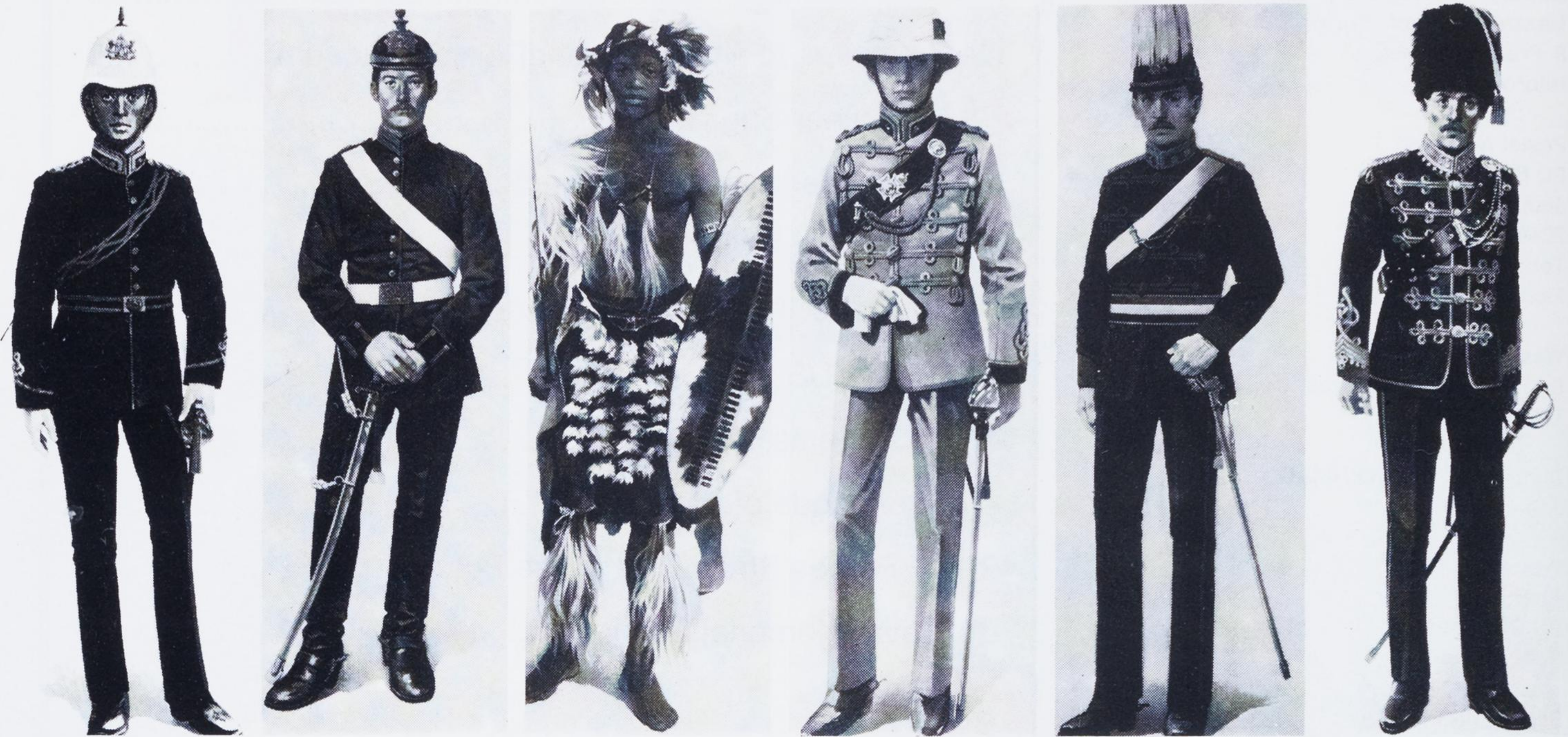
The Editor.



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EDITORIAL

There have been many, many suggestions in recent months concerning a possible restructuring of the South African Defence Force but, as far as can be ascertained, no plans for any form of restructuring have been produced.

The SA Defence Force itself appears to be holding back and very little, if any, reaction has resulted to these suggestions, nor has it been drawn into any debate by these suggestions.

No doubt there is an official policy that the SADF is following; but the question can be posed that, in the absence of any indication of an official policy, the door can be left wide open for self-styled military experts, opportunists and other adventurers to crawl out of the woodwork and establish themselves as experts in an existing vacuum.

Recent political changes in Africa have resulted in the disintegration of what were both proud and efficient defence organisations deteriorating into little more than undisciplined rabble, with crime and even mutiny becoming commonplace.

An interesting comparative study is the attitude of the South African media to the efforts of the South African Police to increase their strength by appointing partly trained "instant" or "Kits constables". The SAP were severely chastised and are still under the "wordlash". But a policeman, even a "Kits Constable" is only equipped with a baton, a pistol or a rifle, whereas a soldier can control something much larger and much more lethal.

Is the time ripe for the establishment of a knowledgeable forum that is able to advance constructive proposals?

The recent court appearances of members of the South African Defence Force on allegations of corruption and theft, and other investigations may be in progress, is something the SADF could well have done without, especially in the existing climate. In recent months, sentences imposed by the courts for theft have been, in the opinion of many, too light to act as deterrents.

By comparison, two sentences imposed by US Military Courts illustrate their attitude: on the 17 July 1991, Specialist (NCO) Albert Sombolay was convicted of espionage and sentenced to 34 years in a military

prison, and elsewhere in this issue of *Armed Forces Journal*, there is mention of a 15-year sentence imposed on a soldier for having "unprotected sex".

The official announcement of the establishment of the new organisation, Denel (Pty) Limited, to administer and control most of the manufacturing plants that fell under the control of Armscor has received wide publicity, primarily directed at the suggestion of the possible commercialisation of the plants. How these perceptions were developed or influenced, is not apparent; the readily available facts shows that this is not easily achieved. Whether these ideas and suggestions are based on information that is not readily available is not clear, but they do contradict that which is available. What the Soviet Union has found that it is not possible to plough with armoured vehicles, nor can machinery designed to produce steel helmets be converted to making buckets. Not overnight—it takes both time and an economy that can afford the items produced. The most important information that was released by the new consortium is that the expected foreign earnings for the present year could be in excess of 1,000 million Rands. A major accomplishment, with our sick economy.

It is well to remember that recent history has shown that too many, too often, have conveniently seen and accepted that only peace and prosperity were all that was on the horizon - with dire results.

The suggestions carried in our last issue concerning the holding of a seminar that would be attended by delegates from African and other defence organisations, has created a great deal of interest. And *Armed Forces Journal* is presently engaged in investigating the possibility of holding such a seminar. A suitable venue in a neighbouring state has been identified, which could accommodate slightly more than 200 delegates, and negotiations are continuing.

Strong indications of support for the idea have been received from the local industry. Further information should be available for publication for our next issue.

The Editor.



GLASNOST

NEW THINKING AND THE ANC-SACP ALLIANCE

A Parting of Ways



Dirk Kunert

Foreword: Ray S. Cline

"It casts an illuminating light on the devastating ideological backwardness of the South African Communist Party (SACP) and its political twin, the African National Congress" — Ray Cline (Former CIA Deputy Director).

This study makes a vital and much needed contribution to an understanding of the ideological composition of the SACP-ANC axis, as well as of the origins and current state of socialism in general.

NEW RELEASE FROM THE INTERNATIONAL FREEDOM FOUNDATION

This 208 page study represents the most comprehensive evaluation yet of the growing ideological divide between the Soviet Union and the SACP-ANC alliance on the future course of socialism. Written by Professor Dirk Kunert, Head of the Department of International Relations at the University of the Witwatersrand, it analyses the following key issues:

- THE IMPACT GLASNOST AND NEW THINKING HAVE HAD ON THE IDEOLOGICAL ORIENTATION OF THE SACP.
- THE STALINISATION OF THE SACP-ANC AXIS.
- THE ORIENTAL (ASIATIC) ORIGINS OF STALINISM.
- THE FAILURE OF SOCIALISM AS SEEN THROUGH THE EYES OF SOVIET COMMENTATORS, CONTRASTED WITH STATEMENTS OF SUPPORT FROM SACP AND ANC LEADERS.
- WHY SOCIALISM CANNOT BE REFORMED.

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SITREP

Is a summary of International Intelligence Reports.

ARTILLERY SUB-MUNITION FUSES

An artillery altimeter fuse for use with calibres of 105mm to 203mm for the deployment of sub-munitions has been announced by DTS Technologies. The M9053 fuse works on switch selected heights of between 150 and 1,000 meters.

GREEK APACHE

The United States is considering a proposal under which 12 Apache 64A attack helicopters would be sold to Greece. The proposal includes spares and weapon systems.

RSA SUPPLIES?

Unconfirmed reports are that South Africa has supplied a number of Eland armoured vehicles to Côte D'Ivoire. The Order of Battle of the Côte D'Ivoire listed 14 AML-60-90s and the report that the RSA has delivered 14 Eland AFVs could be seen as a replacement for these vehicles.

IRANIAN AIR FORCE MiG-29s

Russia is to supply aircraft to Iran, including a number of SU-24 Fencer strike aircraft and 20 MiG-29s.

NEW TRANSPORT AIRCRAFT

The study contracts have been issued for the possible replacement aircraft for Lockheed C-130s and Transall C-160 now operating with many of the NATO air forces. In Europe, a total of over 300 aircraft of these two types are now flying. The Future Large Aircraft (FLA) is seen as a 4-engined jet with four turbofans delivering some 18,000 lbs of thrust each with a maximum takeoff weight of some 111 metric tons carrying a 25 metric ton load over 4,800 km.

FRENCH CARRIER

The French aircraft carrier, Charles de Gaulle, is to be fitted with Sytex transmission systems developed and built by Thomson-CSF. The system will be used for processing top-secret information on a 24 hour basis.

SRI LANKA ARMOUR

Sri Lanka is reported to have been supplied with a number of T-55 (20?) tanks by Czechoslovakia from the stocks of equipment that have been withdrawn from service under the CFE Treaty.

PILKINGTON MBT SYSTEMS

Pilkington Optronics are to supply the sighting, fire control and target acquisition systems for the 127 Challenger 11 Main Battle Tanks that will be supplied to the British Army.

NEW PISTOL

The New Zealand armed forces have placed an order for the Sig-Sauer P226 9mm PB pistol.

SAUDI MCMVS

The first of 4 MCMV vessels of the Sundown type has been delivered to the Royal Saudi Navy. The minehunters are being built by Vosper Thornycroft.

TUCANO SALES

An additional 10 Embraer EMB-312 Tucano trainer aircraft have been ordered by the Peruvian Air Force. The PAF have 20 of the turboprop trainers on strength.

CUTBACK

The South African Air Force has announced that as part of the rationalisation programme currently being implemented that on 30 September 1992, 3 Squadron will be disbanded. Formed in 1940, 3 Squadron is equipped with Mirage F1CZs aircraft and during the Angolan campaign aircraft of the Squadron flew over 600 missions.

50th LIFT-OFF

The 50th lift-off of the requirement placed in 1989 of 50 missions was completed in April by the Ariane 4 from the Kourou site in French Guiana. Two satellites with a combined payload of 4,101 kg were successfully placed in orbit.

FLYING TESTBED

A Falcon 20 has been converted into a flying test bench for the testing of the Rafale electronic scan RBF2 radar system. The first flight of the Falcon lasted two hours and showed that the test system was working satisfactorily.

RUSSIAN EXPORTS

Reports indicate that Russia is pressing ahead with the sale of defence equipment on the international market. In this respect, Mikoyan Aircraft have appointed the Brazilian company of Treze Industria Aeronautics as their sole representative in South America for the MiG-29.

PAF C-130H-30

The Portuguese Air Force has taken delivery from Lockheed of a Hercules C-130H-30 bringing the number of C-130 in service to six. Two of which will be converted to C-013-H-30 standards.

SADF SAPPER TEAM IN ANGOLA

The South African Defence Force team of Sappers drawn from the SAEC presently in Angola to demonstrate the latest techniques in mine lifting and explosive device demolitions will be instructing members of the MPLA and UNITA forces.

VIRO ADVERT

SITREP

SEAKING ORDER

Westland Helicopters have received an order from the British Ministry of Defence for six Seaking helicopters and a contract to upgrade the Royal Navy's Lynx fleet.

BRITISH DEFENCE ORDERS

Included in recent British defence orders are 13 Harrier T-10s for the Royal Air Force and 5 T-4s are to be updated to T-8s for the Royal Navy. The British involvement in the Gulf War has resulted in an order for 200 ALARM missiles to replace those fired, and to increase stocks. The plans for the conversion of VC-10s to tanker transports is proceeding. The announced projects for logistical support ships confirms the government's intentions of maintaining an amphibious defence capability.

BELGIUM AUGUSTA'S

The first of a total of 46 Augusta A-109 helicopters has been delivered to the Belgium Army. The order includes anti-tank and reconnaissance versions.

AUSTRALIAN ARMY'S APC'S

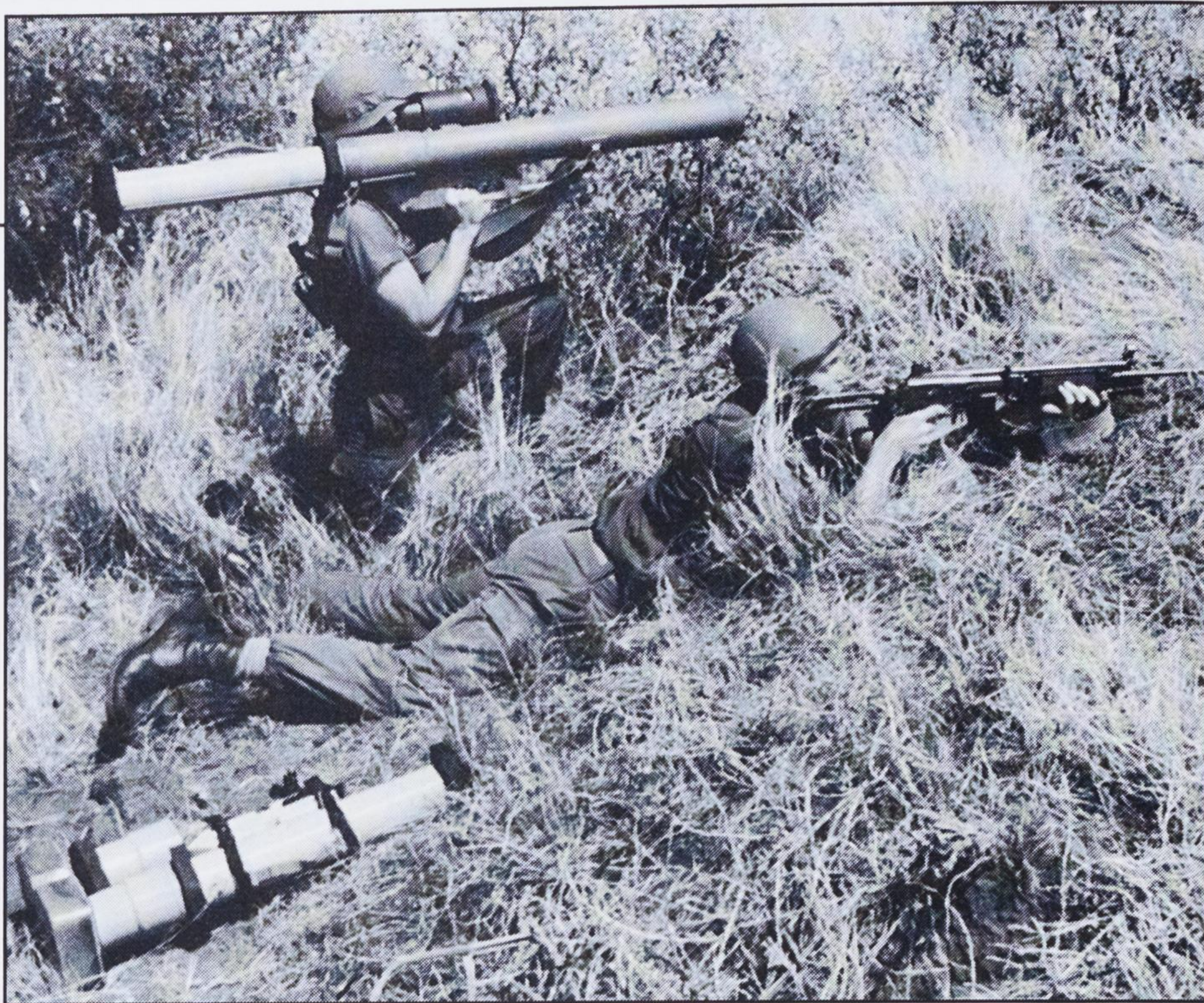
After buying 15 LAV-25s from General Motors of Canada the Australian Army has placed an order for a further 105 of the APCs. Approximately 50% of the vehicles will have to be Australian content and the vehicles will be supplied in a number of variants including command, support and ambulances.

ISLAMIC MANPOWER

The predicted labour surplus of over 4,000,000 young men who, per year, will enter the labour market in the Islamic States across the Arab world is causing concern. Estimates are that over 60% of this figure will be from Egypt, Morocco, Algeria and the Sudan. The rising Islamic sentiment that is occurring in Algeria, coupled with the large population growth and unemployment, is causing concern to strategists.

ISLAMIC POWER BLOC?

The gathering strength of the Islamic states with over 1,000 million citizens and



The reusable FT5 Light Anti-aircraft weapon. The tube can fire over 200 shots before having to be replaced, and the 99mm rocket is capable of penetrating 650mm armour. The weight of the rounds is 5,4 kg., including in the carrying mode, as shown by the ready ammunition in the photograph.

followers, is not always understood. Countries such as Pakistan and Iran which may be joined by some of the newly independent states that previously formed part of the Soviet Union could, in the near future, form a formidable power bloc. The ongoing strife in what was Yugoslavia, with Serbia directing its attacks at the Muslim areas and enclaves of what formed part of the confederation, and the reports that Iran could be looking towards a close relationship with some of the former Soviet Republics, could result in future areas of conflict. A large percentage of the international oil production is under the control of what are predominantly Muslim states. During the Gulf conflict, it was Saudi Arabia which increased production to meet the West's requirement, backed by a neutral Iran. Iran is now rebuilding its defence force at a cost of billions of US dollars, and the question is, are possible new areas of conflict appearing on the international horizon?

US OFFICER TRAINING FOR AFRICA

Five Zimbabwean Defence Force Cadets are at present undergoing training at United States institutions. Three are at West Point and two at the United States Air Force Academy. All five cadets are from the Zimbabwean Air Force.

KUWAIT F/A-18s

The first of the 40 F/A-18 Hornets ordered by Kuwait have been delivered, and the remaining aircraft are expected to arrive in Kuwait before October this year.

TRAINING TECHNIQUES

From reports received, the British Defence Military Training teams working in Namibia are not achieving the degree of success that was hoped for. This could be due to too short a time on station of the British personnel and a reduction in the time allowed for the courses. What has been referred to as a "Staff Course" is now to be completed in two months, while other courses are using philosophies and tactics that are more suited to Europe than Africa.



NATO Moves to Fill a Military and Political Vacuum

Does the North Atlantic Co-operation Council provide an example

Can a similar Council be implemented in sub-Saharan Africa

The position of the North Atlantic Treaty Organisation (NATO) in Europe has changed drastically since the collapse of the Soviet Union. Actions by NATO over the last months have strengthened the Alliance's role in Europe, and it is obvious that it is at present, and will be for the foreseeable future, the only security system for what now appears to be a combined Europe. In addition, NATO is the main link for itself and its members with North America. While there may be a host of other links through United Nations Agencies and treaties of a political nature, NATO stands out as the single organisation with an outstanding functional record that is based on a sound common denominator.

In 1991, surveys undertaken in the member countries showed a continued high level of popular support for the organisation, with Eurobarometer statistics presenting percentages at polls as high as 72% of those polled who considered that NATO was essential. The continued popular support for NATO is a result of the support that has been given by the Organisation to Marshal Shaposhnikov who, as Commander-in-Chief of the Joint Armed Forces of the Russian Commonwealth of Independent States, set up the controls that have proved effective over what were the Soviet nuclear arms. Another was the reaction of most member States in building up the Allied Forces for the Gulf War.

After the break-up of the Warsaw Pact, NATO immediately took action in establishing contact with the member states of the defunct Pact, and this has resulted in a developing liaison.

Meetings of both a collective and independent nature are held at regular intervals, dealing with a wide range of matters with members of the Defence Forces of the Eastern Bloc. Members attend NATO exercises, and NATO personnel have a programme which supports the "Work Plan for Dialogue, Partnership and Co-operation".

The Defence Organisations that were

Insert A

Statement issued at the meeting of Defence Ministers at NATO Headquarters, Brussels on 1st April 1992:

We NATO Defence Ministers and Representatives of Belgium, Canada, Denmark, Germany, Greece, Iceland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Turkey, United Kingdom, the United States, and the Defence Ministers and Representatives of Armenia, Azerbaijan, Belarus, Bulgaria, the Czech and Slovak Federal Republic, Estonia, Georgia, Hungary, Latvia, Lithuania, Moldova, Poland, Romania, Russia, Tajikistan, Ukraine and Uzbekistan met today in Brussels for the first time. We considered how we could deepen dialogue and promote co-operation between us on issues that fall within the

members of the Warsaw Pact are seeking membership of NATO which is not yet open to them. However, another organisation, the North Atlantic Co-operation Council, (NACC), has been established by NATO as a satellite organisation for these countries. A number of meetings have been held, attended by the Defence Ministers (see insert A), setting out the aims and objects of the current policy of dialogue. Some of the members of NACC, however, are not satisfied and are asking for full NATO membership. Recently, the Czechoslovak Defence Minister, Lubos Dobrovsky, made the following statement: "*The countries of Central and Eastern Europe must achieve their stability and find their place in Europe within the framework of European institutions and by means of bilateral agreements. Czechoslovakia, Poland and Hungary are very serious in applying for membership of NATO, but NATO hesitates, sets conditions and time limits and generally carries on as if the whole thing were a misunderstanding, regardless of the fact that we, like Poland and Hungary, have made it unequivocally known that we regard NATO as an important stabilising element in Europe. It would be helpful if the*

internal NATO structures could be treated more flexibly. As long as this is not done, Europe will continue to be divided into those who have the opportunity and capability to defend their democracy, and those who stand in danger of losing it."

Insert B

Statement issued at the Extraordinary Meeting of the North Atlantic Cooperation Council.

NATO Headquarters, Brussels, 10th March 1992.

We, the Foreign Ministers and representatives of the member countries of the North Atlantic Alliance, consisting of Belgium, Canada, Denmark, France, Germany, Greece, Iceland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Turkey, the United Kingdom and the United States, and the Foreign Ministers and representatives of Armenia, Azerbaijan, Belarus, Bulgaria, the Czech and Slovak Federal Republic, Estonia, Hungary, Kyrgyzstan, Latvia, Lithuania, Moldova, Poland, Romania, Russia, Tajikistan, Turkmenistan, Ukraine and Uzbekistan have gathered today in Brussels to welcome the inclusion of the additional states as partners in the North Atlantic Cooperation Council. We are determined to work together towards a new, lasting order of peace in Europe through dialogue, partnership, and cooperation.

A very positive indication of the attitude of members of the post-communist states to NATO and its future role in Europe.

The number of ex-member states of the Warsaw Pact and the Soviet Union that are future players in the European military organisations through their membership of the NACC is shown in Insert B.

NATO headquarters in Brussels have issued a list of areas for future co-operation between members of NATO and NACC, and these include the following:

MILITARY STRATEGIES: including discussion of concepts such as defensive sufficiency, stability, flexibility and crisis management.

DEFENCE MANAGEMENT: the planning and management of defence programmes in democratic societies, to include accountability, financial planning, programme budgeting and management, research and development, equipment procurement procedures, personnel management.

THE LEGAL FRAMEWORK FOR MILITARY FORCES: the establishment of a constitutional framework, the position of armed forces in a democracy, the democratic control of armed forces and civil-military relations, parliamentary accountability.

HARMONISATION OF DEFENCE PLANNING AND ARMS CONTROL: the consequences of arms control for defence planning, the role of military forces in verification, proliferation, resource implications of CFE.

EXERCISES AND TRAINING: the philosophy format, requirements and standards of training and exercises.

DEFENCE EDUCATION: organisation of education for both military and civilian defence personnel.

RESERVE FORCES: mix of active and reserve forces, force structures, training.

ENVIRONMENTAL PROTECTION: the military and the environment, protection, conservation, clean-up of facilities.

AIR TRAFFIC CONTROL: military contribution to air traffic management.

SEARCH AND RESCUE: military contribution to search and rescue activities.

MILITARY CONTRIBUTION TO HUMANITARIAN AID: practical experiences, planning, co-ordination, civil-military co-operation.

MILITARY MEDICINE: organisation and practical issues (occupational health, preventive measures, hospital management, medical supply, education).

As was suggested in the May 1992 issue of *Armed Forces Journal*, there is every reason for many of these areas of interest to be discussed by the Defence Forces of the sub-Saharan continent.



The SAAF's New Trainer

While the South African Air Force has not released any information concerning its decision as to what aircraft will replace the Harvard T6 trainers that have been one of the major factors in producing the excellent and versatile pilots that proved their worth in WWII, Korea and Angola, speculation is turning this much-sought-after contract into a TV Soap Opera saga.

It is generally accepted that the Harvard replacement order will be for not less than 40 aircraft involving a cost factor in excess of R200-million, the final cost being difficult to estimate when the total production run of the type of aircraft, its country of origin and the procurement of spares and support equipment are unknown.



There is little doubt that whatever type of aircraft is selected by the SAAF, assembly will have to be undertaken by Atlas/Simera and as is now generally part of these types of contract, while some forms of sub-assemblies will be manufactured in South Africa.

Atlas/Simera would most probably like to see the SAAF decide on the locally designed and built Ovid. Designed and built by Aerotek, a department of the CSIR, the Ovid was primarily a development platform for the testing of carbon fibre. In fact, when limited information became available about the project it was difficult to draw any information about the aircraft as it was categorised as a carbon fibre project. Bureaucracy at its best! However, the fact that the product of this project has been able to enter the SAAF stakes is a remarkable achievement and indicates the ability and expertise that exists at Aerotek and the CSIR.

While carbon fibres and other composite

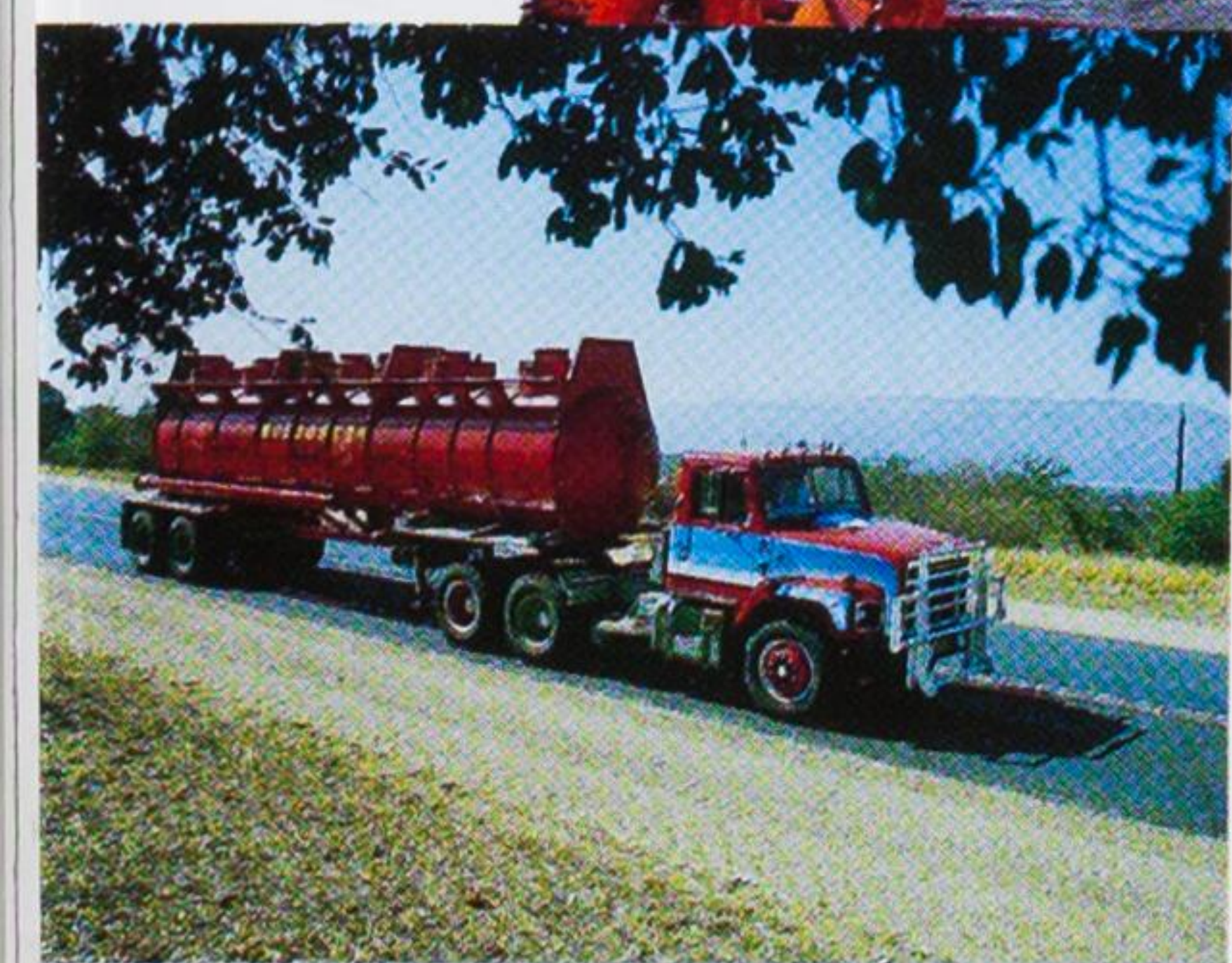
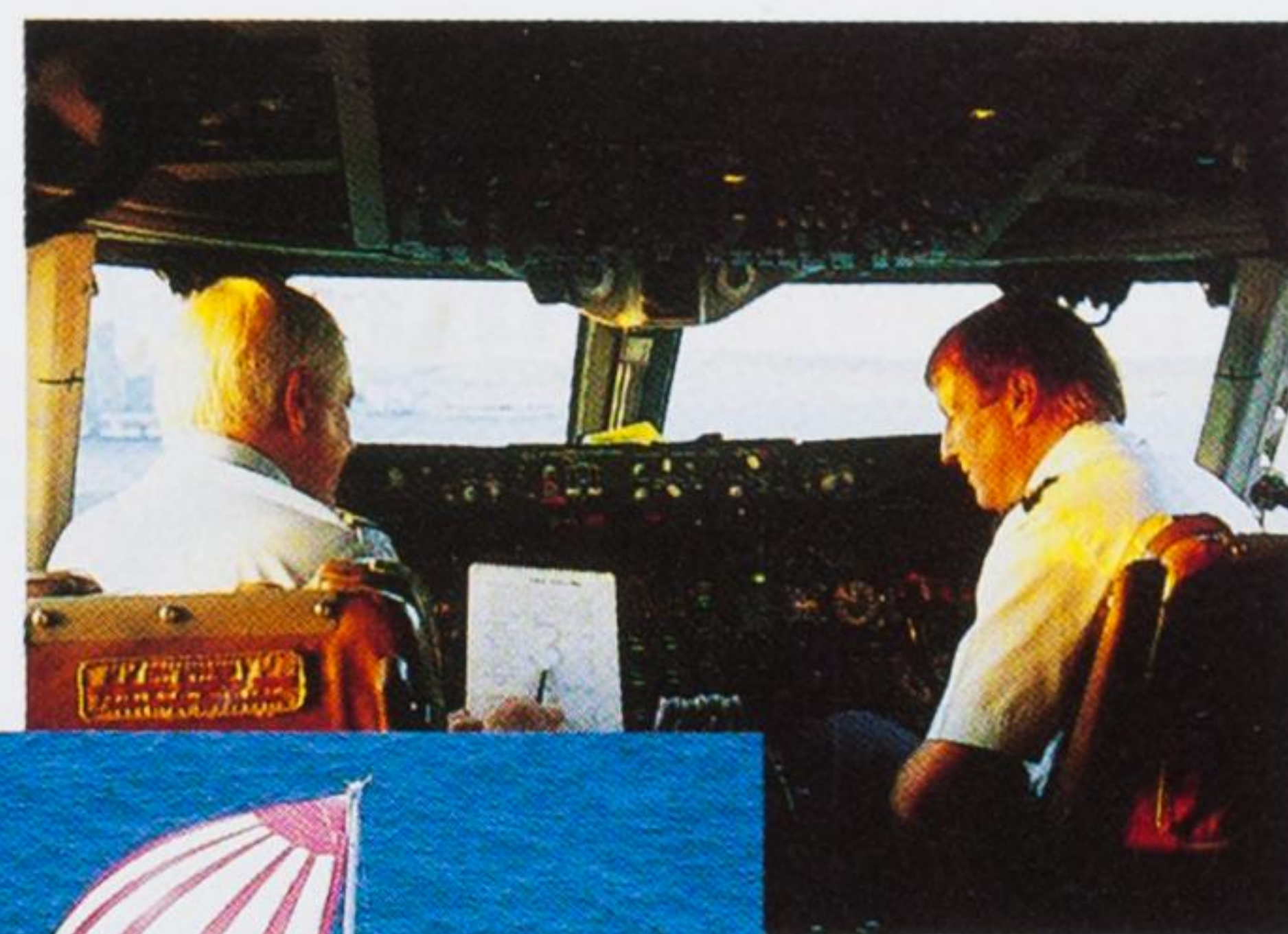
materials are being used extensively in the construction of modern military and other aircraft, whether the SAAF will decide on a type that has not been flying with other air forces and at least clocked up many thousands of flying hours, landings and some years of service, are factors against the Ovid.

What has also to be taken into consideration is the political value that can be placed on an order of this magnitude for any ailing foreign aircraft industry. And they are all ailing, with blank pages in their order books. Reports are that there are at least six foreign runners in the race including the British version of the Brazilian Tucano now in service with the Royal Air Force. The Swiss Pilatus PC-7

The Ovid trainer incorporates carbon fibre techniques in its construction. Developed originally as a carbon fibre project, it has more than met the flight requirements of a training aircraft.

is in service with the Air Wing of the Boputhatswana Defence Force and will no doubt be familiar to many of the SAAF pilots. France, Poland and Czechoslovakia are other contenders. While for some years as well, the Soviet Union has been reported to have had power plants on offer for some time and will also no doubt be interested. Brazil's Tucano, designed and produced by Embraer, is now being updated and modified along similar lines to the Shorts Tucano of the RAF and could be a formidable contender. The final decision could be made within the next few months; but whatever the choice, it will be some time before the new aircraft enters service as the SAAF's new trainer.





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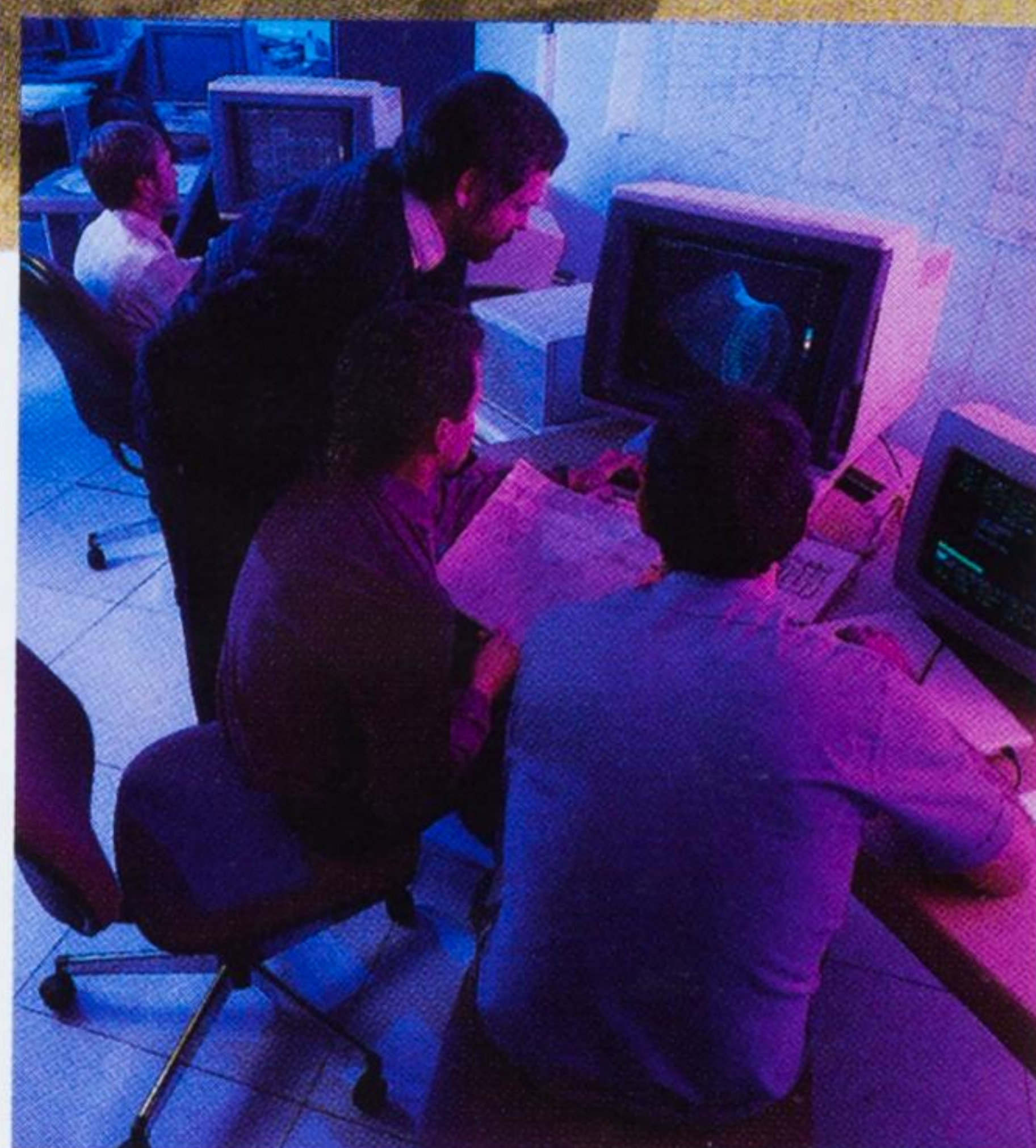
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ARMSCOR

SADF Undertakes APC Fleet Rebuild

61 Base Workshop Project

The new Buffel on stream

The Buffel, in its original form, was produced in a number of variants, all based on the SAMIL 20 chassis and powered by a 6-cylinder water-cooled diesel engine. Ungainly in appearance, the Buffel and the variants all proved themselves during operations, and was probably the best mine-resistant armoured personnel carrier then available. The driver and his 10-man crew were seldom injured by landmines detonated by the Buffel; the V-shaped hull structure and the safety harness proved to be highly successful against explosives.

Published records show that over 1,600 Buffels entered service with the South African Security Services as Armoured Personnel Carriers, Cargo Carriers, and Mobile Gun Platforms.

The new Buffel has incorporated a number of features that were found in the Wolf II APC and the Bulldog. Included in these are the rear entry doors, large armoured glass side windows and the roof with hatches that is now fitted over the driver's cab and rear section of the vehicle.

The wide rear door provides easier access to the crew compartment and should enable the vehicle to be considered for a number of other uses, including command vehicle, ambulance and goods transporter.

The ability to work with, and cut, high-quality armoured steel indicates the expertise available at 61 Base Workshop.



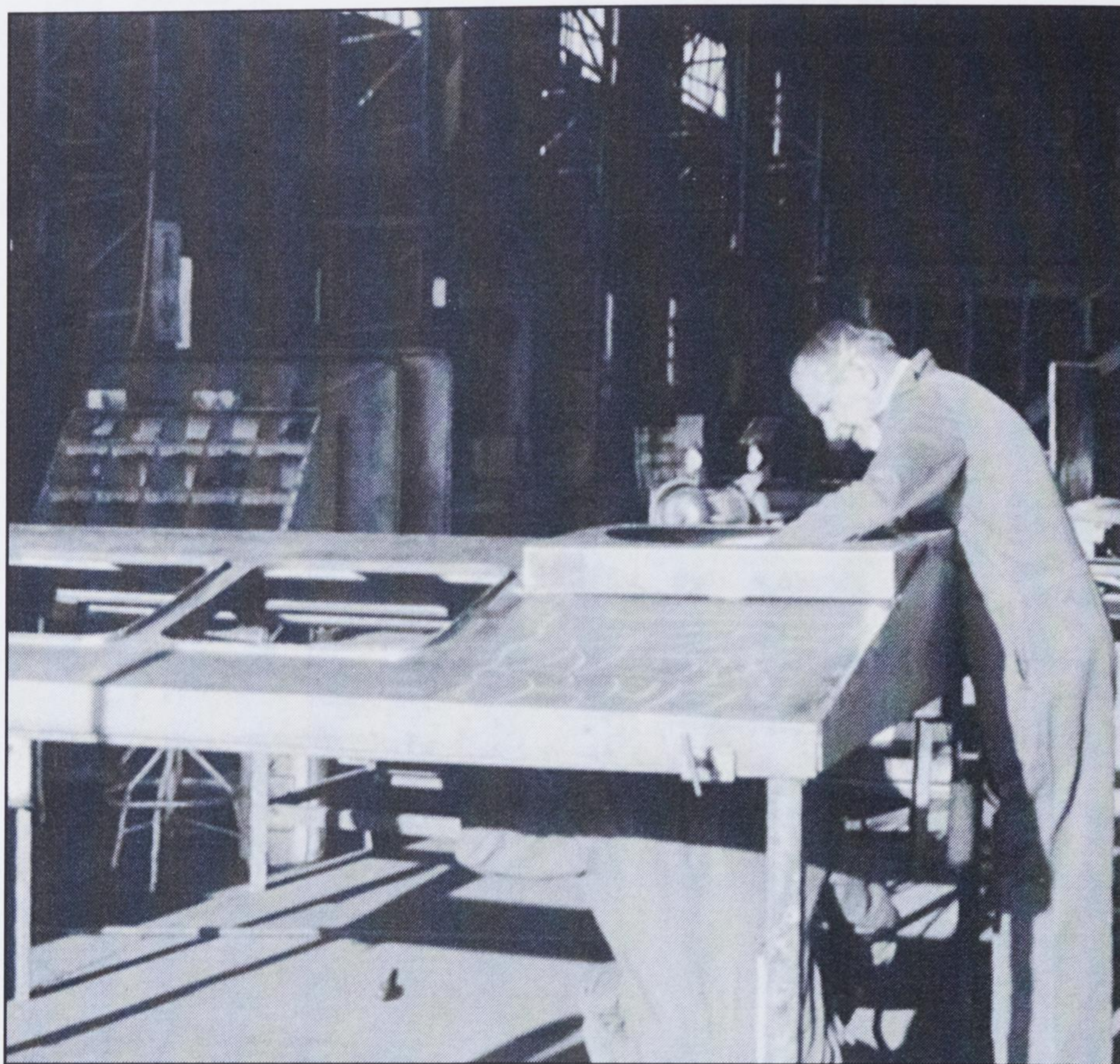
The lowering of the body has correspondingly lowered the centre of gravity and improved its road-handling and overall stability. The driver's cab is no longer separated from the troop compartment, and a grill has now been fitted to allow communication between the two sections when battened down.

Never noted for its beauty - rather as the ugly duckling of the SADF fleet of vehicles - the new Buffel's appearance is mellowing with age.

As far as can be ascertained, the rebuilding programme now being carried out by 61 Base Workshop is the first time that a project of this nature has been undertaken by the SADF, and follows a similar project now being completed by the South African Air Force, ie: the updating and rebuilding of the Dakotas. There is little doubt that projects of this nature show the "can do" ability that exists within the services, and helps boost morale.

Content-wise, the Buffel rebuild must contain very close to 100% of local material.

If the SADF finds that, with its restructuring, it does not have a requirement for the number of Buffels on its inventory, there is little doubt that there are many other Defence Forces that would be interested in acquiring proven, updated, armoured vehicles.



A roof section, showing the hatches nearing completion before being fitted to the restructured crew and driver compartments of the new Buffel.

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'A Bigger Gun for the Rooikat?

By H. A. Wessels, BSc, MBChB,
M.Med

*Owing to its length, this article will
be published in two parts.*

Part I of II Parts

Two years ago we saw the introduction of the Rooikat heavy armoured car in South Africa. This was hailed, as is virtually all South African developments in the armaments field, as "state of the art", "the best in the world", etc. Closer inspection of the vehicle indicated that the eight wheeler was very impressive indeed. Spacious, adequate armour, a good power to weight ratio, excellent suspension system and, although details are scant, an apparently sophisticated fire control system. The three-man turret housed, we noticed, a high velocity 76mm gun, 62 calibres long, based on the OTO Melara 76/62 compact naval gun.

The calibre of the ordnance immediately piques the interest of armoured vehicle aficionados. Seventy-six millimeters seemed to be decidedly on the small side for such a large and heavy vehicle, despite the fact that the gun sported impressive ballistics. Haven't we lately seen the introduction of a number of relatively light armoured vehicles armed with the standard NATO-type L7/M68, 105mm guns since the advent of the Rheinmetall SLR (Super Low Recoil) 105mm gun during the mid-eighties.

In publications, such as Jane's Armour and Artillery, ARMSCOR stated that "the 76mm gun was selected for a number of reasons, including the larger number of rounds capable of being carried when compared with a 105mm gun, the greater ease of handling ammunition while loading on the move, the optimum selection of recoil forces and firing impulses for maximum crew comfort and operational effectiveness, etc.," sounded good.

The reasons for going with the 76mm ordnance may be summarised as follows:

1. Recoil characteristics of the 76mm gun are more acceptable than that of a larger gun, specifically a standard 105mm gun.
2. A larger gun would be heavier, increasing the vehicle mass and increasing stresses on the gun-laying and training mechanisms.



3. More ammunition can be carried for the smaller gun.
4. The lighter weight of the ammunition makes it easier for the loader to handle the rounds, especially while loading on the move.
5. The Rooikat is designed as a reconnaissance vehicle, and it is not intended to fight tanks; therefore, it does not need a bigger gun.

Note: References made to the "standard 105mm gun", "the 105mm NATO gun" or the "L7/M68 gun", all refer to the type of tank gun which is fitted to numerous western MBT's, such as the American M60 and M1 Abrahams, the German Leopard 1, later marks of the British Centurian, our own Olifant, etc.

Let us look at these points one by one and examine their validity.

A number of large (over 15 tons) combat/reconnaissance armoured cars have been developed or are in the process of being developed in Western defence forces over the past 10 years or so. These vehicles are all armed with various versions

The Rooikat fitted with a 105mm gun. This version will be demonstrated during 1993.

of the standard, NATO, 105mm gun. Despite being relatively large and heavy as far as wheeled armoured vehicles go, these vehicles are very much lighter than the typical main battle tanks (MBT's), which are fitted with the 105mm gun. Examples include the following:

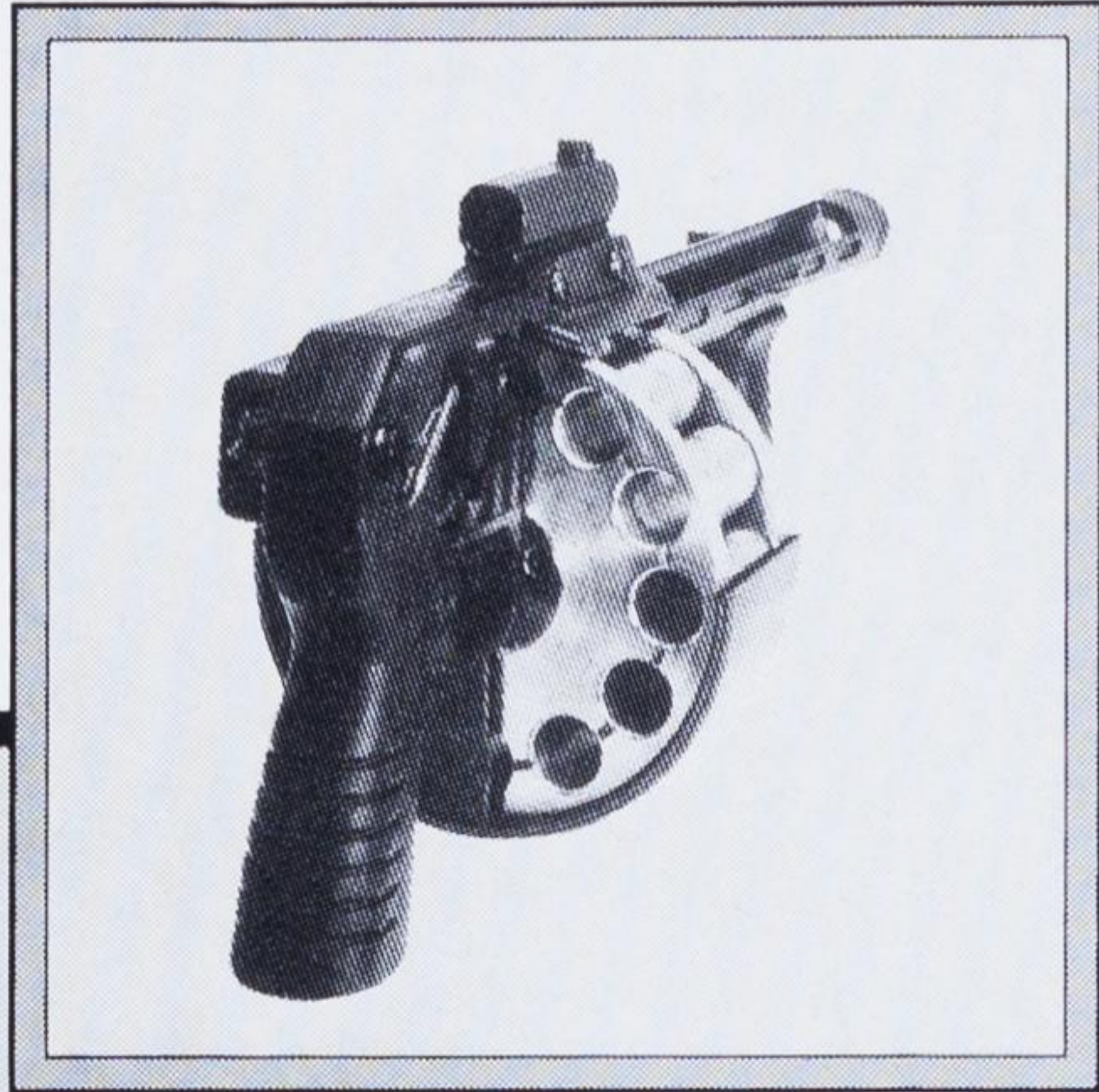
The ENGESA Sucuri (Brazil) is currently still under development. The prototype weighs 18,500 kg in combat trim. It has a six-by-six layout with a 380 hp diesel in front, next to the driver, giving a power to weight ratio of 20.5 hp/ton. The fighting compartment at the back of the vehicle houses a three-man turret, which is fitted with a 105mm OTO Melara low recoil gun capable of firing all standard types of 105mm ammunition. Ammunition carried is 30 rounds of 105mm ammunition.

The AMX-10RC Reconnaissance vehicle (France): This 6 x 6 car has been in production since 1978. In its latest version, it weighs approximately 16,000 kg, is powered by a 300 hp diesel engine fitted at the back of the vehicle and mounts a three-man turret. The original

Protecta-superior close-combat support

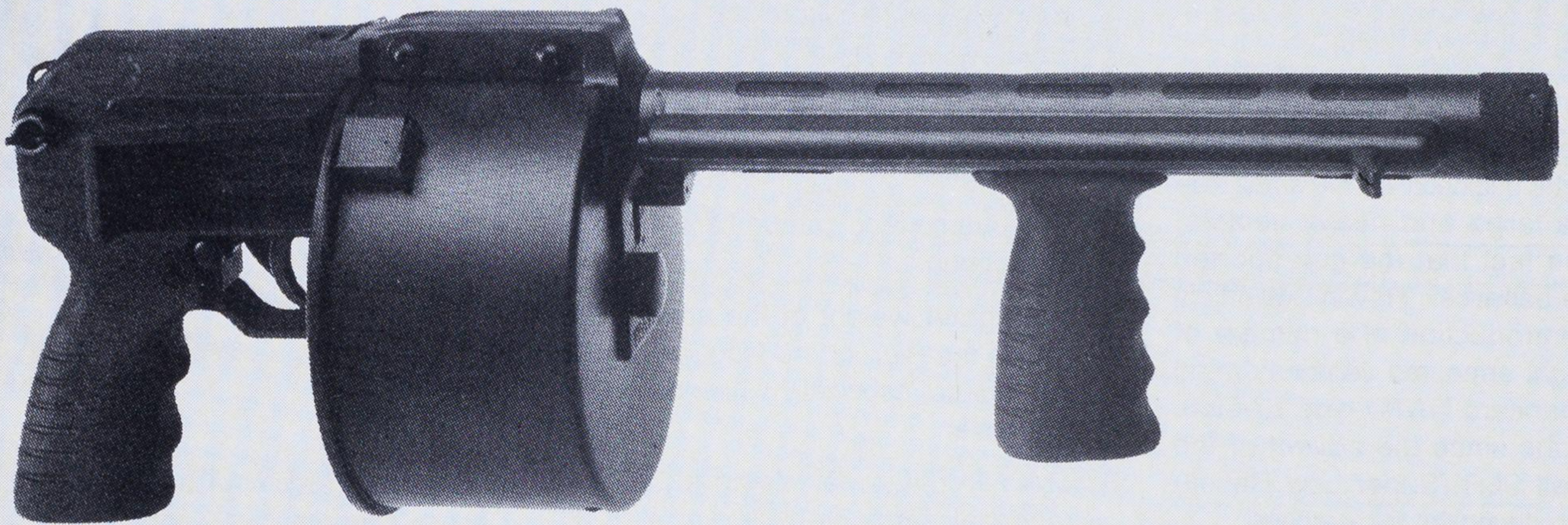
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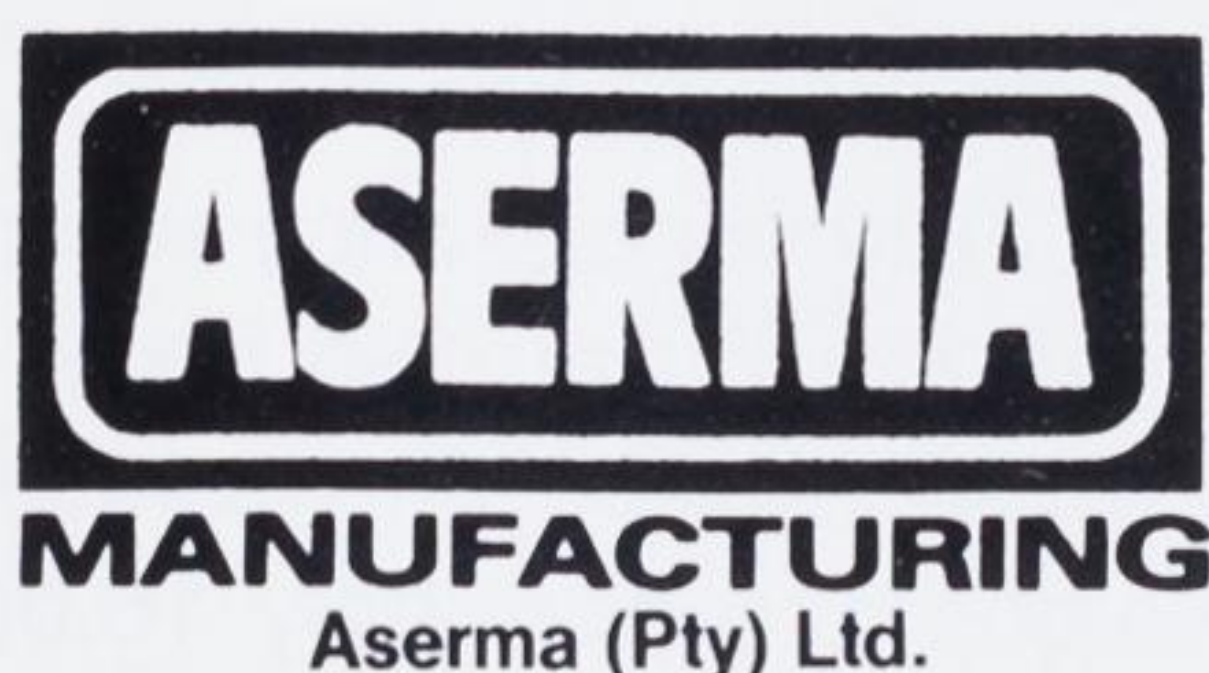
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 South Africa

ordnance was a 105mm low pressure gun, but in 1987, a new version of the vehicle was unveiled, armed with a Rheinmetall 105mm SLR gun which is chambered for the standard 105mm L7/M68 cartridge.

Two 105mm gun armoured cars are being produced, or being developed, in the United States:

The Cadillac Gage V-600 armoured car is a 6 x 6 vehicle, similar in layout to the Brazilian Sucuri. It was introduced in 1985. Combat weight is 18,200 kg, and it is powered by a 270 hp Cummings V-8 diesel engine, giving a power to weight ratio of 14.8 hp/ton. The power-pack sits at the front of the car, next to the driver. The three-man turret at the back carries a British Royal Ordnance Low Recoil Force 105mm gun. This gun is a development of the ubiquitous L7 gun, originally developed for the later marks of the Centurion tank. It can fire all types of ammunition suitable for its ancestors, including APFSDS, APDS, HEAT, HESH, etc. The car carries 34 rounds of 105mm ammunition.

The second American vehicle is still under development. It is the US Marine Corps' LAV 105 (Light Assault Vehicle). This is an "assault gun" development of the LAV family of vehicles and is the final result of the MPGS (Mobile Protected System) programme, a joint programme of the US Marine Corps and the US Army.

Prototypes of this vehicle were, in fact, armed with the ARES 75mm gun, an auto-loading, rapid fire piece with a cyclic rate of fire of 60 rounds per minute. Ballistics are classified, but are probably similar to that of the Rooikat's gun. The system is much more capable than that of the South African car, though, due to the high rate of fire and its ability to engage low-flying airborne targets, ie: helicopters. Despite the availability of this apparently outstanding gun, a 105mm gun was selected for the LAV.

The LAV is an 8 x 8 armoured car with its power-pack in front, next to the driver, and it has a two-man turret fitted with a Benet EX 35, lightweight 105mm gun which is served by an automatic loader. Ammunition for the loader is kept in the turret bustle. All standard types of 105mm ammunition, such as used in the 17/M68-type guns, can be fired. The notable fact here is the combat weight of the vehicle: 13,800 kg!

The Italian Iveco-Fiat Centauro B-1 tank destroyer is the most interesting of these armoured cars from our point of view, as it so closely corresponds to the Rooikat in most of its features. The Italian vehicle is

We submitted this article to Lyttleton Engineering Works (LEW) who are contracted by Armscor for the development and production of the Rooikat turret for comment, and they have replied as follows:

The technical analysis presented in the article to show that a 105mm gun can be fitted is correct. This was identified as a feasible option in the early design phase of Rooikat.

The decision to fit a 76mm gun was based on the requirements of the SADF. This decision must be seen from the point of view that the user specified a product with a configuration that was optimal for the type of threat, environmental conditions, adapted doctrines, etc., that prevailed during the border war. This particular configuration may not be optimal for the more conventional situation, where the 105mm gun is a more popular choice.

LEW is in the process of developing a Rooikat with a 105mm gun, to make the product more attractive to the international market.

A low recoil gun, based on the L7 ballistic concept, has been developed for this purpose. A very simple but most effective recoil system is utilised, which will improve the reliability and maintainability of the gun assembly. Other sub-systems are modified to accomodate the heavier gun, without degrading system performance.

Development tests for the turret are well advanced, and we plan to be ready for overseas demonstrations of the Rooikat 105 system early in 1993.

Another development of the Rooikat has been the lengthening of the body/chassis to accomodate the ZA-SPAD and SAHV-3 air defence systems.

specifically intended as a tank destroyer, but it can undoubtedly perform the reconnaissance role as well as any similar vehicle, including the Rooikat. A comparison of some of the essential specifications of the two vehicles is interesting:

Centauro	Rooikat
Layout:	
8 x 8 rear engined	8 x 8 front engined
Crew:	
4	4
Combat Weight:	

27,000 kg	24,000 kg
Hull Length:	
7 metres	7,4 metres
Hull Width:	
2,8 metres	3,05 metres
Height to top of Hull:	
2,5 metres	2,45 metres
Total Wheelbase:	
5,2 metres	4,5 metres
Track:	
2,5 metres	2,5 metres
Engine:	
V-10 diesel	V-6 diesel
560 hp	520 hp
Power to Weight ratio:	
20,7 hp/ton	21,7 hp/ton

Both are fitted with automatic gearboxes and independent suspension systems, coil springs in the Rooikat, and hydropneumatic in the Centauro. Top speed and cross-country performances are similar.

The Italian car has a very sophisticated fire control system, similar to that fitted to their new C1 Ariete main battle tank. It is a director-type system, with primary stabilisation of the gunner's sight, and the armament slaved to the sight. Although the main armament of the Rooikat is also stabilized in azimuth and elevation, exact details of the configuration of the system has not been published.

It should be noted that the layout of the Rooikat and the Centauro differ considerably. The Centauro has its power-pack in the front, next to the driver, with the fighting compartment at the rear. The Rooikat has a more traditional, tank-type layout, with the power-pack at the back of the vehicle, the fighting compartment in the centre and the driver in the front. Despite these differences, these are, all-in-all, two very similar

armoured cars; except for the main armament.

The Centauro is armed with an OTO Melara low recoil 105mm gun (the same gun fitted to the Brazilian Sucuri) which fires all types of standard 105mm ammunition. The Rooikat, as we know, carries the rather diminutive 76mm rifle. The ammunition capacity of the Centauro is 49 main gun rounds. That of the Rooikat, 48 rounds!

How does all of this add up? Why all these armoured cars with 105mm tank guns, while the Rooikat, larger and heavier than any of them, only carries a 76mm piece?

The problems of trying to fit a big gun into a little vehicle are obvious. The recoil force of the gun makes life for the crew very unpleasant, decreases equipment reliability and life-expectancy and may even threaten to upset the vehicle under certain circumstances. Other factors include the weight of the gun and ammunition, and the amount of ammunition which can be carried. Let us look at these factors in some detail.

Recoil:

The recoil impulse of a gun may be calculated from the following equation:

$I = (M_p V_o + M_c V_g)$ Equation (1)

Where: I= Recoil impulse, in Ns.

M_p = Mass of the projectile, in Kg

M_c = Mass of the propellant, in Kg

V_o = Muzzle velocity of the projectile, in m/s

V_g = Average velocity of the propellant gasses, m/s.

The average velocity of the gasses produced by the combustion of the propellant in the cartridge case varies from 1,200 m/s to 1,400 ms. According to the Rheinmetall *Handbook on Gunnery*, the velocity is approximately 3 times the muzzle velocity of the projectile at 400 m/s, 1.5 times at 800 m/s and equal to muzzle velocity at 1,400 m/s or more.

Using this equation to calculate the recoil impulse for the British 105mm L64 APFSDS round at a nominal 1,480 m/s, a projectile mass of 6.0 kg and a propellant mass of 5.6 kg, yields a result of approximately 17.1 kNs. In the case of the American M456 105mm HEAT round



A French Panhard FRG 90 F4. These vehicles were in service with the French Forces during the recent Gulf War.

in which the projectile has a mass of 10.3 kg and a velocity of 1,170 m/s, equation 1 gives a result of approximately 19.5 kNs. This is the most powerfully recoiling 105mm round used in L7/M68-type guns.

The trunnion pull, or average recoil force of a gun, that is the force the gun exerts on the vehicle, may be calculated as follows:

$$Fr = \frac{I^2}{2mRs}$$
Equation (2)

Where Fr = The average force on the gun mounting, N

I = Recoil impulse, calculated from equation (1), Ns

Mr = Mass of the recoiling parts of the gun, kg

s = Recoil distance, metres.

The L 105mm gun has a recoiling mass of approximately 1,350 kg and a maximum recoil distance of 280mm. For the L64 APFSDS round mentioned above, the trunnion pull, calculated according to equation (2), is 386 kN. For the M456 HEAT projectile, the trunnion pull is approximately 500 kN.

Let us apply the above equations to the 76mm gun of the Rooikat. Unfortunately, the actual weight of this gun projectile weights, charge weights, etc., have not been published, and the following figures are approximations. The recoiling mass is probably about 800 kg. Maximum recoil of the gun is stated to be 370mm, but the normal recoil distance is 340mm. The weight of the APFSDS projectile (penetrator + sabot) is approximately 2.4 kg. Propellant mass should be in the vicinity of 3.0 kg.

The muzzle velocity of this round is stated to be 1,600 m/s. Applying equation (1) to the above figures, we find that the recoil impulse of the gun is 8.6 kNs. Applying equation (2), we find that the trunnion pull of the 76mm gun when firing this round is 135 kN. This is approximately the figure (14 tons) quoted by Armscor for the recoil of the Rooikat's gun.

The HE round for the 76mm has a projectile weight of some 6.2 kg, and a propellant mass of about 2.0 kg. Muzzle velocity of this round is 920 m/s. The recoil impulse, according to equation (1), is approximately 8.0 kNs. The trunnion pull, according to equation (2), is approximately 120 kN.

There is an empirical rule which states that the ratio of the recoil impulse of an armoured vehicle's gun to vehicle mass should be no more than 900 Ns/ton.....Rule (3).

This means that a typical 105mm gun, with a maximum recoil impulse of approximately 1,950 Ns, should not be mounted in vehicles lighter than 22 tons. With the advent of the various low recoil versions of the L7/M68-type 105mm gun, the recoil impulse is spread over a longer time period and the trunnion pull (average recoil force) is thus reduced. This has made it possible to exceed rule (3) and in most of the vehicles mentioned above, the rate of recoil impulse to vehicle mass is more than 1,000 Ns/ton. This has brought about a new rule-of-thumb, which states that the average recoil force (trunnion pull) should not exceed:

10.0 kN/ton of vehicle mass..... Rule (4).

According to this rule, the standard L7/M68 type of 105mm gun requires a vehicle of 50 tons, while the Rooikat's 76mm gun can be mounted in vehicles as light as 14 tons - approximately half its actual weight!

Several references have been made to "low recoil guns". How does one decrease the recoil force of a gun? From equations one and two, it can be seen that four possibilities exist:

1. Decrease the power of the gun, that is, decrease the weight of the projectile and/or the muzzle velocity of same. This was done by the Israelis during the 'Sixties when they tried to fit the French 105mm tank gun into their modified Sherman tanks. The gun was found to be too powerful and it was then modified by shortening it and using a smaller cartridge case giving a lower muzzle velocity with the same projectiles as the original gun. The new gun was also fitted with a muzzle brake which further reduced the recoil forces, as will be discussed later.

2. Increase the mass of the gun. This is

not really a feasible proposition, especially where the gun is mounted in a vehicle which has to conform to certain mass/size specifications. For instance, the Cadillac Gage Commando Stingray Light Tank is armed with a Royal Ordnance 105mm low recoil gun, but the specifications laid down by the US Army for their AGS (Armoured Gun System) determined a maximum weight of 20,000 kg as it is to be carried in a Hercules C-130 aircraft. For the previously mentioned USMA LAV, the specifications required that the vehicle be air-transportable by a CH53E helicopter and, therefore, not to exceed 13,200 kg. Increasing the weight of the gun is totally unacceptable under these conditions.

3. Increase the recoil distance of the gun: This is the solution which has been adopted by all the manufacturers of low recoil 105mm guns. Rheinmetall of Germany introduced the concept of a low recoil 105mm gun in the early 'Eighties, and it currently produces a series of 105mm guns, all capable of firing all the ammunition available for the standard L7/M68 guns, but suitable for mounting in vehicles of different weight classes. The various models in the series are all based on the same gun but the different versions have different recoil

lengths:

Rh 105-60:	280mm
Rh 105-40:	400mm
Rh 105-30:	560mm

According to equation (1), the 105mm HEAT round (10.3 kg at 1,170 m/s) produces a recoil impulse of approximately 19.5 kNs. Calculating trunnion pulls according to equation (2) gives the following results:

Rh 105-60:	500 kN
Rh 105-40:	350 kN
Rh 105-3-:	260 kN

According to rule (4), this would allow these guns to be fitted into vehicles weighing 50 tons, 35 tons and 26 tons, respectively. There are no free rides, however, as the expression goes, and long recoil paths also have certain disadvantages. The recoil guards stretch deep into the turret and a lot of space is thus taken up. In the already cramped turret of a relatively small vehicle, this can become a significant ergonomic factor.

(To be continued in July 1992 issue).



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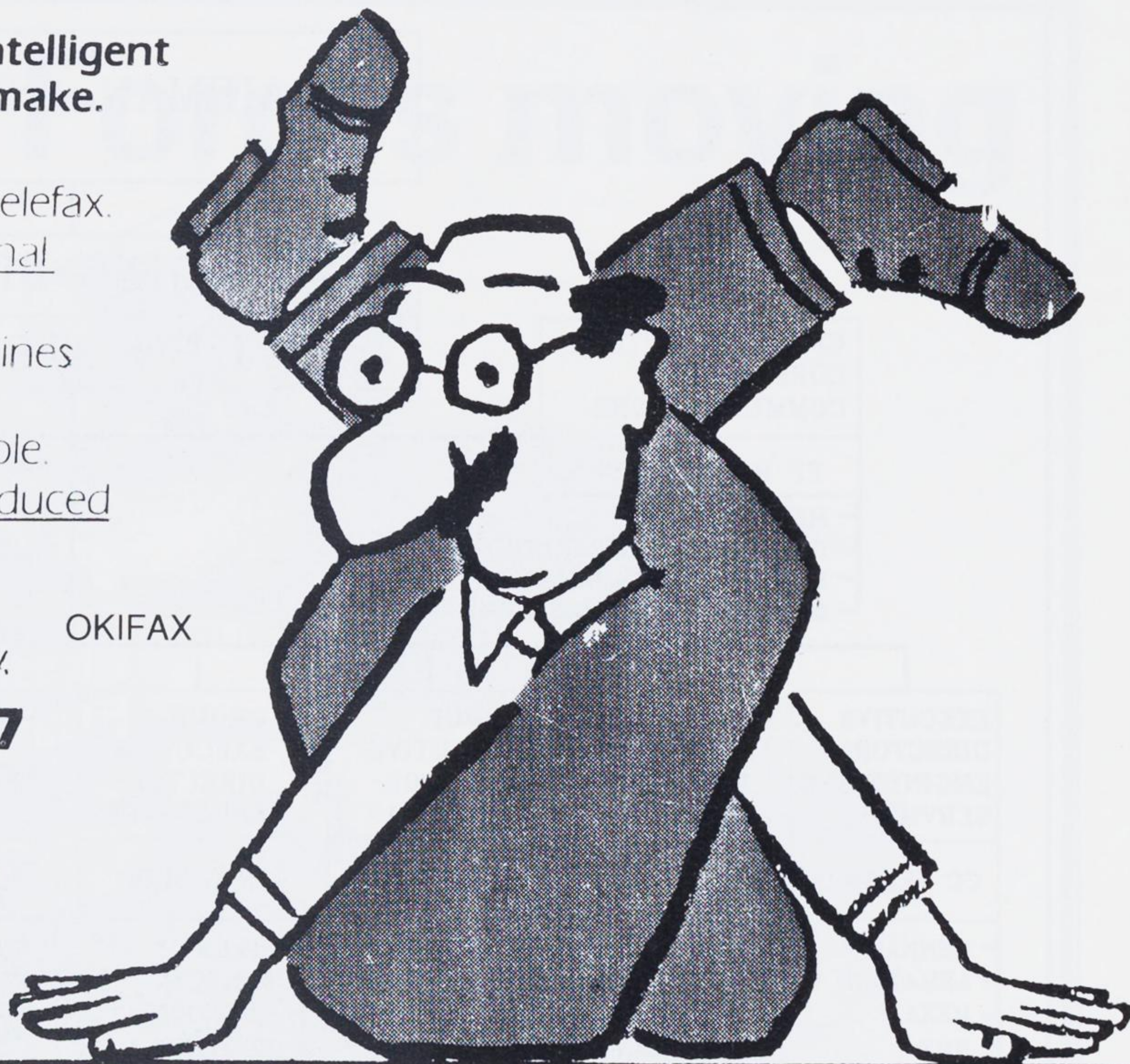
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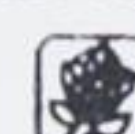
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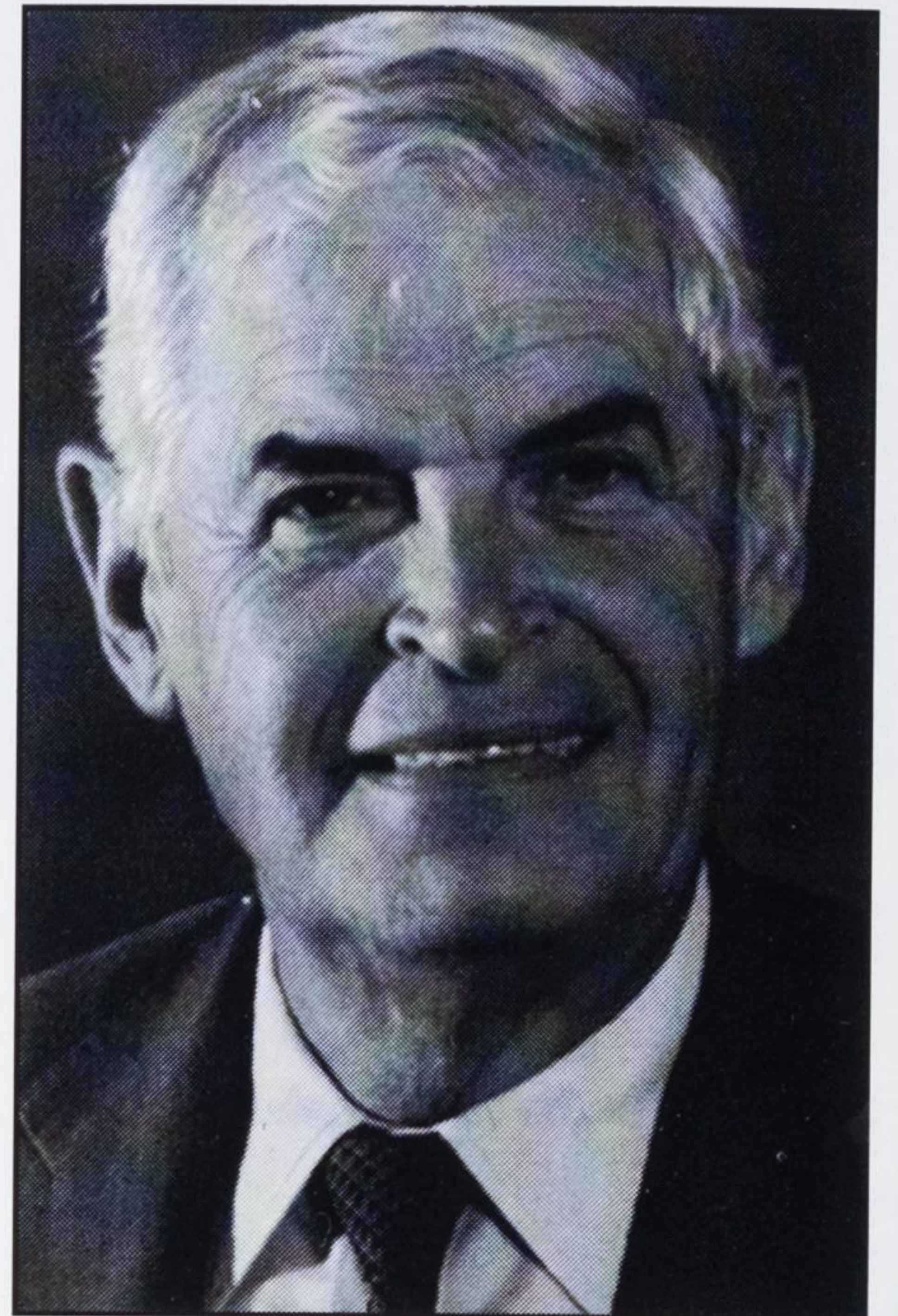
One of the major rationalisations to have taken place in the South African armaments industry has been the creation of Denel (Proprietary) Limited, a company that has absorbed most of the affiliates that were, in the past, in the Armscor stable. In future, Denel and its subsidiaries will function in the same manner as other public and private companies, and will be liable for normal taxation and required to operate within the Companies Act. The act of privatisation has removed it from future State support and placed it in the position of having to operate as a profit-making organisation, under the control of a Board of Directors.

In line with the rest of the international defence industries, Denel has to meet the growing competition in the defence markets and, like many other manufacturers, is planning to concentrate more and more on the commercial market. Within the next

five years, the company plans to have a production that will be 70% commercial and 30% military, compared with the present breakdown of some 65% of their current production being for its main customer, the South African Defence Force, and the remaining 35% being split between export and commercial products and work.

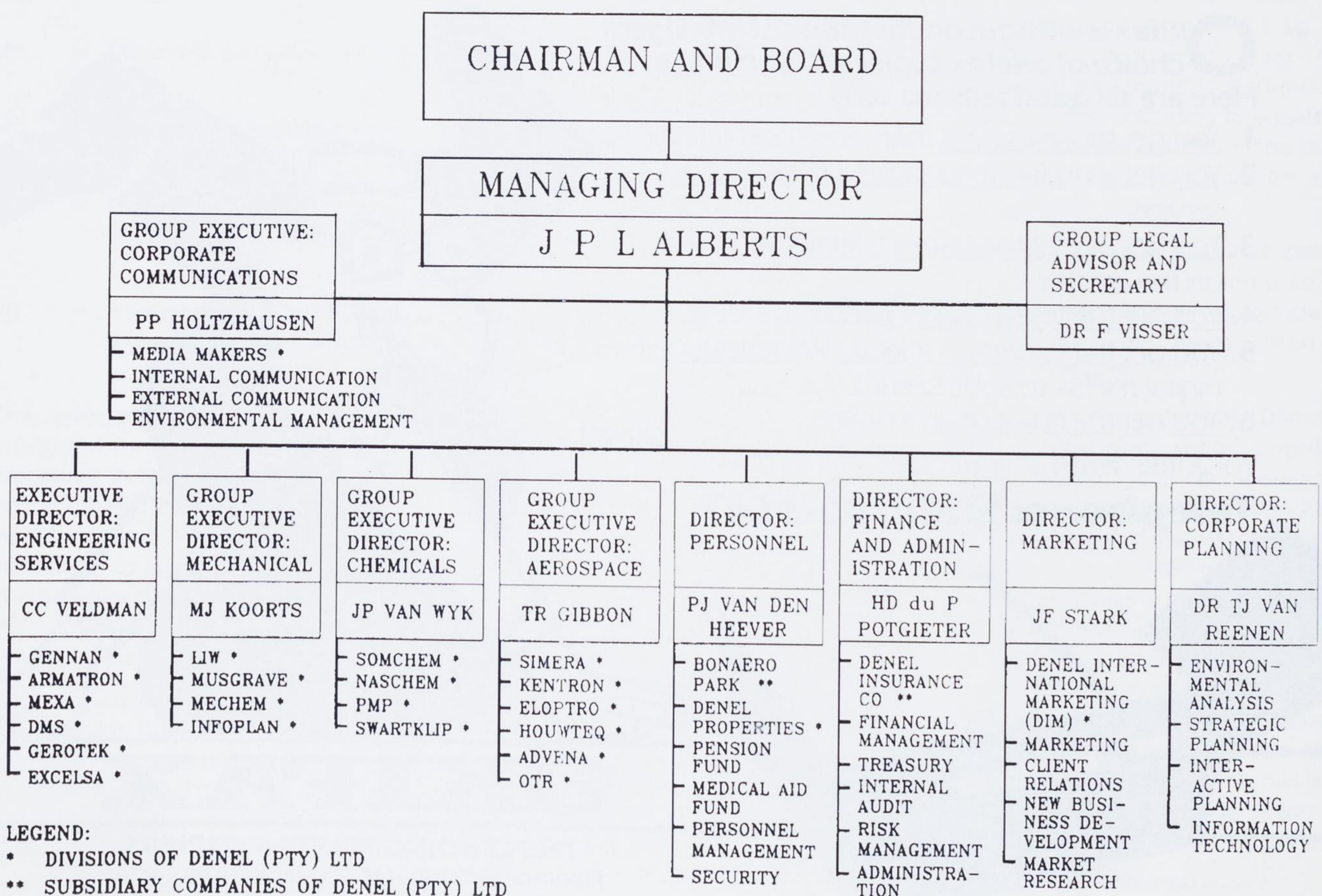
The 15,000 personnel employed by Denel and their subsidiaries supply the main thrust of the group which is exploiting the theme of "know-how", capability and people. For some time there has been a cloud of uncertainty hanging over Armscor, and the recent announcements clearly setting out the future aims and objectives of the new corporation appear to have both cleared the air and created an atmosphere of enthusiasm.

Figures released for the year 1992/93 show an estimated total income of R2,900-million, and a projected profit for



Dr John Maree, who is Chairman of the newly-established Denel (Pty) Limited.

DENEL (PROPRIETARY) LIMITED : ORGANISATIONAL STRUCTURE



the year of some R210 million. One of the most significant estimates that can be drawn from these projections, however, is that the figure for export earnings for the year will be 600-million Rands, and enquiries confirm that this is very much on the conservative side.

While there is reluctance on the part of Denel to supply specifics, there is little doubt that negotiations are underway with foreign companies concerning the establishment of alliances that could involve joint-development and production contracts. With current political developments, it is obvious that one of the future key marketing areas for the company will be Africa, and while at this stage it is unlikely to offer opportunities for the sale of complex and expensive systems, such as Kentrons' mobile air defence weaponry, there is a massive market in respect of repair, maintenance, upgrading and retro-fittings of existing equipment in many lands to the north of Denel. In the past, secrecy has been the much-used watchword of the South African Defence Industries and could be safely applied when there was a large, captive market with more than adequate funds. Now it will be necessary to adopt the policy followed by the rest of the world, of publicly



advising prospective purchasers just what will be available, and informing defence planners well in advance of what is available. Obviously, intended transactions and negotiations will still require to be kept under the cloak of secrecy, but there is no justification for withholding information about "models" that are in the pipeline.

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HIV and AIDS:

A Worldwide Epidemic

By SSgt W H McMichael

From this moment on, no one can get infected with the AIDS virus.

Wishful thinking. Even if it were true, AIDS-related diseases will still kill millions of people around the world between now and the turn of the century. They will die because they are already infected with HIV, the virus that causes AIDS. And more than 90 percent of those who are infected eventually die of the disease. In the United States, more than 100 people die from AIDS-related diseases every day — one every 15 minutes. It's increasingly likely that your life will in some way be touched.

And know this: no one is immune. There are still those who believe its only victims are homosexuals, junkies, helpless newborns or recipients of blood transfusions — "other people." They are wrong. The majority of the world's eight to 10 million victims have caught HIV by way of sex with the opposite sex. In the US alone, heterosexual contact is blamed for 100,000 HIV infections since 1985. It's not someone else's disease.

The implications for oft-deployed soldiers, sailors, airmen and Marines, especially those who are young and sexually active, are immense. Check the numbers: infection rates among prostitutes in Nairobi, Kenya, run as high as 90 percent. In northern Thailand, HIV has infected 15 percent of the population in less than five years. As many as 50 percent of Thailand's prostitutes are infected.

"Before 1995, more Americans will lose their lives to AIDS than gave their lives in all the wars that we've fought," said Dr (Lt-Col) Robert Redfield, the Army's point man for HIV research. "I mean, we're losing some 50,000 a year now. That's Vietnam, but in one year's time."

HIV, or human immunodeficiency virus, causes what's known as acquired immune deficiency syndrome. Actually, it's no longer a syndrome, since the disease and the virus that causes it were isolated and identified. Strictly speaking, victims die of an opportunistic infection that strikes during late-stage HIV disease. But the AIDS moniker stuck. And its victims still die. There is no cure.

It's also a terrible way to die. The many disorders common amongst late-stage AIDS patients produce symptoms as grim as seizures and

For a number of years, *Armed Forces Journal* has been publishing articles dealing with the Acquired Immune Deficiency Syndrome (AIDS) and its potential strategic and military implications. These two articles, reprinted from *Soldiers*, illustrate the open approach to the subject in the United States' Department of Defence, and present some research information obtained from the prestigious Walter Reed Military Hospital that is not generally known.

Since 1986, the US Department of Defence has tested over 2,400,000 active duty personnel for HIV, and .8 percent were found to be positive. The US Centres for Disease Control have estimated that, at present, one in every 500 college (university) student in the United States is HIV-infected.

Whilst there have been suggestions that tests have been undertaken on the personnel of some South African Defence Force formations, no factual information is available.

coma, chronic diarrhea, cancers of the rectum and tongue, blindness, and the loss of ability to think, speak or walk.

Limited progress is being made. Through the aggressive early diagnosis of HIV infection, many late-stage disorders can be anticipated and treated. And retroviral medicines, such as AZT are prolonging life of patients with late-stage HIV disease.

But the challenge facing civilian and military researchers is formidable. The disease takes slightly different forms in different parts of the world. An even more frightening prospect: what if the virus can change its outer appearance, as the flu virus does? "If that's true for the AIDS virus," said Redfield, "we're going to need a lot of vaccines."

The human body contains two primary types of blood cells: red and white. The reds primarily carry needed oxygen to the body and carbon dioxide, a waste product, back to the lungs. The whites make up the body's immune system, attacking invaders, fighting off infections and clotting blood at the scene of cuts.

The various white blood cells perform their function like an Army combined

arms team. One of these cells, the T-helper, plays the part of the cavalry scouts — it's the cell that actually recognizes certain invaders and calls for help. HIV tries to overwhelm these T-helpers, advancing rapidly and disrupting their communications. A hasty defense is mounted by immune system antibodies, which counterattack the invaders.

During these first days, HIV, or portions of it, merges with the body's T-helper cells, either killing them outright or camouflaging them so that the immune system itself kills them, friendly-fire style.

The immune system's initial antibody counterattack is successful. But HIV stays alive and slowly gains ground. Gradually, over what is usually an 8-to-10 year period, the body's T-helper cell count decreases.

Eventually, the body reaches a point where too many T-helpers have been picked off, and HIV swarms over the entire immune system. At this point, most patients die within two years, often of tuberculosis, pneumonia, or a wide variety of disorders.

Certain cancers and nervous disorders are also associated with AIDS. Researchers have not yet discovered their relation to HIV.

Nor have they determined why the disease takes so long to kill its victims. What has been determined is the pace of the disease. HIV destroys the immune system in a measured, deliberate manner that rarely varies from person to person.

To chart the course of the disease, Army physicians employ the Walter Reed Staging System. Developed in 1986 and in use through much of the world, the system gives physicians a common ground on which to identify the level of infection in patients. It's based on a combination of symptoms and the number of T-helper cells in the body.

At Stage One, a person has just been infected. His body has developed antibodies to HIV, and they've survived the initial attack. These antibodies, rather than the virus itself, are what show up on standard blood tests for HIV. If you've just been infected, it can take between six weeks and a year for you to test positive.

A patient enters Stage Two when his lymph nodes become swollen, sometime during the first five years. At

Stage Three, during the fourth or fifth year, the T-helper cell count has dropped to 400 per cubic millimeter of blood, half the amount of a normal person's.

A person moves into Stage Four about 18 months later, when he fails three of four skin tests for immune functioning. At Stage Five, he fails all four — or he develops thrush, a fungal disease of the mouth. Stage Six is AIDS — a complete breakdown of the immune system. At this point, death from an infection or one of the odd cancers described earlier, takes place within about two years.

Advances in treatment at Army medical centers, however, are encouraging. In 1986, Stage Five patients under the Army's care "usually died within two years," said Dr (Col.) Donald Burke, Director of the Division of Retrovirology at Walter Reed Army Institute of Research (WRAIR). "But now, in 1991, among persons who are at the same stage, less than one in six will die within two years. So we have distinctly improved survival in late-stage disease, Armywide."

WRAIR and dozens of other research groups the world over are searching for longer-term answers. The Army is one of the world's leaders in vaccine therapy research. But for the time being, prevention is the only cure. That's why medical professionals the world over place a premium on education, early detection, notification of sexual partners, and lifestyle modification.

Underline the word *education*. It's the only way that the fear and denial that surround HIV infection can be overcome. In turn, it's a key to understanding the degree of risk in your lifestyle.

For example, why did AIDS devastate homosexuals and intravenous drug users first in this country? "Because gays in the '70s and '80s were very promiscuous," said Dr (Col.) Charles Oster, chief of the Infectious Disease Service at Walter Reed Army Medical Center.

"Gay men could go into bathhouses in the major cities and have anonymous sex with anybody. During this period, they had high levels of *all* sexually-transmitted diseases. So they had high levels of HIV, along with high levels of genital herpes, syphilis and gonorrhea.

"Then it started showing up in blood recipients because the blood is an infectious vehicle. And it showed up in IV drug users for the same reason, and because they share needles. They also share sex. A lot of people support their drug habit with prostitution." Multiple partners, anal

sex and needle-sharing, all played a part in the initial epidemic.

Behavior modification is a tough choice for the young and restless. While the rate of HIV transmission between heterosexuals increased 40 percent last year, the number of AIDS cases reported among homosexuals has decreased eight percent over the past eight years. "Homosexuals changed their behavior in the mid-'80s," said Oster, "and their rates of *all* sexually-transmitted diseases went down.

"The message is that this is sexually transmitted," said Oster. "You protect yourself by not having sex, or by having sex with a stable partner."

Less dramatic steps can be taken, such as limiting partners, knowing who they are and using condoms. "Protected sex with a condom is probably safer than unprotected sex," Oster said, "but it's not a good strategy to promote because you're still taking a risk." Non-military agencies promote condom use, but as a way to *reduce* risk, not eliminate it.

Infected soldiers are counseled at the time of notification that they're responsible for telling all potential sex partners about their infection. They're also required, by regulation, to employ condoms during intercourse. A 24-year-old soldier received a 15-year prison term and a dishonorable discharge last summer for having unprotected sex with five women.

Following such orders is more than a legal responsibility. It's a moral choice, the consequences of which could be the death sentence for someone whose only mistake was misplaced trust.

"The message for young soldiers, sailors, airmen and Marines is simple," said Redfield. "The AIDS virus is no different than any other venereal disease. It you're at risk for venereal disease, you're at risk for the AIDS virus."

HIV: The Army's Counterattack

When the AIDS virus was isolated and identified by American and French researchers in 1984, the news wasn't greeted with universal joy. It was widely held, especially in the United States, that AIDS victims, most of them urban homosexuals and needle-sharing drug addicts, were getting what they deserved.

The atmosphere was so highly charged that when Dr (Lt-Col.) Robert Redfield of the Walter Reed Army Institute of Research went to the Centers for Disease Control in Atlanta with his findings that the virus that caused AIDS was transmissible from men to women, no one believed him.

In 1985, at the first international AIDS conference, WRAIR's suggestion that human immunodeficiency virus progressed to full-blown AIDS in more than half of those infected was seen as highly controversial.

A year later, when Army researchers asked the senior leadership to implement an HIV-testing program, the Department of Defense agreed it was a good idea. No one else did.

But now, six years later, testing and early diagnosis are gradually coming into vogue in the civilian community. Heterosexual transmission of HIV, says the World Health Organisation, accounts for 75 percent of infections worldwide. And the Army remains on the cutting edge of AIDS research with controversial vaccine tests that are yielding significant results.

No cure or preventive vaccine for AIDS yet exists. But if the second phase of the Army's gp 160 vaccine trial yields positive results, the tri-service military and civilian researchers at WRAIR will have come up with a vaccine that can halt the progress of HIV disease — which eventually leads to AIDS — in early-stage patients. The first conclusive results are expected around January 1993.

"What Bob Redfield is doing with immune therapy, the gp 160, is as good an approach, an avenue of research, as anything I know for restoring immune function today," said Dr Bob Gallo of the National Institutes of Health in Bethesda, Md. Gallo, chief of the Laboratory of Tumor Cell Biology at NIH's National Cancer Institute, is credited with being the co-discoverer of the AIDS virus.

Gallo sees Redfield, the award-winning senior researcher at WRAIR, and his team of Army, Navy, Air Force and Henry M Jackson Foundation physicians and technicians taking a revolutionary approach: using HIV itself to combat the problem. The Jackson Foundation, a medical research organization established by Congress in 1983, has a five-year grant to support the military's joint AIDS research effort.

"We proved what was considered by many to be unlikely," said Redfield. "By actually vaccinating HIV-infected patients with a piece of the AIDS virus, we totally changed the immunological response the host had against the virus."

The body's immune system does develop an initial defense against HIV infection and manages to control HIV for many years. Eventually, however, HIV wins out, destroying the T-helper cells which recognize the immune system's response.


Army researchers felt that vaccination

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with a protein from HIV might boost the immune system's long-term performance. The piece of the AIDS virus chosen by the Army team for this test is known as gp 160.

In the original 240-day test, 30 volunteers with early-stage infection were given periodic, scheduled injections of genetically engineered gp 160. The T-helper cell counts stopped falling in 19 of the 30. All received a minimum of six injections. The remaining 11 saw their T-helper cell counts continue to fall, though not as fast as in an historical reference group of infected patients. The group of 11 received less than six injections; some, only three.

The second test is providing more conclusive results. "Apparently, 27 out of the 27 patients who've received a minimum of six injections have been able to redirect their immune systems," said Redfield. "That's very exciting.

"Second, the safety continues to be documented. And third, we now have patients who are out over 900 days, and they aren't having any fall in their T-helper cell count." The counts of the natural history group have dropped 26 per cent since the beginning of phase one.

The concept of using live viruses to treat infections, as opposed to preventing them, dates back to Louis Pasteur's use of the rabies virus to treat rabies infections. But, due to widespread skepticism, the concept of vaccine therapy laid dormant for nearly a century.

"It's a matter of record that the majority of people felt that this was kind of a foolish, counter-intuitive, very unlikely-to-succeed kind of experiment," said Redfield. "But by vaccinating patients that were chronically infected with the AIDS virus, we totally changed and broadened their immune response against the AIDS virus."

"It's controversial, yes," said Gallo. "But there are at least three groups doing interesting things: Redfield, Jonas Salk's group, and Daniel Sagury at the University of Paris. And I think all three merit close follow-up."

Another gp 160 trial began in November 1990 involving 140 different patients. It's being conducted at Walter Reed Army Medical Center; the National Naval Medical Center in Bethesda; and the Air Force's Wilford Hall Medical Center in San Antonio, Texas.

The ongoing vaccine trials are just the latest in the US military's innovative approach to the HIV epidemic, which has claimed the lives of some 118,000 Americans. More than 300 of them had been in the military. About 10,000

HIV-infected people are being treated in Defense Department medical facilities, and 4,000 are classified as being in the late stages of HIV infection.

But why the military interest? Readiness, for one. That, and the military's concern for its widely deployed forces, convinced DOD that an aggressive AIDS policy was necessary. In nearly every war in history, disease has proved deadlier than the bullets.

Recognizing the explosive nature of HIV, Dr (Col.) Donald Burke, Director of the Division of Retrovirology at WRAIR, said "the military decided up front that we were going to apply classical approaches to epidemic control. We were going to diagnose individuals; we were going to do partner notifications; we were going to take people who were HIV-infected and get them into medical treatment as quickly as we could."

Ironically, he said, "when the civilian community was almost paralytically concerned with civil liberties, the military decided to balance what was necessary to preserve civil liberties with what was in the best interests of public health. We kept people who were healthy and functional on active duty, said the information that they're HIV-infected couldn't be used against them in any adverse action, and treated them in any adverse action, and treated this as if it were any other medical condition."

Early diagnosis is the key. Recruits are screened in their initial processing stations. Those on active duty are tested every two years. Two separate, stringent blood tests are required before a soldier is told he is HIV-infected. Only he, his doctor and his commander are informed.

"We're identifying people earlier because we're testing," said Dr (Col.) Charles Oster, chief of the Infectious Disease Service at WRAMC. "We're not waiting for them to get sick."

When those infected are identified early on, "they can take steps to avoid infecting others," said the Army's HIV staff officer, Major Pete Peterson. "Second, they can begin to monitor their own health and take care of themselves. Third, we can ensure that we don't assign individuals to places that might be unhealthy for them."

Soldiers who test positive are transferred to the US. They remain on active duty and continue doing their jobs, going to school, and getting promoted. They also undergo annual physicals. When they become medically unfit for duty, they are medically retired, remaining eligible for DOD medical care. Many of those

under such care volunteer to take part in WRAIR's HIV research.

"Research and care go hand-in-hand here at Walter Reed," said Oster. "We feel that we can only provide optimal care by also doing research."

How long will it take to find a cure? Redfield drew parallels to cures for polio, which took six years, and hepatitis, which took 16.

"The truth is, this is probably a lot more difficult than polio or hepatitis," said Redfield. "Right now, with AIDS, we're at eight years. If we do as well as we did with hepatitis, we'll solve this thing towards the end of the century."

Part of the immense puzzle could be solved in less than a year, when the first gp 160 trial is concluded. But, said Redfield, "I don't anticipate we'll find this therapy is a home run. Clearly, we are making advances. But AIDS is still going to kill millions of people around the world."



Water Systems Tested

Water purification equipment that was previously under development by the US army was tested under actual combat conditions during Operations Desert Shield and Desert Storm.

Three self-contained reverse osmosis water purification units (ROWPUs) were airlifted to Southwest Asia in October 1990. This equipment was intended to provide a 3,000-gallon-per-hour corps support capacity to fill the gap between the general support and division support capabilities.

With this unit, the water is first passed through a multi-media filter that removes most of the particles. Then it is forced through cartridge filters that remove the remaining particles. Finally, it goes through the reverse osmosis element, which rejects the ions and allows only pure water to pass.

Whether the water begins as brackish well water or salt water, the ROWPU removes all impurities and contaminants, including chemical and biological agents. The end product is much cleaner than the tap water in most households.

The collected data was forwarded to the project manager to complement the test data already collected - *Ex Infantry*.

A Military Code of Conduct

Is There Such a Code?

What about the "Fog of War"

Could it be Applied?

Would a revision of the Military Disciplinary Code, coupled to a strict and realistic application meet all requirements.

In recent months there has been political and media pressure on the South African Defence Force to publish a Code of Conduct and while it is understood that this is being considered by the SADF, as yet nothing has been published. Whether such a set of regulations are advisable or necessary is a moot point. All defence forces operate under firmly laid-down legal codes, in the case of the SA Defence Force it is the Military Disciplinary Code (MDC) and in the United States it is the Uniform Code of Military Justice (UCMJ), while the British have the Queen's Regulations (QRs). In addition there are recognised principles firmly rooted in International Law by long accepted customs and the various Geneva Conventions of 1949 and before. In the past crimes committed during military operations or occupations have been tried by War Crimes tribunals such as the Nuremberg trials after WWII or more recently by an open court in the United States that dealt with the My Lai Massacre.

The "Fog of War" is a very real component

It is all very well for political pressure groups to try to advance their ideas through the drafting and application of codes, but are they necessary if the existing laws are applied and understood, and have they been proposed by individuals with an understanding of the confusion and turmoil that does exist on the battlefield.

In the heat of battle or even in any operational military situation it is not easy to apportion legal/criminal responsibility for an action which under any normal criminal code and circumstances could result in dire penalties. A case in point is the legal proceeding (inquests) now underway in a British Court concerning soldiers killed in action during the Gulf War by friendly fire. If own forces members can be killed, the chances that civilians both friendly and unfriendly are at an even greater risk. A few years back a very well known and respected South African general related how when as a young tank troop commander in Italy

proceeding up a country road he saw movement behind a haystack and gave the order to his troop to fire only to find that he had targeted a group of refugees who were hiding behind the haystack.

It would appear that most defence forces have shied away from laying down any additional Code of Conduct that is outside of their normal military law structure and Disciplinary Code, rather they appear to follow the system of having own highly qualified lawyers as Judge Advocates. In the case of the British Army/Air Force the Office of the Judge Advocate General of the Forces, a QC, falls under the establishment of the Lord Chancellor while in the United States the Judge Advocate General is a uniformed member of the staff of the Secretary of Defence. The current policy appears to be, rather than produce additional codes of doubtful legal status to amend and add to the existing Military Codes if and when necessary, and to ensure that there is a clear and general understanding at all times of both responsibility and liability of

all of those who are serving under the jurisdiction of the military legal codes.

Any transgressions can in many instances be traced back to a lack of discipline or poor training, an exception being the murderous thugs who exercised control of units of the WWII Germany Army. Too often Special Forces formations are thought to liable to be "too quick on the draw" an opinion that could be related to their special training. However many of these units take great pains during and after training to instil in their members respect for an individual unit code of conduct.

Possibly one of the best fighting forces ever raised was the Comandos of the Portuguese Army with training and operational tasking being exceptionally hard. Their Code of Conduct is published here. Unfortunately it has lost some of the verve of the original in the translation.



The Code of the Comandos

The Comando loves his motherland and is always ready to sacrifice himself for her. He is a constant example of energy, of willingness, of dedication and of loyalty to his superiors. He does not question orders that he may receive and is an example in executing these orders. He removes all difficulties that he may find in his path, without having to seek assistance in doing his duty.

The Comando practises comradeship and tries to encourage moral stability amongst his brothers-at-arms, but he does not accept any indignity, neither disobedience nor disrespect for the rules of discipline and honour. Always ready to help those in need of his moral or material support, be it in peace or in war or in the face of the enemy, constantly maintaining himself as a person of character.

The Comando always accepts responsibility, is always ready to command and willing to obey. Will not accept that his superiors would treat him unfairly or in any way belittle him. As it is his constant desire

to act as a true Comando, he always has complete trust and faith in his superiors and commanders.

The Comando is generous in victory and patient in adversity; the true Comando is kind and treats everybody with respect and offers encouragement to those who fight to overcome adversity. He does not lie nor embellish his own doings. A Comando is prepared to serve with stoicism and without thought of personal satisfaction or reward.

The Comando's character is one of loyalty, faithfulness, obedience and determination. The Comando who does not have, and does not persist with these virtues, must be peremptorily deprived of the title of Comando. A Comando does not retreat in the face of danger, and he does not avoid situations that can bring hardship and inconvenience. When charged with a mission, he puts all his efforts into its successful execution, be it physical, moral or intellectual.

The SA Defence Force

Force Structures for the Future

By Major Helmoed-Romer Heitman (CF)

My previous article set out the basic mission sets for which the armed forces will have primary responsibility. This article and the next will discuss a possible medium-term force structure for South Africa's armed forces, looking first at the Army, and then at the Air Force and Navy. These two articles will only consider supporting elements, which will be developed to meet the needs of the operational elements. The SA Medical Services is also not discussed here: it will design its very specialised structure to support other services.

Future articles will discuss the matter of manning and equipping the Armed Forces.

The uncertain strategic period that the world is entering today, and the strong likelihood of conflict in Africa during the next decade or two, may make some very unexpected and sudden demands on the armed forces. This will require South Africa as a major regional power to maintain strong contingency forces that can be deployed at short notice to defend her own interests and those of friends and neighbours. The Air Force and Navy are manned mainly by fulltime personnel; in effect making them contingency forces as they stand. The Army, however, will have to expand its standing element if it is to field adequate contingency forces.

THE ARMY

The Army will have to maintain three distinct, but not mutually exclusive, forces:

- * **A contingency force;**
- * **The main conventional force;**
- * **The territorial force.**

Of these, only the formations and units of the contingency force will need to be standing elements, manned by fulltime personnel. This force can, however, also include Citizen Force units. These will give the contingency force a valuable back-up element, and will also ensure a sustained deployment capability when needed. The main conventional force can be a Citizen Force organisation, with small numbers of fulltime personnel in some key command, specialist and administrative posts. The territorial force would have responsibility for internal

counter-insurgency and border security operations, and for internal security tasks beyond the capability of the Police. It will, therefore, need some standing elements, backed up by Citizen Force units to ensure a sustained operational capability.

The following paragraphs set out in broad outline an Army force structure on this three-element concept.

THE CONTINGENCY FORCE

The Army contingency force must be able to respond rapidly to an unexpected threat to South Africa itself, and must also be able to rapidly deploy forces to support a friend in need. These are quite distinct missions with different doctrinal, organisational and equipment needs. The rapid deployment mission will also have a major political element, requiring a different control system.

These two missions would, therefore, best be addressed by having two separate forces with distinct planning, command and control and logistic support systems, to cater to their very disparate responsibilities.

The Army contingency force would also include the Reconnaissance Regiments.

Rapid Response Force

The Rapid Response Force (RRF) would have the primary mission of reacting to any incursion across South Africa's borders by armed forces. In the event of an extended cross-border insurgency or terrorism situation, it would function as the reaction force for the elements deployed for pre-emptive cross-border operations, and for major follow-up operations. Elements of the Rapid Deployment Force would be made available for such operations as needed.

In the event of a major conventional attack on South Africa, the primary task of the RRF would be that of conducting covering and screening operations while the main force mobilises and deploys. The RRF would then be withdrawn to regroup, whereafter, it would be available as a reserve or pursuit force.

The RRF would fall directly under Defence Headquarters in time of peace. That will facilitate the conduct of joint forces rapid response operations. In

wartime, the RRF would fall under Army Headquarters as individual brigades for employment as needed.

The Rapid Response Force might be composed of:

- * One combat helicopter brigade, as a quick strike or covering force;
- * One mechanised brigade, as a striking or covering force;
- * One motorised brigade, for infantry operations.

These brigades would be manned by professional and short-service personnel to ensure their ability to respond both swiftly *and* effectively. This force would be quite adequate to deal with any sudden threat. In times of peace, these brigades would find useful employment as training formations, supporting and monitoring the training and preparedness of Citizen Force formations and units.

Combat Helicopter Brigade

This would be a new formation. It might consist of three combat helicopter battalions with *Rooivalk*, two transport helicopter battalions with *Oryx*, and the necessary ground support elements to operate the main base and three major HAAs.

Each combat helicopter battalion might consist of three *Rooivalk* flights and an *Oryx* flight. The latter would allow the battalion to deploy independently with its essential ground equipment and personnel. This flight would also enable it to deliver munitions and fuel forward to the *Rooivalk* flights in combat. The ground support flight would operate the forward re-arming and refueling point. The strength and composition of the flights would have to be derived from a detailed tactical study or the likely missions against the likely terrain.

The transport helicopter battalions would be equipped with *Oryx*, or *Pumas*. They would handle tactical trooping, emergency supply and casevac work, in co-operation with the combat battalions and any ground forces involved in the same action. They would also insert and extract deep reconnaissance and raiding teams.

This brigade could react to minor

incursions and carry out minor pre-emptive raids independently, and could support border forces in follow-up operations. Operating against a large incursion, or conducting a major pre-emptive or follow-up operation, it would work together with the other RRF brigades, or with RDF elements, such as the Parachute Brigade or the Light Infantry Brigade.

In the event of a major conflict, this brigade would operate as part of the initial covering force. Thereafter, it might operate independently in raiding and covering force roles, together with the Mechanised Brigade and these roles, or in support of the main conventional force. Operating together with elements of the main force, it could cover their flanks, destroy or fix enemy forces that have bypassed or broken through friendly forces, harass the enemy's flanks and rear areas, and form an integral element in a pursuit.

Mechanised Brigade

This brigade could be based on the present 60 Brigade, although it would only make minimum use of National Service personnel. It should be a powerful formation, able to operate independently. It might consist of:

- * Three armoured car regiments (*Rooikat*);
- * Two mechanised infantry battalions (*Ratal - IVC-2000*);
- * One artillery regiment (G-6 and *Bateleur MRL*);
- * One anti-aircraft regiment (SP 35mm and SP SAM);
- * One engineer regiment.

This brigade would be the main striking force against incursions by conventional or semi-conventional forces, and would carry out pre-emptive or major follow-up operations. It would be supported by other RRF and RDF elements, as necessary.

In the event of any major conflict, this brigade would initially operate as part of the covering force. Thereafter, it could be employed for independent operations by itself, or with the Combat Helicopter Brigade, could be held as a reserve force, or could be placed under the command of one of the main force divisions, to reinforce it for the initial manoeuvre battle, or for the pursuit.

Motorised Brigade

This brigade could be formed using some of the existing standing infantry battalions and personnel from one of the former

brigade headquarters and brigade support units that were disestablished with the formation of the new small divisions. It might consist of:

- * One armoured car regiment (*Eland 90 - Rooikat*);
- * One mechanised infantry battalion (*Ratel - ICV-2000*);
- * Three motorised infantry battalions (*Casspir - APC-2000*);
- * One artillery regiment (G-5 and *Bateleur MRL*);
- * One anti-aircraft regiment (towed 35mm and SAM);
- * One engineer regiment.

This brigade would be the primary reinforcement for elements of the Territorial Force deployed against large-scale cross-border incursions. Its armoured car and mechanised infantry units would give a useful mobile operations and striking capability. The motorised infantry battalions would reinforce the infantry units along the most threatened portion of the border.

In the event of any major conflict, this brigade would initially operate as part of the covering force, being deployed in terrain suited to its capabilities. Thereafter, it would be available to assist with the protection of critical rear-areas threatened by possible airborne operations, and to support mechanised forces in urban, wooded or rough terrain.

RAPID DEPLOYMENT FORCE

The Rapid Deployment Force (RDF) would have dual responsibility:

- * Its primary responsibility would be the conduct of operations in support of friendly countries.
- * Its secondary responsibility would be that of operations with the RRF.

In the event of a major conflict, it would form a high-mobility reserve under the control of Defence Headquarters.

The Rapid Deployment Force might be composed of:

- * 44 Parachute Brigade
- * One airborne brigade
- * One light mechanised brigade
- * One SAN marine battalion group.

These formations will all need to have a strong standing element but can rely on short-notice Citizen Force units for the rest of their strength. Ideally, the ratio might be 60:40, although even a ratio of 40:60 should be adequate. This assessment is based on the fact that we would be able to deploy more than one or at the most, two battalion

groups in less time than it would take to mobilise at least a substantial portion of the remainder.

Parachute Brigade

This brigade already exists as 44 Parachute Brigade. Given its primary RDF role and secondary RRF role, it will, however, have to be converted to a mainly standing force. It will also have to receive some airborne mechanised element. It might consist of:

- * Four parachute battalions;
- * One airborne armoured car regiment;
- * One airborne artillery regiment (120mm mortar);
- * One airborne anti-aircraft regiment (20mm and MANPADS);
- * One airborne engineer regiment.

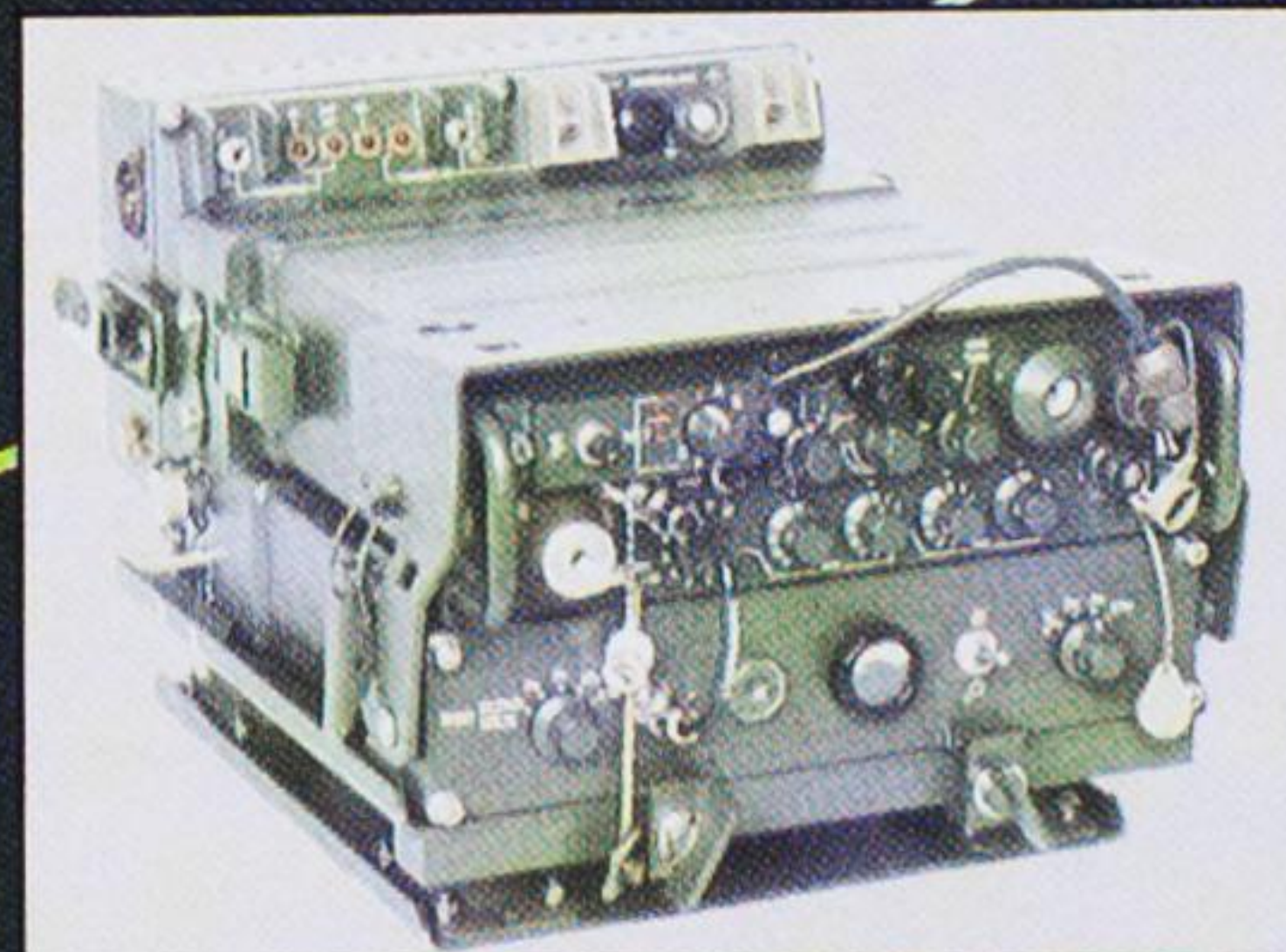
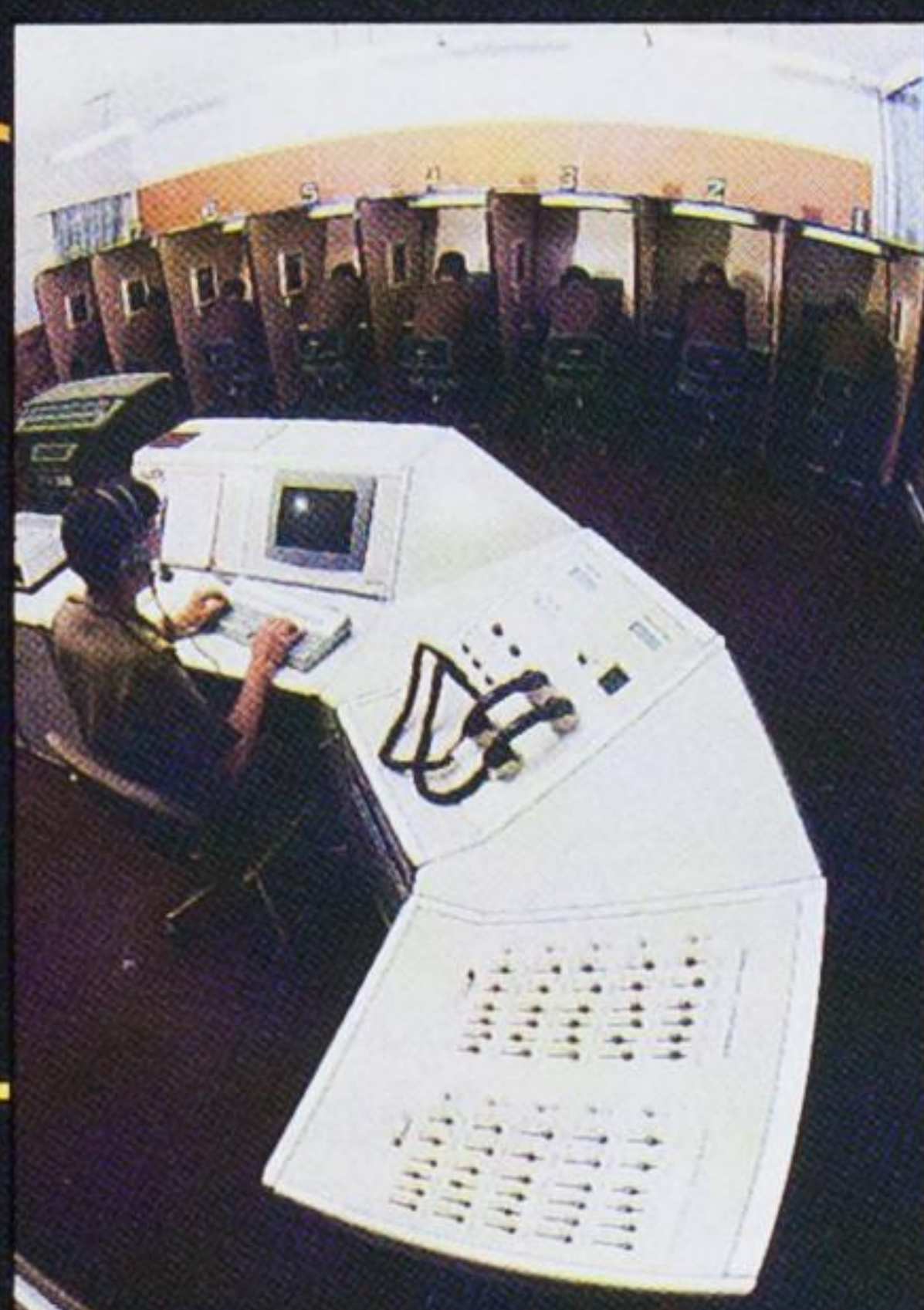
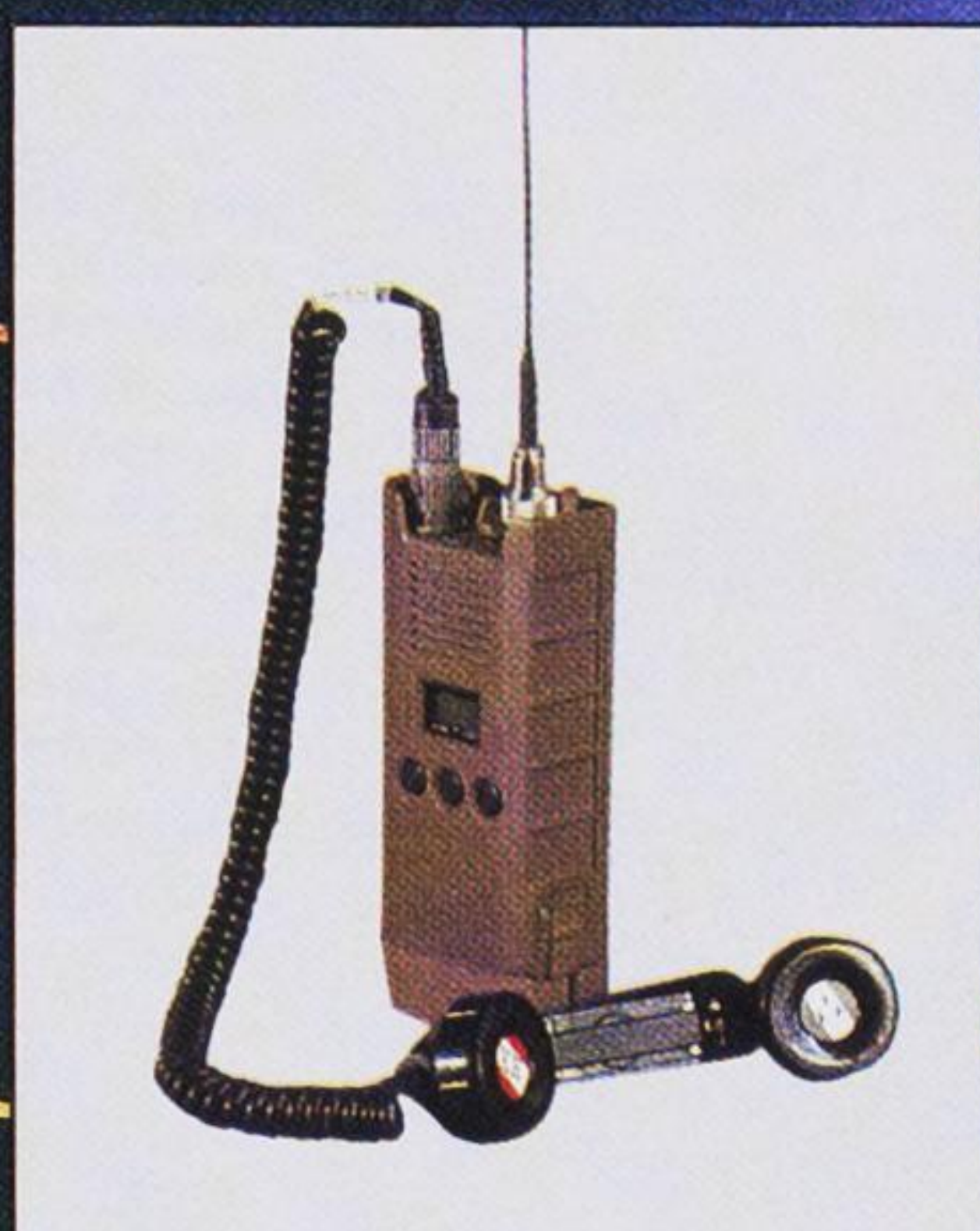
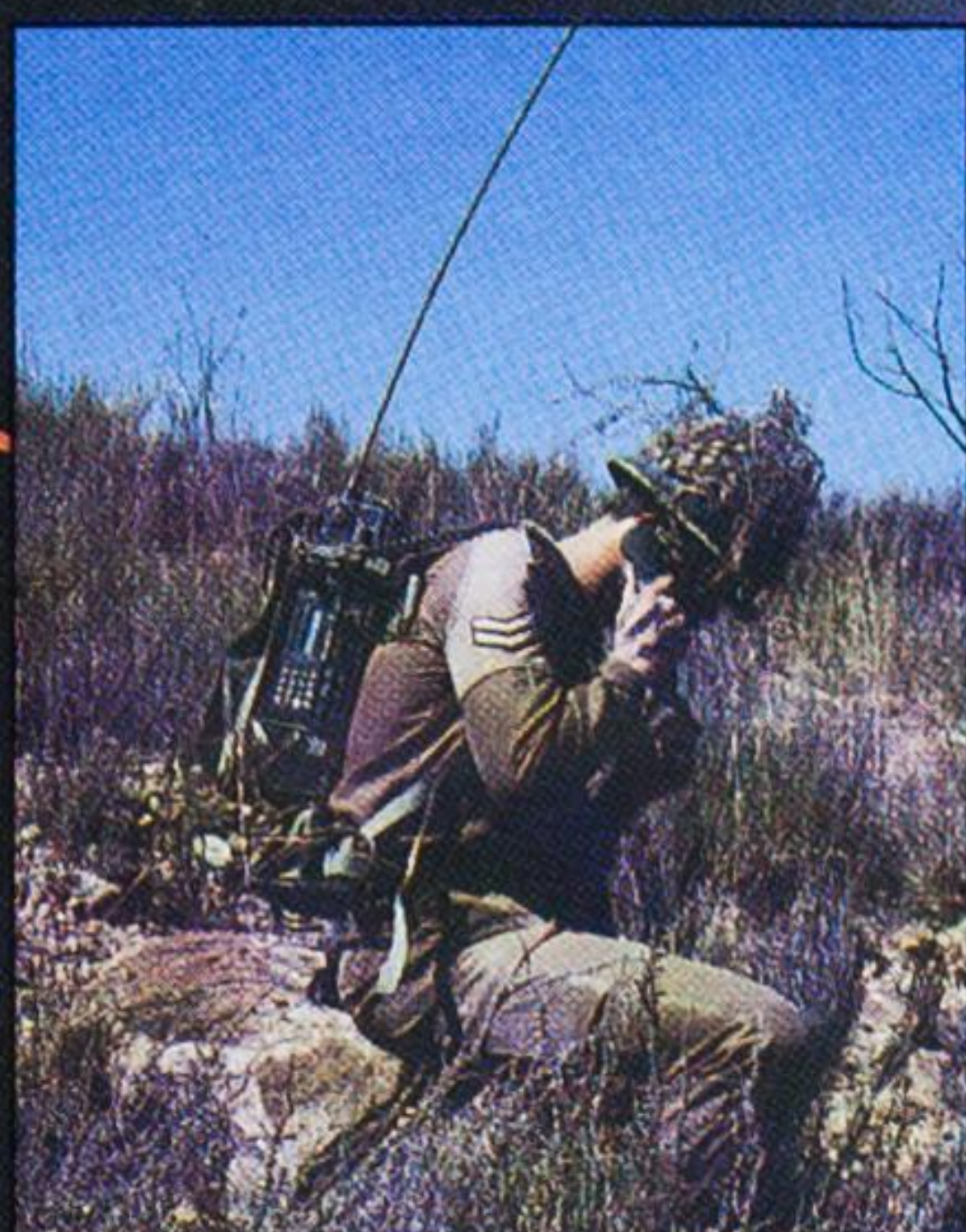
Its standing strength should be at least sufficient to allow the immediate deployment of two, preferably three, battalion groups. The other elements could be manned by the Citizen Force.

This brigade would give the ability to deploy a potent force by air - not necessarily by parachute - to anywhere in the region at very short notice. This very quick response might by itself be sufficient to settle the problem that led to the request for military assistance. If not, this brigade should be able to deal with most problems or at least to "keep the lid on" for long enough to allow the deployment of other elements of the RDF.

In its secondary role as a part of the RRF, this brigade offers the capability to swiftly and unexpectedly insert light forces by parachute. This capability could be used internally against insurgents who have penetrated the border zone and, externally as an element of pre-emptive or follow-up operations. The major advantage of parachute insertion in this case lies in the range over which, and the speed with which, it can be carried out. The deployment of a similar force over a similar range by helicopter would take more time and would be difficult to achieve without a loss of surprise, as the helicopters would be noticeable to people on the ground and would probably need an en route HAA.

In the event of a major conflict, this brigade would concentrate on raiding operations against the enemy's lines of communication and far rear areas. These operations would generally be carried out by reinforced platoons or by company groups, supplied by air or by helicopter, destroying their vehicles in the latter case. In some situations it may be possible to establish an airhead to facilitate operations

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TRUCKMAKERS is the manufacturer of military vehicles for the SADF. Most of our vehicles are straight forward support vehicles which are used by all arms of the SADF. However, certain products have been developed for specialist roles.



The MFEZI (above) is the latest generation of mine protected ambulance, which has been developed by Truckmakers for Armscor, and the South African Medical Services. Future developments will include a troop carrier and Command post variants, which will be suitable for use by other arms of the SADF.

The WITHINGS recovery vehicle (left) was developed by Truckmakers for Armscor and the SADF, and has been the backbone of recovery operations during the past few years.

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by one or more company groups or even by a battalion-group. Such a situation might arise during the pursuit of a defeated force.

Airborne Brigade

This brigade could be formed on the basis of existing fulltime infantry battalions. Its headquarters and support elements could be manned in part by personnel drawn from the brigades that were recently disestablished with the formation of the new divisions. It might also have one or two Citizen Force units, which would give it a valuable relief capability for extended operations.

While specifically a light force designed for air and heli-borne operations, this brigade will still have a need for light armour and artillery elements. It might, therefore, comprise:

- * Four light infantry battalions;
- * One light armoured car regiment (*Eland-90*);
- * One light artillery regiment (120mm mortar);
- * One light anti-aircraft regiment (20mm and MANPADS);
- * One light engineer regiment.

All of the combat vehicles and equipment of these units would be heli- and air-portable.

The primary role of this brigade would be to support or relieve 44 Parachute Brigade. Its light equipment will enable it to be deployed by air to support the paratroops as soon as they have control of an airfield or, over short distances, an adequate helicopter landing zone. In other cases, the brigade would take over from the deployed elements of the Parachute Brigade, which will allow this highly specialised force to be withdrawn early, to again be available to react to any new crisis.

This brigade would also have lower political profile than the Parachute Brigade, which might be a major consideration in some deployments in support of a neighbour or friend.

As a heliborne infantry force, this brigade will be immensely valuable back-up for the Rapid Response Force, and might in some cases take on certain tasks in that respect. As light infantry, it will also have exceptional ability to operate in terrain that would be very difficult for other troops. Finally, the elements of this brigade would also be very well-suited to supporting the Police in operations against narcotics or other smuggling.

In the event of a major conflict, this

brigade would be employed as a light infantry force, able to dominate rough terrain and to deploy rapidly by helicopter to carry out short-duration raids.

Light Mechanised Brigade

This brigade would be organised as a standard mechanised brigade - with the exception that all of its equipment would be selected to allow rapid transport by sea, rail and, to an extent, by air. Like the Parachute and Light Infantry Brigades, this would be a standing force, although it could to advantage have some Citizen Force elements.

The primary mission of this brigade would be to deploy through a friendly port in support of a friendly country faced by a semi-conventional or minor conventional threat. Its secondary mission would be to support or replace the Parachute or Light Infantry Brigades should they find themselves in a situation where a more powerful force with a greater sustained deployment capability is needed.

In a situation where a larger power, such as the United States, supports the same country and is prepared to provide the heavy airlift, elements of this brigade could be deployed by air. Very small elements could also be deployed by the SAAF to support the Parachute or Light Brigades in independent operations.

Marine Battalion Group

This could be a mixed unit of Army and Navy personnel. It would have the mission of securing and operating a friendly port to facilitate the debarkation and logistic support of the Light Mechanised Brigade or other elements. It would consist of:

- * An infantry battalion group (Army);
- * A beach-landing company (Army);
- * An amphibious landing squadron (Navy);
- * A port operating squadron (Navy).

In the ideal case, it would only be necessary to deploy the port operating squadron and some elements of the battalion group for local security. It is, however, quite possible that the country whose port is being used - probably the country that requested assistance in the first place - might not have full control of the port. In that case, the full battalion group might be needed to ensure the security of the port. In a worst case situation, it may be necessary to first gain control of the port. In that event, the amphibious landing squadron and the beach-landing company would have the task of gaining a foothold in the port, by means of an "over the beach" operation if necessary.

THE MAIN CONVENTIONAL FORCE

The primary role of the main conventional force will be to deter any conventional land attack on South Africa. Its secondary role will be to fight off an attack that could not be deterred. This force will also have a tertiary role of deploying in support of a neighbour facing conventional attack.

This primary role will require a conventional force sufficiently large, well-equipped, and well-trained to deter any of the major powers that might contemplate a military adventure against South Africa or in the region. This does not mean a force so powerful that it could utterly defeat the armed forces of a major power. It means a force that is sufficiently powerful to render a quick victory unlikely by a force of realistically supportable size. A potential attacker is then faced with a choice among deploying a massively large force, which would bring logistic, economic and diplomatic problems; taking a chance with a smaller force at the risk of defeat; or giving up the idea altogether.

A conventional force capable of exerting this required deterrent effect, will be capable of defeating any conventional adventure by a smaller power.

This force will have to take cognizance of the very low force to space ratio that will affect any conventional operations. Taken together with the very considerable distances in the region, and the need to obtain a quick and decisive outcome, this suggests a strong emphasis on mechanised forces, with strong helicopter and air support.

The current small mechanised divisions can form the core of this force, although a four-division force would make more sense once a fourth division can be fully equipped. These divisions should be complemented by a number of independent brigades, which would be attached to whichever of the divisions needs that particular capability. The main conventional force might thus comprise:

- * Four mechanised divisions;
- * An armoured brigade;
- * A motorised infantry brigade.

It would also have the brigades of the RRF and RDF operating in support.

A conventional force strong enough to deter any major power with an interest in military adventure in the region, will be far too large to maintain as a standing force. The main conventional force will, therefore, remain an essentially Citizen Force organisation.

Mechanised Division

The mechanised divisions would form the primary combat force of the Army. Their

primary task would be to stop and to destroy any enemy conventional force, and then to pursue surviving elements to ensure their destruction. These divisions would be mobilised only in the event of a threat situation arising that is beyond the capabilities of the RRF and RDF.

The basic organisation of the divisions could be similar to that of the current small mechanised division (see *Armed Forces/91*). Ideally, however, the two tank regiments which that organisation includes, would be replaced by *Rooikat* regiments. The division would then have only wheeled vehicles, which would enhance its operational mobility very considerably. The loss in combat power would not be critical: two regiments of tanks are in any event too small a force to be relevant in the major conflict or which these divisions would be mobilised. This scattering of tanks in small numbers over three divisions serves only to dilute what is already a very small tank force. One might also consider adding a third mechanised infantry battalion, and upgrading the heavy anti-armour capability from one squadron of ZT-3s to a regiment.

This division would then comprise:

- * One mechanised reconnaissance regiment (scout cars);
- * Three armoured car regiments (*Rooikat*);
- * Three mechanised infantry battalions (*Ratel - ICV-2000*);
- * Two motorised infantry battalions (*Casspir - APC-2000*);
- * One anti-armour regiment (ZT-3);
- * Three artillery regiments (2 x G-6, 1 x *Bateleur* MRL);
- * Two air defence regiments (SP 35mm, SP SAM);
- * One engineer regiment.

Armoured Brigade

The Armoured Brigade would be an independent "heavy" brigade. It would concentrate the Army's tank force under one command, to be placed under the command of whichever Mechanised Division needs heavy armour to conduct its mission. As soon as that mission has been carried out, this brigade would revert to Army HQ control. It would also be able to conduct certain missions independently.

This brigade might consist of:

- * One armoured car regiment (*Rooikat*);
- * Three tank regiments (*Olifant Ib - MBT-2000*);

- * Two mechanised infantry battalions (*Ratel - ICV-Heavy*);
- * One artillery regiment (G-6);
- * One anti-aircraft regiment (SP 35mm and SP SAM);
- * One Engineer regiment.

Motorised Brigade

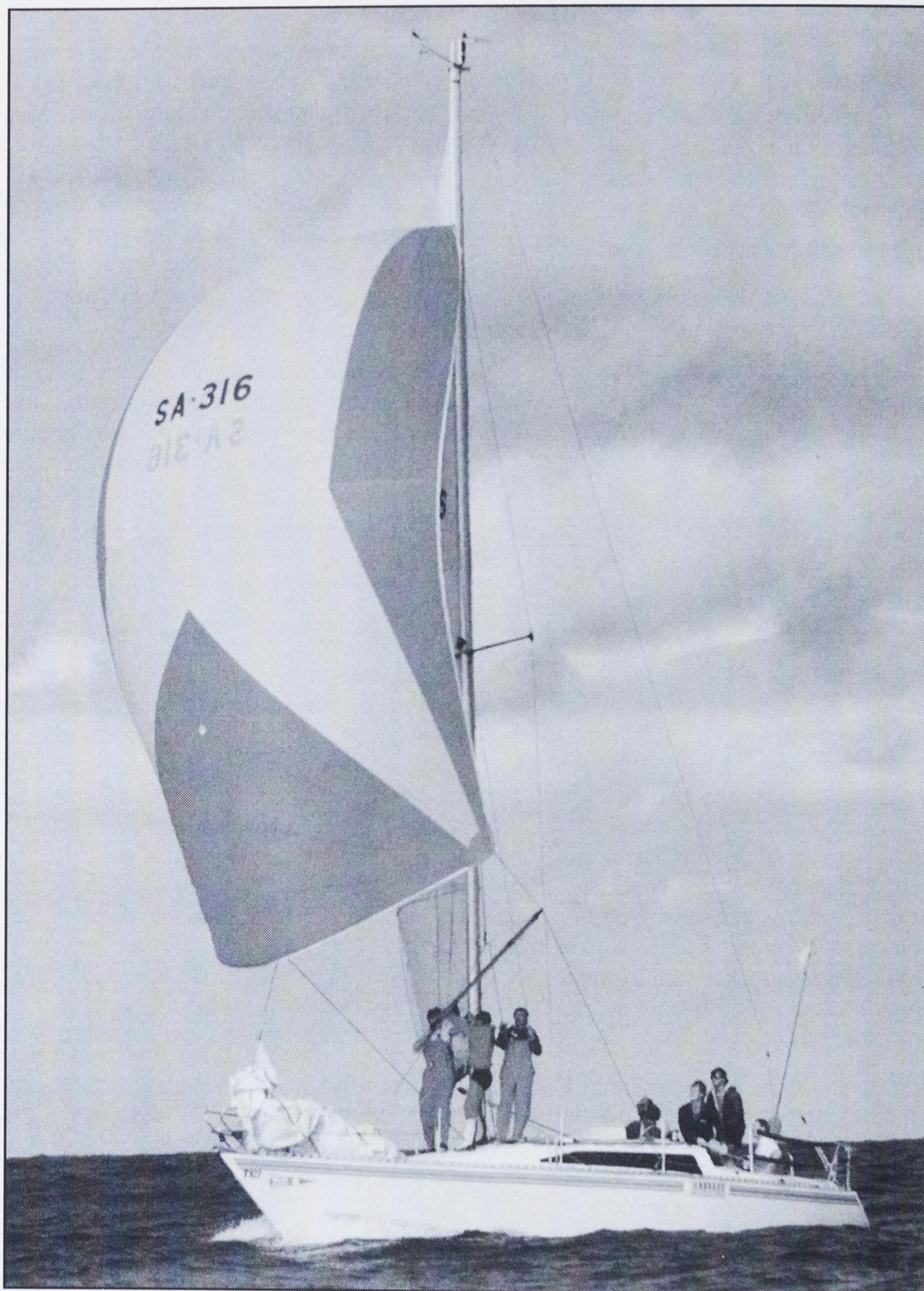
The Motorised Brigade of the main conventional force would be an independent brigade identical in its organisation to that of the RRF. Its role

would be to provide infantry support to whichever of the Mechanised Divisions is operating in close terrain or has to deal with an enemy in prepared positions. Like the armoured brigade, it would be placed under the command of the division for the duration of the given mission, reverting to Army control thereafter.

THE TERRITORIAL FORCE

The Territorial Force will have three main roles:

- * Counter-insurgency operations,



Aided by a Barcom G-NAV 600 GPS navigator, the yacht "Barcom Seaboard" achieved a remarkable 4-hour win on handicap in the annual Wilbur Ellis da Gama Ocean Race. The race, from Durban to East London, attracts entries from all over South Africa, and is regarded as one of the toughest in the country. Entries vary in size from 18.5 M, down to 9 M, and for "Barcom Seaboard" to beat

yachts nearly twice as long, is a tribute to her navigation. This navigation was made possible only by the crew to precisely record and monitor their progress and ensure that they made the best possible use of the fast-running Agulhas current.

including border security;

- * Rear-area security operations for conventional forces;
- * Support for the Police.

Apart from their purely military roles, the various elements of the Territorial Force would also have secondary civil defence and disaster relief roles.

The responsibility for internal security operations should fall to the Police's new Internal Stability Division or, preferably, to an independent force outside both the Police and the Army. As soon as the Internal Stability Division has developed to a level where it can perform its mission without troops in support, the Army will be able to cut the strength of the Territorial Force considerably. The Commandos could then transfer the Police *with* their "home and hearth" protection role. The Army would then retain responsibility only for border security, large-scale COIN operations and rear-areas security operations in time of war.

The missions of territorial defence would fall, as they do today, to the regional Commands. The forces available to these Commands would vary with their area of responsibility. The basis might be a light infantry brigade *without* the artillery and

anti-aircraft elements. The armoured car regiment would have patrol vehicles, and the mechanised infantry battalion would become a motorised infantry battalion. Most of these units would be Citizen Force. Each Command might have one standing battalion group, and those with an international border within their area of responsibility might have two standing units. In time of peace, a Command faced with serious incursion or insurgency problems would be supported by elements of the RRF and RDF. In time of war, it would have to call up a portion of its Citizen Force elements.

The mission rear area security operations in support of the conventional forces may well bring these forces up against enemy airborne forces. This demands that the armoured car regiment and the motorised infantry battalions are sufficiently well-equipped to deal swiftly with such elements, destroying them before they can concentrate to carry out their primary mission, or disperse to harass friendly forces over a wide area. The patrol vehicles and the motorised infantry must have armoured personnel carriers for at least a portion of its strength.

CONCLUSION

The Army outlined here would be somewhat

smaller in numbers than it is today, with a *fully-mobilised* operational strength of some 170,000 officers and men. It would, however, be vastly better equipped for the contingency and conventional roles. It should be more than adequate to deter military adventures against South Africa or in the region, and should be able to deal effectively with any military problems that might actually arise.

The basis for this Army already exists. Given that there are no further radical cuts in defence funding, and that a coherent and workable manning policy is developed, it would not be difficult to develop the Army into a force such as outlined here. It would not make impossible demands on funding or manning, and there is a sound core of experienced personnel around whom the additional formation headquarters and specialised units could be formed. It would require imagination and hard work.



The Fifth Barcom Competition

- **Entries close 31 August 1992.**

R1 250 for Professional Military Writing.

The aim of the contest is to encourage writing on military subjects and to act as a forum for the expression of opinions and ideas.

Articles submitted must be *not less* than 2,500 words nor *more than* 3,000 words, written free-style, and may be supported by diagrams or black and white photographs of good quality. Subjects are to be of the author's own choice, but must be non-historical in context, and should be of either current or future military interest for Southern Africa.

Awards for the competition are:

1st Prize — R1,250, and the Barcom Floating Trophy & Minature

2nd Prize — R650 and a minature

3rd Prize — R350 and a minature.

For the first time, a special award of

R600 will be made for the best entry received that deals with the subject of communications. This award may be coupled with one of the prime awards.

One of the objectives of the competition is to encourage independent thought and to produce articles of a professional nature that will challenge the existing system by proposing a better way of executing current policy, directives and practices. Entrants must be able to justify their arguments and be prepared to stand by their convictions.

Originality, style, clarity and logic of argument will carry particular weight with the adjudicators, and all articles must be submitted in either English or Afrikaans, typewritten or printed, in double-spacing on A4 size paper, using one side of the page.

Entries for the competition close on 31 August 1992, and the winner will be announced during November 1992. Late entries will be returned.

The adjudicators have asked that we

emphasize that originality is one of the prime elements that is considered when the papers are evaluated.

All entries are to be submitted under the author's name and the winning article will be published in *Armed Forces*. Other articles may be published and will be paid for at the standard rates, and copyright of all published articles will rest with *Armed Forces* and Barcom. Judging will be done by a panel of four, and their decision will be final.

A cover page should be included which identifies the manuscript as an entry for, "The 1992 Barcom Competition for Professional Military Writing", giving the title of the entry and the author's name and address. Nowhere else in the manuscript should the author's name appear. All articles received will be acknowledged by letter.

**The Barcom Project
Professional Military Writing
Competition
P O Box 23022
2044 JOUBERT PARK.**

LETTERS

Letters of Defence subjects are welcomed but it is necessary for the authors to include their names and addresses which will not be published if not desired.

MOWBRAY

Dear Sir

It was with relief that I received your note regarding the February/March issues, and I look forward to receiving them.

The content of your magazine has improved over the last couple of years, and I look forward to further improvements. Will you be recommencing the inclusion of the Defence Industry Supplement? This was most interesting.

My only complaint is in respect of your proof-reading - this needs some attention.

Yours truly

TA Buser

Editor

In lieu of the Defence Supplement, we are featuring more information from the Industry. We hope that a new system will eliminate typographical errors.

WESTGATE

Dear Sir

What a surprise I received the other day when I saw the April 1992 issue of *Armed Forces Journal* had appeared back on the shelves.

Your Journal is very informative and does make a person think things out in a broad aspect.

Please! Continue with this Journal.

A number of articles in this issue have made me write to your Journal that have given me cause to question the system, etc.

The first issue refers to the article, "International Defence Cutbacks" about the part-time Defence Force member throughout the world who are the main force to be called up when the need arises (as during the Gulf War), and also the comments at the end of the photograph caption on Page 16 about

Lance-Corporal Jan Serfontein's: "That he had not been properly briefed by his unit that he would be more than welcome by the SADF to volunteer and remain an active member of the SADF."

I was called up to an Infantry unit for my two years of National Service, after which I was allocated to a Citizen Force unit in Germiston, during which time I was in the process of furthering my education. In 1990, I started a two-year course to enable me to advance in my career. In my second year of the course, I requested a transfer to the South African Medical Services Corps. (I needed to request this transfer myself as the SADF does not seem to transfer members with medical training once they are trained, unless such a person has requested this himself).

I am now a professional nurse and have received the transfer.

The above transfer took from March 1991 to April 1992 before I knew that I had been allocated to my new unit, but only after I had written to the Minister of Defence about my problem.

The article as mentioned above shows how unhelpful the Defence Force is regarding the part-time member. There needs to be a review of the system.

The second issue refers to the letter on Page 35 regarding the appearance of some troops on parade.

I do agree with Mr Oosthuizen that some of the parade members are not properly dressed and that the parade was not as "puik" as it could have been.

I draw your attention to the opening of parliament this past year, when two high-ranking Defence Force officers following the President up the stairs onto the podium and then into parliament itself, did the military manoeuvres very unprofessionally. It seems to me that all ranks should do basic military drill at all times. The lower ranks normally look up to high ranks, and they should set an example.

Thank you for a wonderful journal.

Yours faithfully,

AD Teasdale, QNRN.

Editor

Thank you for your comments. As regards the soldier who was not properly briefed and your own request for a transfer, it would probably be wrong to blame the SADF, per se; but rather "slapgat" unit administration. Concerning your comments about drill standards, perhaps it is an instance that could be drawn to the Sergeant Major of the SADF.

RD 2

GLEN ROCK, PA 17327

USA

Dear Sir

I very much enjoy reading *Armed Forces Journal*. Not only is it informative, but also very well written.

Having just received my January 1992 issue, I find that on page 5 is mentioned the Fourth International Symposium on Explosive Technology and Ballistics. I would like to know where I can write for further information regarding this symposium.

Also, can someone kindly give me the address/es of any company/ies that market ballistic armour, such as vests and helmets in South Africa. Any information will be greatly appreciated.

Sincerely

Steven Barton

HEADQUARTERS

NAVAL CADET CORPS

Dear Sir

The Port Elizabeth Branch of the Naval Association of South Africa was requested by Commander Charles Allen, (SAN, CF, Retd) to hold a Memorial Service to commemorate the sinking of HMS *Cornwall*, HMS *Dorsetshire*, and HMS *Hermes*, at Easter 1942 in the

LETTERS

Indian Ocean and the Bay of Bengal. This was deemed appropriate in view of the fact that 57 South African sailors died in these three ships.

I thought you might like to publish the attached report in your Journal. We believe that it was the only such service held in South Africa. We also believe that these were the most deaths recorded at sea during WWII in any one action which involved South Africans. Like so many other things, this is one of those forgotten items, yet is part of the South African Navy's heritage. These men were South African sailors, even though they were serving in the Royal Navy!

Would it not be appropriate for the SA Navy to erect a small memorial in memory of these gallant men?

Kind regards,

SM Bartie

Senior Staff Officer Admin: Lt-Cdr

Editor

*We have printed this in this issue.
Thanks for the copy and the suggestion.*

**KFAR HOREOH
ISRAEL, 38955**

Dear Sir

Many, many thanks for your warm letter. I cannot possibly thank you enough or know why I should be so deserving of the kindness and the trouble you have put yourself to on my behalf.

I received a letter from those former champions of the Cadet Band Competition - Forest High. Unfortunately, they have no record on film of their band. It is indeed a great pity that these chapters of South Africa's armed forces have not been chronicled. Frankly, I am sure that someone (maybe Wit Command or Newsreel people, or TV) has filmed this, or for instance, the 75th anniversary of the Transvaal Scottish. The problem is finding them.

Perhaps *Armed Forces* or someone you

may know would make it a project to be followed up before things change and perhaps the chance will be lost.

As you have now probably received my second letter, you know that even (a) fine colour photo/s would be appreciated. Should you hear of anything, please let me know. Please accept our grateful thanks. As a young lad, I many a time followed "the Jocks" on Church Parade from the Union Grounds to St George's Presbyterian church. So too the other regiments. My brother was a volunteer in the War for the Armoured Corp Regiments. All of our children, while not having been brought up in South Africa, have the deepest love and respect for the country and are very familiar with the names of the Regiments.

I remain most sincerely and respectfully yours; with blessings from the Holy Land,

Rev M Katz

JOHANNESBURG

Dear Sir

I noticed from the video footage screened on television, showing the race riots in the cities of the United States, that members of the National Guard activated for duty appeared to be fully equipped and were dressed in camouflage. They also looked as if they were wearing full webbing and carrying what I took to be bayonets. If they are supposed to have reacted with such speed to the call-out, how is this done? Are they on permanent standby, or was somebody stretching the truth again?

Yours sincerely,

FG Clark

Editor

Firstly, did you notice the black boots and their shine? All US troops, whether they are PF, National Guard or the various Reserve formations, are at all times fully equipped on the same schedule of issue. And it is some issue! During basics, it is customary for many camps to require that trainees buy, at their own expense, a pair

of additional shoes just for display purposes. Camouflage is one of the standard work/operational uniforms and after being dropped for a short time, bayonets had to be reintroduced. Normally, National Guard members are not on standby - it could have been otherwise in this instance - but all US part-timers do at least 11 bivouacs and 1 camp per year. Weapons will be kept in a local armoury, which will be staffed by a small number of Fulltime members of the National Guard or Reserve units, so they are able to be quick on the draw. Incidentally, there are indications that the SADF will shortly be converting to a camouflage uniform.

**PORTO
PORTUGAL**

Dear Sir

I have for many years very much enjoyed reading your *Armed Forces* magazine. I was in the Rhodesian Forces when I first came across it, and found the content extremely interesting.

I had a friend in Johannesburg who was kind enough to send it over to me in Portugal after I had left Zimbabwe a few years ago. Unfortunately, two months ago my friend went over to Australia, and I was left without a magazine.

I would very much like to continue enjoying reading this magazine, thus I would ask you to kindly send the necessary information for me to take out a subscription.

Yours sincerely

JHL Teixeira



The Captain's Column

Sainted Superchickens

We live in an age of the Superchicken! If you've ever been called chicken-livered or chicken-hearted, you'll know what I mean. Or you may be one of those unfortunates, branded as being "hen-pecked" by your peers, meaning that in reference to your wife, there's no doubt as to who rules the roost! And that's a word going back to 1680. So was the term used by Lord Byron

On the other hand, you may be lucky enough to be called a "spring-chicken"—a compliment against the ravages of age, suggesting that you somehow have not lost as yet something of the qualities of eternal youth. Again, in the competitive society in which we live, a world of ranks and company ladders, and executive family trees, there's a lot of emphasis placed on the so-called "pecking order". And often, "it's not what you know, but who you know", and the "Peter Principle" that raises people to the highest eve of their incompetence!

This may well give us a "cock-eyed" view of life; again a phrase related to the chicken, which comes from the Old English word, *cicen*, which has added so much to the English language. The meaning is of a squinted, crooked view of life. Probably, the term we despise most is that used by the 17th century writer, Sir Thomas Stafford, who used it to denote lack of courage. "Chikins," he wrote in quaint English, "to be afraid of every cloud." That reminds one of, was it Chicken-Licken? who went about fearing that the sky was about fall on his head

In a sense, chicken is good for you. It has low salt content, is short on fibre and is the most easily digested of all meats. One chicken breast alone, they tell us, supplies more than enough protein, Vitamin A, niacin and calcium for our daily needs. Chicken fat is mostly unsaturated, so it's a blessing to those on low-cholesterol diets. Even diabetics can eat chicken, except the skin. South Africa is, today, one of the largest broiler producing countries, though it's still hard to answer the question: Which came first; the chicken or the egg?

Amazingly enough, since it was first domesticated, around 3000 BC, the chicken was worshipped as a god; and that brings us to the religious motif.

There's a beautiful verse that Jesus spoke, with tears running down His face, about a wayward people who were reluctant to accept Him as their Saviour. "Hen" in Scripture is used of the female domestic chicken, and Matthew 23:37 records the Crying Christ as saying, "...How often I wanted to gather your children together, as a hen gathers her chicks under her wings, but you were not willing!"

The result is a cock-eyed view of life, one in which we are hen-pecked rather than hen-protected, and because we are not willing to come to Jesus, we remain filled with fear—the sky is forever going to fall upon our heads! It is ever so, even with disciples. In the sinking boat, they had eyes only for the storm, and not for the Saviour. When the thousands were fed by Christ's miracle, they could see only their lack, instead of His loaves. The disciples, too, were concerned about a "pecking-order": Who would be the greatest? they asked, even as the Lord was on His way to Calvary. And Jesus had to show, by basin and towel, that real leadership comes not by height, but by humility.

That invitation of Jesus still stands. Way back in Genesis, the figure of the dove is used for the Spirit of God who brooded upon the face of the waters. He was there, amid scenes of darkest chaos, to nourish and cherish. So in the New Testament, we have Jesus, again as a mother-bird, calling to rest and comfort and strength those who eventually, by waiting on the Lord, "shall mount up with wings like eagles; they shall run and not be weary, they shall walk and not faint." (Isaiah 40:31).

The point is, are you willing to come? Or are you too "chicken"?

Brian Tuck

MAJOR



The Programme Department of the Salvation Army.

SA Naval Memorial Service

On the 5th May 1942 at 13:40 hrs., HMS *Cornwall* and HMS *Dorsetshire*, both County Class cruisers of the Royal Navy, were proceeding apace from Colombo to join Admiral Somerville's Force A of the Eastern Fleet, the plan being to attack the Japanese fleet in a night action.

At 13:40, Japanese bombers signalled their flagship, "enemy in sight", as they looked down on the two speeding cruisers in the sea far below. These bombers came from Admiral Nagumo's fleet, sent to bomb Colombo - the same fleet that devastated Pearl Harbour.

The attack was commenced and approximately 20 minutes later, both cruisers had sunk, taking with them 1,546 men, 41 of whom were South Africans.

Four days later, this same Japanese fleet carried out a bombing raid on Trincomalee; HMS *Hermes* had sailed from Trincomalee but was spotted by a Japanese seaplane. An attack was launched against HMS *Hermes* by fifty bombers, and 20 minutes after being sighted, she had sunk, taking 302 men with her, 16 of whom were South African.

To mark the 50th anniversary of these sinkings and to remember the 57 South African sailors who lost their lives, a Memorial Service was held at SAS *Donkin* on Sunday, 26 April 1992. The service was organised by Cdr Charles Allen, and was conducted by Chaplain Ron Rayner. The service was attended by 192 people, among whom were a number of survivors of these ships. The local Naval Cadet Detachment cadets and cygnets assisted at the service. During the service, the South African Roll of Honour of each ship was read out by the survivors present at the service.

HMS *Cornwall*

25 South Africans

HMS *Dorsetshire*

16 South Africans

HMS *Hermes*

16 South Africans



PRESS RELEASES. . . .

NEW EQUIPMENT. . . .

EEV CCD Camera Technology

The combination of EEV CCD sensors fibre-optically coupled to EEV image intensifiers, provide an imaging down to extremely low levels of light in EEV's new range of intensified CCD Photon cameras. The two main camera types - for scientific applications and for low-light imaging applications - are available from the South African distributors, *Bestobell Electronic Technologies*.

The scientific camera can be used for bio-luminescent imaging, star tracking and telescopes, low power-laser imaging, medical imaging and spectroscopy. It incorporates an external intensifier gain control for precise and repeatable observations, and can be supplied with alternative types and grades of intensifier, such as UV sensitive and ABC control, if required. The low-light camera provides fully automatic operation from dusk conditions to starlight. Careful control of the lens aperture and intensifier gain setting, at all times, ensures maximum intensifier lifetime. Applications include sub-sea imaging, low-light airborne reconnaissance, endoscopy, low-light surveillance of sensitive installations, and space exploration.

EEV will design and manufacture sensors to customers' requirements, and also incorporate these and other manufacturers' sensors into camera assemblies to meet specific imaging needs. With only 65 components and a combined flexi-rigid PCB which reduces interconnections to the minimum, it is

probably the most rugged low-light level camera on the commercial market today.

EEV P2000 Nite-Watch

Because of its compact, modular construction and its wide range of accessories, EEV's Nite-Watch can be converted quickly and easily to provide the complete answer for specific night-vision requirements. The result is the most cost-effective solution to nature's greatest challenge - darkness. The Hand-held Nite-Watch has just arrived in South Africa and is available from EEV distributors, *Bestobell Electronic Technologies*.

Weighing only 325 grammes, Nite-Watch has a fixed-focus eyepiece, push-button switch, high-quality 25mm F1,4 lens with protector, and takes C-mount lenses. It is water-resistant, and optical features include wide-angle through to telephoto lens, "Penlite" battery converter pack, infra-red "invisible" illuminator and camera adaptor.

Shorts & Spartanics Together

The Shorts Group of Bombardier Inc., and Spartanics of the USA have agreed to jointly market, develop, manufacture and support weapon simulation and training devices.

Both Shorts and Spartanics are experienced in this market. Shorts, a world leader in close-air defence missile systems for over 30 years, produce training and simulation equipment for their Javelin and Starburst missile

system. Spartanics, a world leader in small arms simulation for over 15 years, manufacture a highly successful basic and advanced Weaponeer marksman-ship trainer.

Siemens Plessey Systems Formed

Siemens Plessey Radar, based at Chessington, and Siemens Plessey Defence Systems, based at Christchurch, have been merged to form a single company: Siemens Plessey Systems Limited. The new company, which will operate within Siemens Plessey Electronic Systems Limited, will have its headquarters at Chessington. It comprises the four business divisions which were created late last year - Air Defence, Air Traffic Management, Defence Systems, and Tactical Communications Systems.

Joining together Siemens Plessey Defence Systems and Siemens Plessey Radar will reduce overheads, enabling the company to compete more effectively in current markets. With an annual turnover of around £250M, Siemens Plessey Systems will be able to maintain a high level of investment to develop areas of the business which have been identified as those with the most potential growth.

Air Traffic Management (ATM), where the company is already the third largest business in Europe, is one such area. The expansion of ATM activities will be helped by the availability of additional resources at the Christchurch site.

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Comments

85 COMBAT FLYING SCHOOL

The weekend of 18-20 September 1992 will see the celebration of the 25th anniversary of the establishment of 85 Combat Flying School, and all past members are invited for a bumper weekend. Starting on the Friday evening and followed by an Open Day on Saturday and concluded with a dinner dance in the Pietersburg Town Hall. To advise of your attendance contact: **Cmdt John van Zyl, 85 Combat Flying School, Private Bag X9346, Pietersburg, 0700.**

US ORDER OF PRECEDENCE

There is little doubt that the Order of Precedence of the United States Armed Forces when on parade will provide information for comment:

1. Cadets, United States Military Academy
2. Midshipmen, United States Naval Academy
3. Cadets, United States Air Force Academy
4. Cadets, United States Coast Guard Academy
5. Midshipmen, United States Merchant Marine Academy
6. United States Army
7. United States Marine Corps
8. United States Navy
9. United States Air Force
10. United States Coast Guard
11. Army National Guard of the United States
12. Army Reserve
13. Marine Corps Reserve
14. Naval Reserve
15. Air National Guard of the United States
16. Air Force Reserve
17. Coast Guard Reserve
18. Other training organisations of the Army, Marine Corps, Navy, Air Force and Coast Guard, in that order, respectively.

It is interesting to note that the Midshipmen of the United States Merchant Marine Academy precede the Army and all other arms of the service.

CERTIFICATE OF APPRECIATION

Unfortunately, all too often the functions of the professional media are not clearly understood. Their prime role should cover the broadest possible spectrum, avoiding cults or what could be seen as endeavours towards self-aggrandisement, while conversely presenting information that may not benefit individuals, their most important task is to support the interests of their chosen fields with independent thought and ideas.

In the Defence environment, however, they can play an important role and exert some degree of influence in developing opinions. This was well illustrated by a much valued *Certificate of Appreciation* that was presented to the Editor of *Armed Forces Journal* by the Office of the United States' Defence Attaché in Pretoria, with the citation reading as follows:

"For exceptional service and professional assistance that significantly contributed to mission accomplishment of USDAO Pretoria and greatly enhanced the military relations between the Republic of South Africa and the United States of America".

COST AND EFFECTIVENESS

With economy becoming a convenient watchword, it is fair to wonder if not too much is being spent on what is referred to as security. The filling-in of time-consuming forms, whose formats are changed with regular frequency, does little to inspire confidence in a system. Rather it is the attitude of those in the front office. In some of the biggest and most sensitive areas in the world, the main factor in the overall security appears to be the trust placed in those working in the area, their loyalty and commonsense.

"At the very heart of war lies doctrine. It represents the central beliefs for waging war in order to achieve victory....It is the building material for strategy. It is fundamental to sound judgement." - General Curtis E LeMay, USAF.

"You should not have a favourite weapon. To become overfamiliar with one weapon is as much a fault as not knowing it sufficiently well....It is bad for commanders....to have likes and dislikes." - Miyamoto Musashi: 17th Century Japanese Warrior.

ON TRIAL

We await with interest the result of the

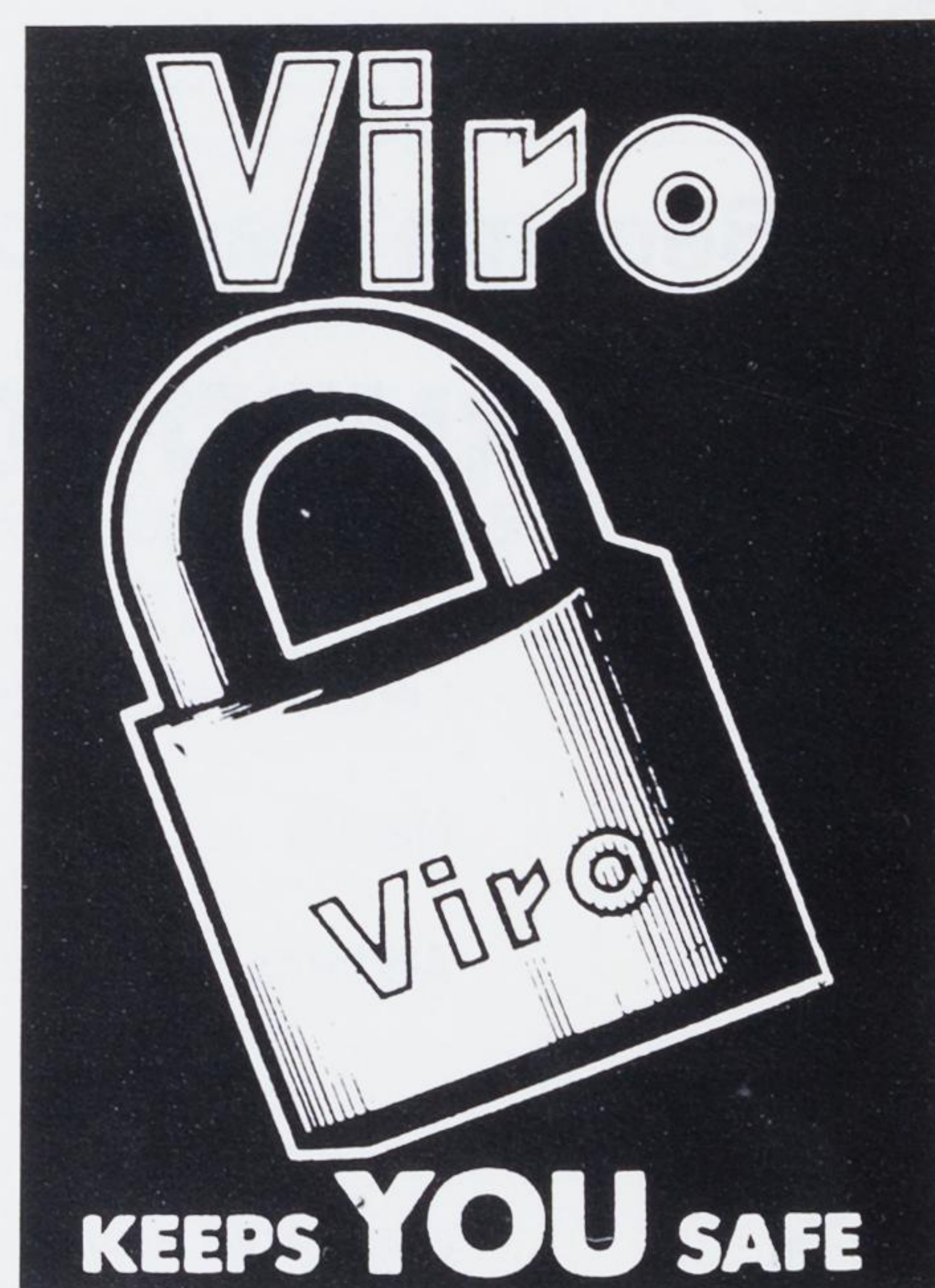
trial of a Transport Company, set down for 17 June 1992 at the Magistrate's Court in Roodepoort, in connection with letters allegedly sent to employees indicating that if they attended military camps, they could be dismissed.

COMRADES ENTRY

The South African Defence Force had a bumper entry for this year's Comrades Marathon, with over 360 known entrants. Some members of the SADF might have entered privately as individual Citizen Force or Commando individuals, and not been included in the total of 360. Once again, Major-General DJ Mortimer is amongst the SADF entrants.

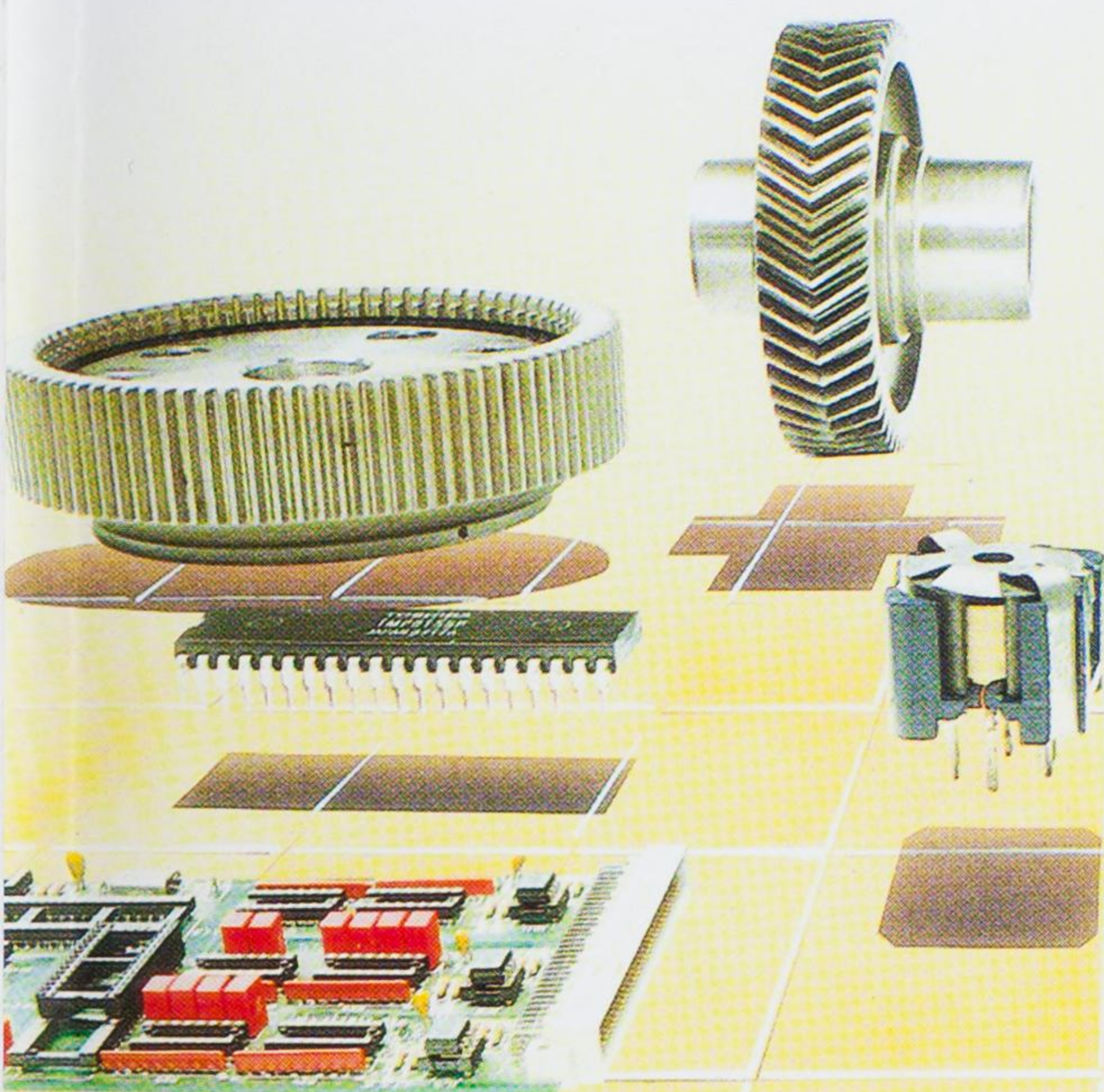
YOU SAID IT!

Armed Forces is a monthly journal devoted to defence matters. The subjects vary from technical descriptions of the most modern weapons to matters relating to pay and conditions in the SADF. The Editorial covers particularly current affairs and is very forthright on some matters. For anyone interested in the affairs of Southern Africa, particularly relating to defence matters, this is an interesting and informative journal. At R5 per copy or R40 per annum, it is indeed good value - *The Toorie: Newsletter of the Cape Town Highlanders.*



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